

shown for Tun-huang, $94^{\circ} 47'$, is itself affected by the erroneous adjustment of R. B. Lal Singh's triangulation which, as explained above under Sheet No. 30, brought the easternmost triangulated point on the Mirān-Tun-huang route by $5' 10''$ too far to the east, it is possible that the longitude value adopted for An-hsi is also somewhat overestimated. This suspicion is borne out by Mr. Clementi's chronometric longitude value for An-hsi, which is $95^{\circ} 47' 20.6''$, and by Dr. Vaillant's values for Tun-huang and Hung-liu-yüan (D. 2), N.W. of An-hsi, each derived from observation of two lunar occultations. These are $94^{\circ} 36'.5$ and $95^{\circ} 23'.7$ against circ. $94^{\circ} 47'$ and $95^{\circ} 33'$ respectively in our sheet.²⁴

Roborovsky's observations at Tun-huang (Sha-chou), based on chronometric values and taken with special care, indicate for his station (a short distance from the town and almost due N. of it) the longitude of $94^{\circ} 42' 24''$.^{24a} This agrees very closely with the position derived from our surveys and shown in this sheet, $94^{\circ} 47'$, if allowance is made for the correction of $-5' 10''$ which, as just mentioned, has to be made in the longitude of the easternmost triangulated point near the Mirān-Tun-huang route.

It deserves to be further noted that the plotting of available traverses from the Tibet side brings An-hsi to a longitude of about $95^{\circ} 52'$, and that the Russian Trans-frontier map shows one of approximately $95^{\circ} 58'$. The various routes radiating from Tun-huang and An-hsi are controlled by the comparatively large number of latitude observations recorded below.

Regarding the historical topography of the An-hsi-Hāmi 'highroad', see the references given above for Sheet No. 37. The geographical features of the lower Su-lo-ho basin have been fully discussed in *Serindia*, ii. pp. 578 sqq., with special reference to the natural line of defence offered by the Su-lo-ho for the earliest Chinese road into the Tārīm basin past Lou-lan. There, too, I

have indicated the importance of the large oasis of Tun-huang with regard to this road and the irrigation facilities it derives from its situation on the alluvial fan of the Tang-ho, the largest tributary of the Su-lo-ho.

For descriptions of the desert belt, both marsh-edged and gravel 'Sai', extending along the Su-lo-ho from the Khara-nōr lake towards the cultivated area of An-hsi, and followed by the line of the ancient Chinese *Limes*, see *Desert Cathay*, ii. pp. 5 sqq., 40 sqq., 131 sqq.; for the oases of Tun-huang and An-hsi, and the important sacred site of the 'Thousand Buddhas' near the former, see *ibid.*, ii. pp. 10 sqq., 159 sqq., 235 sqq. The topography and remains of the *Limes* sections falling within this sheet are treated in *Serindia*, ii. pp. 585 sqq., 717 sqq.; iii. pp. 1089 sqq.

Within the area of the sheet we distinguish three well-marked zones. In the north the surveyed route towards Hāmi, first opened by the Chinese in A.D. 73 and since then a main line for China's Central-Asian expansion, crosses in succession the much-decayed hill ranges of the Central Pei-shan. Those shown on the map between the stations Sha-ch'üan-tzu (B.1) and Pi-ting-tzu (D.3) are manifestly connected with the five Pei-shan ranges distinguished by Professor Futterer's very careful topographical and geological survey along his more easterly route from near Mu-t'ou-ching (No. 37. D. 4) to near the Su-lo-ho bend (No. 40.B.4).²⁵ On both routes water and scanty grazing can be found only in a few isolated depressions of the broad desert valleys separating those ranges.

The low southernmost range of the Pei-shan towards the west seems to merge in an outlier of the Kuruk-tāgh (A,B.3). Between it and the foothills of the Nan-shan in the south extends the trough of the lower Su-lo-ho valley. The portion lying to the west of Tun-huang entirely shares the character of the delta and terminal basin of the Su-lo-ho, as shown in Sheet No. 35. C,D.4.

The abundant supply of water provided

real one.

^{24a} See *Scientific Results of Roborovsky's Expedition* (Russian), Astronomical Observations, p. 7; also his map, scale 20 versts to 1 inch.

²⁵ See Futterer, *Geograph. Skizze der Wüste Gobi*, in Petermann's Mittheilungen, Ergänzungsheft No. 139, pp. 11-22 and map.

²⁴ Cf. *La Géographie*, xxxv (1921). p. 499. The uncertainty inherent to all astronomical longitude observations under ordinary travel conditions is illustrated by the fact that the same observer's list shows for Ch'ien-fo-tung (B.4) a longitude of $95^{\circ} 6'$ which is quite irreconcilable with the position of this place relative to Tun-huang, the longitude difference indicated being at least $16'$, if not more, in excess of the