

this and the value previously deduced from the south gives $77^{\circ} 27' 0''$ which has been assigned as its final position. The smallness of the amount of the adjustment necessary to connect my own work, depending on my own astronomical observations at Káshghar, and that depending on the Indian Survey derived from the astronomically fixed position of Madras is a gratifying proof of the general accuracy of the work.

This sketch would be incomplete without a few lines as to my connection on the north with the Russian Survey, which appears, I think, equally satisfactory with the above.

The only position in the Amir of Kashghar's dominions in Eastern Turkestan astronomically fixed by the Russians is that of Káshghar. This was done in 1872, the year prior to our own visit, by Colonel Scharnhorst of the Mission under General Baron Von Kaulbars. A comparison of results is given:—

Position of Yangi-Shahr (Káshghar) determined by English Mission, 1873—

| | | | |
|-----------|-----|-----|---|
| Latitude | ... | ... | $39^{\circ} 24' 26''$ North. |
| Longitude | ... | ... | $76^{\circ} 6' 47''$ East of Greenwich. |

Position of Yangi-Shahr (Káshghar) determined by Russian Mission, 1872—

| | | | |
|-----------|-----|-----|---|
| Latitude | ... | ... | $39^{\circ} 24' 16''$ North. |
| Longitude | ... | ... | $76^{\circ} 4' 42''$ East of Greenwich. |

As the quarters occupied by the British Mission, where the observations were made, lies outside and to the east of the fort, while those occupied by the Russians were in about the same latitude and nearly one mile to the west of the fort, the difference in longitude is reduced to about one mile, our latitudes being practically identical. I would have wished to take the mean between the two as the final position of Káshghar, but as our stay there was of much longer duration than that of the Russians, and I had opportunities of taking many more observations than they did, I prefer leaving my own values intact.* The slight discrepancy now noticed disappears on the road between Káshghar and Chadyr Kul, the only line of survey common both to the Russians and ourselves, and along which I carried a rough traverse survey in which the distances were estimated by the time occupied on the line of march. Prior to my departure from India Colonel Stubendorff, of the Russian War Office, had sent to Colonel Walker, the Superintendent of the Great Trigonometrical Survey, the positions of a number of points in Russian and in Khokandian territory that had been astronomically determined by Russian officers. Amongst them was the north-east corner of Lake Chadyr Kul. Bearing this in mind, when at the most northerly point on the road reached by us, I took a bearing tangential to the east end of the lake, which lay nearly due north at a distance of about three miles from us. On my return to India when I plotted in my work from my own astronomical position of Káshghar, I found that by adopting the Russian value of the east end of the lake, viz., latitude $40^{\circ} 43'$ north, our positions in longitude† of the same point exactly coincided.

In determining the position of Khotan I have made use of Pandit Kishen Sing's route from Karghalik to Khotan, and thence *via* Keria back to Ladakh. As a result of this route survey our previously accepted value of the longitude of Khotan has been altered by more than thirty miles. It may appear bold to make this extensive change in the position of a place that has been visited by a European explorer (Mr. Johnson), but the route survey executed by this Pandit is so consistent, and the plotted results agree so closely with the observed latitudes throughout the whole of his work, that I have no hesitation in accepting it as correct. I may further add that I have been in communication with Mr. Johnson on the subject, and that he freely admits the possibility of a large error in his longitude of Khotan.

* Since the above was written Colonel Walker has heard from Colonel Stubendorff that the Russian astronomical observations at Káshghar which were taken by Colonel Scharnhorst were referred to the most northern angle of the Yangi-Shahr, a position almost identical in latitude with my own, and differing by two-fifths of a mile only in longitude. Colonel Stubendorff mentions that the Russian observations depend on the eclipse of the sun on the 6th June 1872, and that corrections for error in the lunar tables have not been applied. This last remark applies to my own observations also.—H. T.

† $75^{\circ} 24'$ East of Greenwich.