

encloses those basins. The southern range, which lies in the main axis of the T'ien-shan, here attains heights which, for distances of about thirty-five miles in the case of the Barkul-tāgh (Map No. 34. B, C. 2) and about twenty-six miles in that of the Karlik-tāgh, rise well above the permanent snow line and culminate in a few peaks of close on or slightly over 14,000 feet. The range to the north, for which I was unable to ascertain any general name,<sup>4</sup> also has, in its central portion, a crest line of over 11,000 feet (Map No. 34. D. 1) and in places probably carries patches of permanent snow.

Effects of  
moister  
climate.

The great height of the southern range assures to it and the basins along its northern side much more precipitation than is received by the northern slopes of those portions of the same range which lie to the east of the Karlik-tāgh or to the west of the Barkul basin. The moister climate thus secured manifests itself not merely in the thick belt of conifer forest already referred to, which lines the northern slopes of the range between the longitudes mentioned, but also in the abundance of pasture to be found farther down and all along the bottom of the basins. The fact that the Barkul basin falls nowhere much below 5,000 feet, while that of the Tur-köl lies throughout over 6,000 feet, contributes to produce here climatic conditions far more favourable to pastoral life than could possibly be found either to the south or north of the basins. Of the ground northwards little is known beyond the fact that it lies much lower, and that though strings of wells make this 'Gobi' passable along certain lines, it affords but very poor grazing until the hills to the south-east of Kobdo, outliers of the Altai, are reached.

Aridity of  
area south  
of Barkul-  
tāgh.

Of the region which stretches south of the Barkul-tāgh it can be safely asserted that, as the surveys recorded in Map No. 34 show, it is all a waste of stone, gravel and sand except where subsoil water, gathering below the utterly barren glacis of the range, permits the creation of such small irrigated oases as are to be found between Taranchi and Hāmi (Map No. 34. B. 2, 3; C. 3). What patches of desert vegetation are to be found near them are barely sufficient for the needs of the traffic moving along the Hāmi-Turfān high road and for the winter grazing of the modest flocks owned by these small settlements.<sup>5</sup> Similar conditions prevail around Hāmi and eastwards, the few oases including Hāmi being limited in extent owing to the scanty amount of water available from the Karlik-tāgh for purposes of cultivation, while the southern slopes of the range are extremely rugged and except in the narrow deep-cut valleys quite barren.<sup>6</sup>

Historical  
role of  
Barkul  
basin.

From the geographical facts thus indicated in their broad outlines two conclusions of historical import may safely be drawn. One is that the Barkul basin with its easterly adjunct must always have exercised a special attraction for nomadic tribes in occupation, whether temporary or prolonged, of adjacent parts of south-western Mongolia. The other inference equally obvious is that the presence of such nomadic, and as such necessarily warlike, neighbours in this basin must have constituted a constant and very serious danger to the oases to the south, and also to such trade and traffic as might find their way along the route leading through them. Physical conditions have always restricted these oases to an area too small to support a population large enough to defend itself. At the same time the range rising above them could not afford them adequate protection against raids and attacks from the north; for the pass known as the Barkul-dawān, about 9,200 feet above sea-level (Map No. 34. D. 2), is never completely closed by snow and is easy enough to be practicable for carts during the greater part of the year. This pass gives convenient access from the eastern end of the Barkul basin straight to the main oasis of Hāmi and all the neighbouring

<sup>4</sup> To the portion which lies between the Tur-köl in the east and Nārin-kür in the west, I heard the designation of Kōk-tun applied.

<sup>5</sup> For a brief description of this ground, see *Serindia*, iii. pp. 1154 sqq.

<sup>6</sup> For some account of the geographical conditions affecting the Hāmi oasis and the region along the foot of the Karlik-tāgh, cf. *Serindia*, iii. pp. 1147 sqq.; also *Desert Cathay*, ii. pp. 345 sqq.