

SECTION III.—MAIN FEATURES OF THE REMAINS OF THE LIMES

Before reviewing the data which the Chinese documents published by M. Chavannes furnish as regards the organization and daily routine of the Tun-huang Limes, it will be convenient to note, as it were in a bird's-eye view, the main characteristic features of the extant remains of the Limes of which, as the result of my explorations, I have given a detailed description in the preceding chapters. We have seen a continuous line, capable of being watched and protected, coming from the east and stretching away for about a hundred miles westwards into the gravel desert until it strikes a natural flanking defence in the terminal marsh basin of the Su-lo Ho. Throughout, the line of the Limes keeps close to the course of the Su-lo Ho with the obvious purpose of utilizing the river as an advanced 'wet border' northward, just as the Romans did on many a Limes line of their empire, e. g. on the Danube.¹

Su-lo Ho used as 'wet border'.

Wall replaced by marshes.

The Chinese Limes of Tun-huang, in keeping with its character as a portion of the 'Great Wall', shows a line of wall uniform and absolutely continuous, except in places where the general direction permitted its designers to substitute impassable marshes or lakes, and thus to economize in constructive effort as well as in the maintenance of watch-posts. The saving effected was doubly important on desert ground bare of all resources.² Exact parallels to this, too, can be found on the Limes lines of the Romans, e. g. where they took their chain of frontier posts across the string of 'Shott', or salt marshes, south of Tunis or across the Kara-su lakes of the Dobrucha.³ Everywhere we can also trace the care taken to turn to full advantage whatever facilities the configuration of the ground offered for securing a good outlook or easily defended positions.⁴

Construction of Limes wall.

The same intelligent adaptation to physical conditions is observed in the method of constructing the wall, or *agger*. We have seen that along the whole length of the Tun-huang Limes it is partly built of fascines; placed crosswise in regular layers, which alternated with others of stamped clay and gravel, they assured protection to the wall against corrosion by wind-driven sand, that most powerful agent of destruction throughout this desert region.⁵ As material for the fascines, use was made either of reeds or of branches of tamarisks and wild poplars, whichever could be secured nearer.⁶ The regular length of these fascines was about 7 feet, and this, together with the longitudinally fixed fascine revetment, determined the thickness of the wall, which along the whole length of the Limes here discussed originally measured from $7\frac{1}{2}$ to 8 feet. The fact that the water needed for reducing the layers of stamped clay to cement-like consistency had, along a great portion of the wall, to be brought over considerable distances makes the exploit of its rapid construction all the more remarkable.

Chain of watch-towers along Limes.

Behind the wall, and nowhere far from it, rose the long chain of watch-towers intended for those who had to keep immediate guard over the line of the Limes and transmit signals and communications along it. At almost all the towers remains could be traced of quarters for the small detachments which garrisoned these posts and furnished watchmen and patrols. The distances between the watch-towers varied considerably according to the character and importance of the ground which had to be guarded, the extent of the view which the position occupied by the tower commanded, and similar local considerations which the detailed descriptions given above of the various sections of the Limes and a study of the map will help to explain. Here it will suffice to

¹ Cf. Kornemann, *Die neueste Limesforschung*, *Klio*, vii. pp. 79, 81.

² Cf. above, pp. 662 sqq., 718.

³ Cf. Cagnat, *L'armée romaine d'Afrique* (2nd ed.), pp.

569, 606, 681; Kornemann, *Klio*, vii. p. 93.

⁴ See above, pp. 600, 634, 641 sq., 662, 681, etc.

⁵ Cf. above, pp. 568, 570, 606, etc.

⁶ Cf. above, e. g. pp. 568, 592, 718.