

matter, once for all, as one which gave me much trouble and annoyance during the whole of my stay and travels in Eastern Turkestan.\*

It must not be supposed, however, that because I was given permission to use instruments I have been able to turn out very accurate surveys of the countries traversed. The rapidity with which we have always travelled has made it impossible for me to do more than carry on a continuous route survey, checked by frequent astronomical observations taken at night; and even this is sometimes meagre and incomplete owing to the intense cold which we experienced throughout almost the whole of our travels, which made even the handling of a prismatic compass at times an impossibility; this, coupled with the shortness of the winter days, the occasional excessive length of the marches, many of them through snow, and the necessity on these trips of always cutting down both the baggage and the limited establishment of camp servants with which I originally started, must be held to excuse any incompleteness in the maps that I furnish.

During our first excursion the marches we made were as follows:—

From Yangí-Hissár (Káshghar) to—				Miles.
1.	Besák (Upper Artysh District)	...	...	26
2.	Chung Terek	...	...	20
3.	Chakmák Forts	...	...	20
4.	Balghun Báshi	...	...	10
5.	Turgat Bela	...	...	15
6.	To Turgat Pass and hill above Chadyr Kul and back to (5)	...	...	32
7.	Back to Chakmak	...	...	25

and back to Káshghar by the same road. I succeeded, with no little difficulty, in keeping up a continuous route survey, and took observations for latitude at four points on the line of march, the most northerly being at Turgat Bela (north lat.  $40^{\circ} 23' 53''$ ) on which occasion, while observing, the thermometer stood at  $10^{\circ}$  below zero (Fahrenheit), and an intensely bitter wind was blowing. Later on the same night the thermometer fell to  $26^{\circ}$ , while inside the *akooe*, (Kirghiz tent) where we slept, it was as low as  $8\frac{1}{2}^{\circ}$ , a temperature hardly adapted for carrying on an elaborate Survey.†

We left Yangí-shahr (the new city of Káshghar) and, going northwards, crossed the River Kizil by a good wooden bridge. At a distance of  $5\frac{1}{2}$  miles we passed on our left the old city of Káshghar, beyond which we crossed the River Taman by another bridge. This stream passes immediately to the north of the town, and joins the Kizil at a short distance to the east, the two forming the Káshghar Darya. At the time we passed there was but little water in either stream, that little being frozen, so that it was impossible to form any idea of the size of the vast mass of water that must come down in the summer time. The left bank of the Taman is covered by tanneries and cemeteries; the road runs nearly north and enters a narrow lane between two mud walls, on either side of which are enclosed gardens, fields, and hovels. These continue for some four miles, when the road emerges on to an open stony plain forming a very gently rising slope up to a small spur from a low range of hills running nearly due east and west, through a gap in which, formed by the river Artysh, the road passes. On the north side of the range is the wide and fertile valley of the Artysh, a name given to

\* I may mention that in Kashghar I had been questioning a sepoy, who professed to know all about the Alai and adjacent country, on the subject of the supposed double issue from Lake Karakul. He positively assured me that the waters from it flowed west into the Oxus. A few days subsequently, when talking on the same subject, he assured me with equal confidence that he had seen the place, and that its waters flowed east to Kashghar. He subsequently admitted that he had never been within 50 miles of the lake!

† It may be imagined that taking observations in the open, to stars, with the thermometer standing below Zero, is not a very pleasant occupation. After handling the instrument for a short time, sensation, so far as one's fingers are concerned, ceases, and during a set of observations it is necessary to rush frequently into the adjacent tent to restore circulation over a fire. The recorder, on such occasions nurses the hand lantern with great care, and although the ink is placed inside the lantern, yet it would freeze on the pen between the lantern and the paper. I was eventually obliged to allow a pencil to be used on such occasions. My faithful Madras servant "Francis" also experienced no little difficulty in getting the lamps to burn properly. The oil becomes very thick from the cold. The air holes had to be carefully enlarged for high altitudes, so that while admitting more air, they might still be small enough to prevent the high winds which were frequently blowing, from extinguishing the light.