

## CHAPTER 1

# IMPERIAL GEOGRAPHY OF THE CAPITAL AND CORE MACRO-REGIONS

In an essay on pre-industrial urbanism, the archaeologist Michael Smith (2007, 2010), offered several avenues for investigating forms of city planning in the world's early states. Urban planning, as he notes, is an articulation of institutional power, one that is coordinated through geometrically ordered cities like George Haussmann's Paris and Le Corbusier's Rio de Janeiro. Smith argued, however, that these grand pursuits were not unique to modernity but were a central feature of empires like the Aztec, Khmer, Egyptians, and the Qin. Occupying the top of the administrative hierarchy, capital cities incorporated the cartography of power and consolidated the operations of multiple institutional offices. From a conceptual and symbolic standpoint, the *capital* was the pivot of the universal order.

Attending to the capital as a distinctive urban form did not escape the attention of Xiao He, the Han founder's advisor. With regard to the building of Chang'an, Xiao He explained to the emperor:

It is precisely because the fate of the empire is still uncertain that we must build such palaces and halls. A true Son of Heaven takes the whole world within the four seas as his family. If he does not dwell in magnificence and beauty, he will have no way to manifest his authority, nor will he leave anything for his heirs to build upon (Lewis 2005, 177).<sup>1</sup>

Without a monumental center, the Han not only risked its own dynastic destiny but also failed to demonstrate its right to rule. Taking heed of his advisor's words, Liu Bang, who was himself a political outsider from the south and of questionable Huaxia pedigree, embarked on a massive, lengthy building spree, a project that would consume his successors' energies for the next two centuries and culminate in an exemplary capital as evoked by the name Chang'an (Everlasting Peace).

The subject of the first part of this chapter's investigation is the question of just how unprecedented or revolutionary Chang'an was. While previous studies tend to focus on Chang'an's correspondence with a preordained classical model of Chinese urbanism, our focus is not on this 35 km<sup>2</sup> Manhattan-size city as a product, but as a "generative dynamo," to borrow Timothy Pauketat's (2007, 198) phrase – a process driven by the needs of urban growth while striving to set a universal precedent. Instead of making the city and urbanism our analytical priority, a topic amply covered by others (Lewis 2005; Steinhardt 1990; Wheatley 1971), our turn to the archaeology of the wider Guanzhong basin, and its unique hydrology and rural landscape, as well as to Qin "ruins" revisits Chang'an as an experimentation with evolving problems of urbanization. What may have been remarkable about the new center of empire, we argue, is the development of an infrastructure that propagated new formations of urban life. It was the proliferation of mundane and chunky things – tiled rooftops, ordered streets, and sewage pipes – that both shaped people's perceptions and infused the capital with a degree of cultural cachet.

If the creation of Chang'an underpins one part of Han spatial politics, the expansion of uniform territorial administration (the junxian system) comprises the other driving force behind the project of consolidation. Over the last fifty years, archaeological discoveries of imperial county settlements and finds of copies of administrative documents, or *jibu*, across the Guandong (middle and lower Yellow River Valley) and Middle Yangzi macro-regions have helped substantiate the contours of the commandery and county system. The imposition of these jurisdictional scales and units however appears to follow a less linear and more tenuous course, one that cannot be so neatly explained as a chronological shift from a feudatory multistate order to uniform territorial integration, or from a weak to a centralized order. Han archaeology suggests that state spaces, even when they are made highly legible, are locally situated. The second half of this chapter examines spatial power in relation to specific contingencies emerging on-the-ground: (1) What is the role of "old" classic urban centers attached to independent kingdoms in this changing order? and (2) How are geographies of difference – the "new commanderies" in the south and the "old commanderies" in the north – reckoned with? The first case study pertains to the Guandong basin and the second to the Middle Yangzi valley. As a point of departure, we propose that this inquiry requires some understanding of the basic objects of spatial reworking themselves. Drawing on settlement archaeology, we argue that, in addition to opening corridors between contested zones, the development of spatial networks and the fixing of nodal points underpinned the tenuous project of unification. One of the advantages of this approach is to understand the spatial transformations that reshuffled regions and to help us expand on the conditions of political unification.

## AN EXEMPLARY CAPITAL?

*Geographical Background to the Guanzhong Region*

Chang'an is located at the center of the Guanzhong basin, which, as indicated by its translation as "land within the passes," is a well-protected valley at the confluence of the Wei and Yellow Rivers in north central China (Fig. 1.1a). Prior to Qin unification, six rival states divided control of much of the Yellow River Valley. In the middle reaches, the Qin state anchored its power in the loess highlands (modern Shaanxi, Shanxi, and Western Henan) and made the Guanzhong basin its political core. As the Yellow River descends eastward into the North China Plain, a considerable amount of silt is deposited along the river's banks and tributaries. Along the broad valleys in the lower reaches, this alluvium is responsible for creating one of the most agriculturally fertile zones in the "lands east of the passes," or the region of Guandong (e.g., the modern-day provinces of Henan, southern Hebei, Shandong, northern Anhui, and northern Jiangsu). Historically, the earliest states (Xia, Shang, and Zhou) trace their origins to the Luo basin (Luoyang), a tributary of the Yellow River – the geographic gateway dividing the loess highlands from the broad alluvial plains in the middle and lower reaches of the river (Fig. 1.1c).

Instead of installing the empire's capital in the heartland of the classical age and making a claim to a symbolic past, Han advisors found the geographical uniqueness of the Guanzhong basin strategically advantageous and a key reason for the Qin's rapid ascendancy.<sup>2</sup> First, the protection afforded by four enclosing mountain passes made locating the imperial seat there a sensible choice (Fig. 1.1 a; four black squares). Hangu Pass, cutting through the valleys where the Wei and Yellow Rivers meet, provided a physical barrier and chokepoint controlling entry from the eastern and northern plains (Fig. 1.1 a). Second, not only does the Wei River flow into the Yellow River, providing transport access to plains in the east, its tributaries – the Jing, Qian, and Ba Rivers – were important nodes facilitating communication to the northwest, the southwest, and the Qinling Mountains, a source of precious materials such as jade and metal ores.

Even though the cold and dry climate of the loess highlands is less favorable than the temperate climate in Guandong, the Qin managed to improve agricultural production by expanding irrigation facilities. The mean annual temperature and precipitation are 12.4°C and 592 mm, compared to 12.9–13.5°C and 731 mm in the lower Yellow River basin (Li 2001). Despite the low rainfall, the tributaries of the Wei River provided the basin with a reliable water supply. By further damming and canalizing Jing River, a tributary on the north bank of the Wei, the Qin brought wide tracts of land under cultivation (Lander 2021, 141). Equally important was the composition of local soils: loess consists of windblown silt, and its fine-grained texture and porosity mean that the soil can be easily worked.

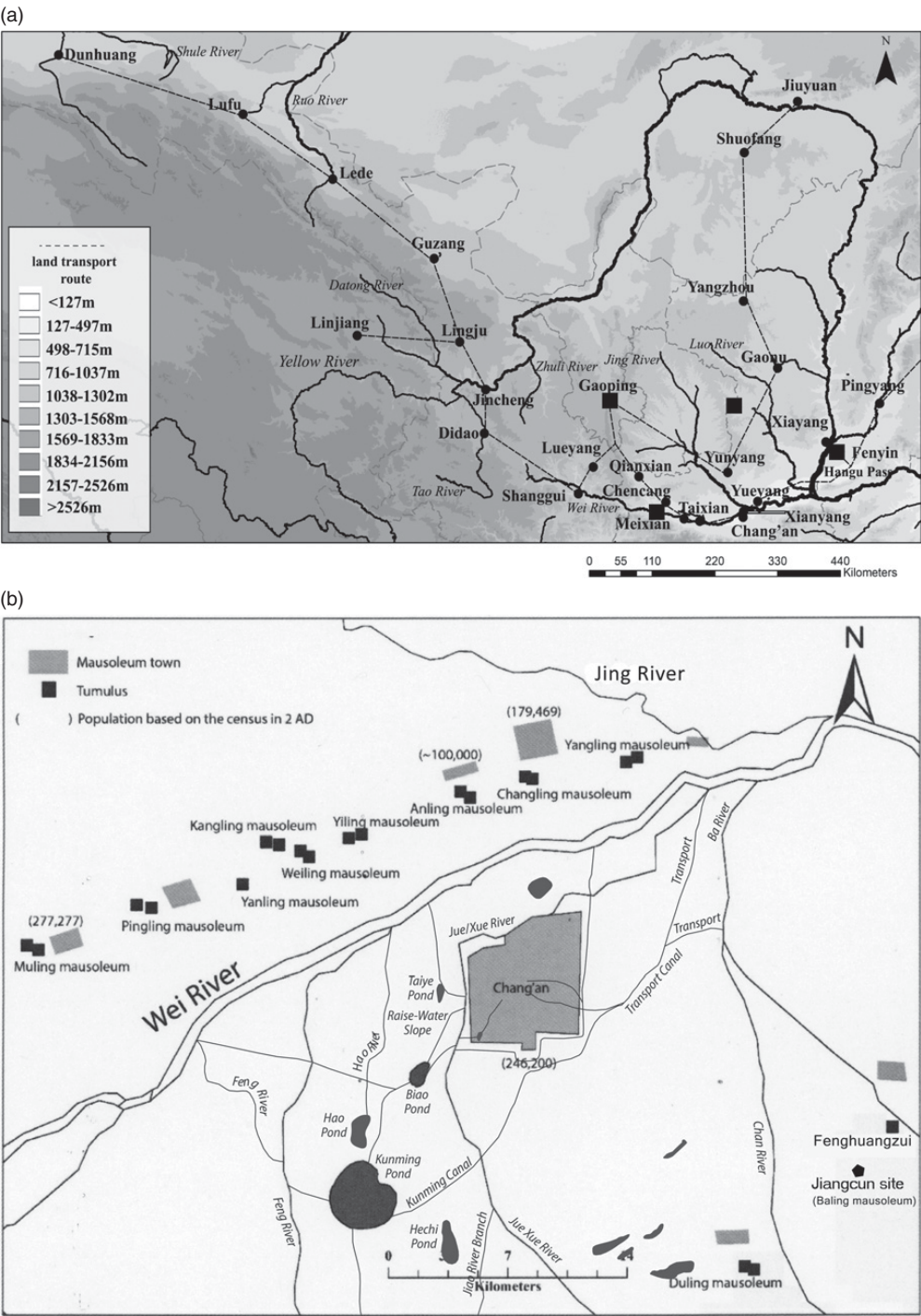


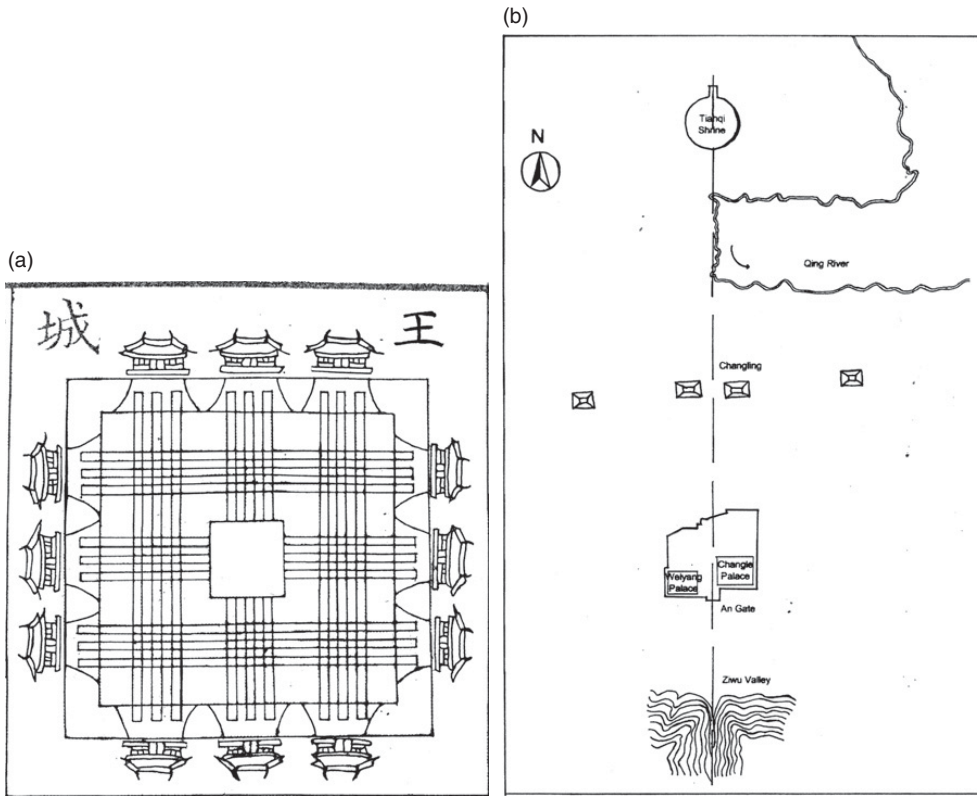
Figure 1.1 Map of Guanzhong basin (a) and the major passes. Chang'an metropolitan region with population estimates from 2 CE (b).

After the Qin surrender in 207 BCE, palaces in the capital of Xianyang, located on the north bank of the Wei, were burned to the ground by the rebel king Xiang Yu, who, like Liu Bang, was from the Chu region. Instead of building over the destroyed ruins of the Qin capital of Xianyang, Liu Bang moved the Han capital to the opposite bank in 202 BCE and began building the city of Chang'an on the site of an old Qin palace felicitously called Xingle (Promoting Happiness). The former capital of Xianyang, now purposefully renamed Xincheng (New City) by Liu Bang, and much of the area on the river's north bank were in turn converted into a larger metropolitan zone consisting of imperial mausoleums and suburbs (Wang, X. 2007). Eleven monumental tombs have been documented archaeologically along a 50 km stretch of the Wei River (Fig. 1.1 b) (Loewe 2010, 34). By the middle to western Han, roughly 2 million people, some who were resettled forcibly and some who moved voluntarily from the eastern plains, lived in the suburb towns surrounding cult complexes for deceased royals (Fig. 1.1 b) (Nylan 2015).<sup>3</sup> Population transfers were critical to providing the capital region with a sufficient labor pool. This tripartite structure (the capital city, suburbs, and mausoleum towns) was placed under the *jingzhaoyin* (Governor of the Capital) as a special administrative zone outside the standard jurisdictional order of the commandery-county-ward system. By the late Western Han, census accounts from 2 CE indicated that the populations of Changling and Maoling – towns associated with Liu Bang's and Emperor Wu's mausoleums – had swelled to 179,469 and 277,777 individuals (Loewe 2015, 213).

The relocating of court activity from the northern to the southern bank of the river marked an important departure from the Qin. Another more notable and crucial development is the construction of a walled city and a layout with palaces concentrated within Chang'an. Through extensive coring, archaeologists have mapped a wall, together with a moat surrounding its exterior, enclosing a square-shaped city with a perimeter of 25.7 km and covering an area of 35 km<sup>2</sup> (Dong et al. 2006). By comparison, the Qin built 270 "traveling" palaces across the basin, although their exact locations have not been fully verified archaeologically (Wang, X. 2007).<sup>4</sup> Ongoing work has yet to find wall enclosures around Xianyang, and it is possible that the city was never walled. These differences have contributed to a view of the exemplary quality of Chang'an. Recalling Michael Smith's solicitation to recognize planning in premodern cities, the uniqueness of Chang'an has prompted scholarly appraisals of the Han capital as a planned city and as a spatial model that emplaced the center of the empire, one that potentially ramified the idea of All-under-Heaven in material ways.

Close attention has especially been paid to finding the symbolic prototype to explain Chang'an's square urban form. Lewis (2005) and Steinhardt (2019) have both compared Chang'an's layout to the model of a classical city prescribed in the *Kaogongji* (Artificer's Manual), a Late Warring States text (Fig. 1.2 a).





**Figure 1.2** The capital of Chang'an (a) envisioned as the empire's central axis and according to the classical urban model prescribed in the *Kaogongji*. The distance from Ziwu to Tianqi shrine (b) is approximately 100 km. (After Steinhardt 2019, 21 and 37).

The classical model specifies that a “true” city be laid out in the form of a perfect square with three gates on each side and three main streets running north–south and east–west. The king's palace is to be located in the front and the market in the back.<sup>5</sup>

Archaeological investigations so far have revealed the presence of three gates along each wall, and a cardinal orientation consistent with a north–south, east–west orientation. Rather than exemplifying the classical model, however, the length of Chang'an city walls, which vary between 4.8 and 7.5 km for each segment, exceeds the manual's specified dimension of nine *li*<sup>6</sup> (3.726 km) (Fig. 1.3). Furthermore, archaeological probes reveal only one north–south road and one east–west road running as transects across the city versus the manual's three roads, thus failing to produce the expected division of city interiors into nine equal square units: the north–south road also fails to run the full extent of the city.

Where the absence of formal correspondence with the *Artificer's Manual* might lead one to question the planned nature of Chang'an, these deviations have rather been taken up as intentional ones, the outcome of creative efforts to

make a universal center out of the Guanzhong basin. For example, one hypothesis attributes the city's single bilateral thoroughfare to the creation of a meridian for the entire imperial dominion. According to this theory, the main north–south roadway running down the center of the city was designed as a sight line, placing the capital, Liu Bang's tomb, a temple of imperial worship 45 km to the north, and Ziwu pass to the south as points in a single cardinal axis (Fig 1.2 b) (Tang 2015). Another theory extends this axial line even further to a stretch reaching 500 km from south to north (cf. Liu 2011, 60–62).

The odd geometry of Chang'an, described by Cary Liu (2017) as a “deformed square,” has also been explored as an intentional one inspired by ideas of a cosmological center for the empire (Wheatley 1971). While some archaeologists suspect the irregularity of the wall in the northwest was to accommodate a river cutting across that corner (Fig. 1.3), David Pankenier (2011) has explored an astronomical explanation for this appearance, basing his argument on a revision of Stephen Hotaling's (1978) hypothesized correspondence between the shape of the wall with the constellations of the Northern Dipper (Ursa Major) and its ladle form.<sup>7</sup> Pankenier posits that the contours of the city's northwest wall render a flipped, rather than mirror (per Hotaling's hypothesis), image of the Dipper. Rather than treat Chang'an as a deviation from the classical model, these alternatives promote a view of Chang'an as the exception, a city invented without precedent or parallel and one that forsook regional connections for a cosmograph on earth (Lewis 2005, 169–170).

As stimulating as these two hypotheses may be, especially for affirming the establishment of a central axis for All-under-Heaven or the development of an ancient geographic coordinate system, there is currently limited direct support for these two positions (cf. Liu 2011; Tang 2015).<sup>8</sup> Another problem is that these perspectives privilege roads and walls for their representational meaning over their spatial function, in particular in their capacity as infrastructures coordinating urban life for a rapidly growing population. Instead of a focus on what the capital signifies in the visionary sense, we examine the city's spatial geometry in relation to what these features *do* in the logistical sense. This is not to trivialize Chang'an's exemplary status (after all it was twice the size of Rome!) but to examine how the “transformative” is rather constituted in the mundane, by way of the developmental changes to the city's infrastructure that propagated new conditions of urban life in the capital. Because transformation implies change, we now turn to a diachronic picture of the capital's building history as a supplement to the synchronic one.

## FROM EXEMPLARY TO THE TRANSFORMATIVE

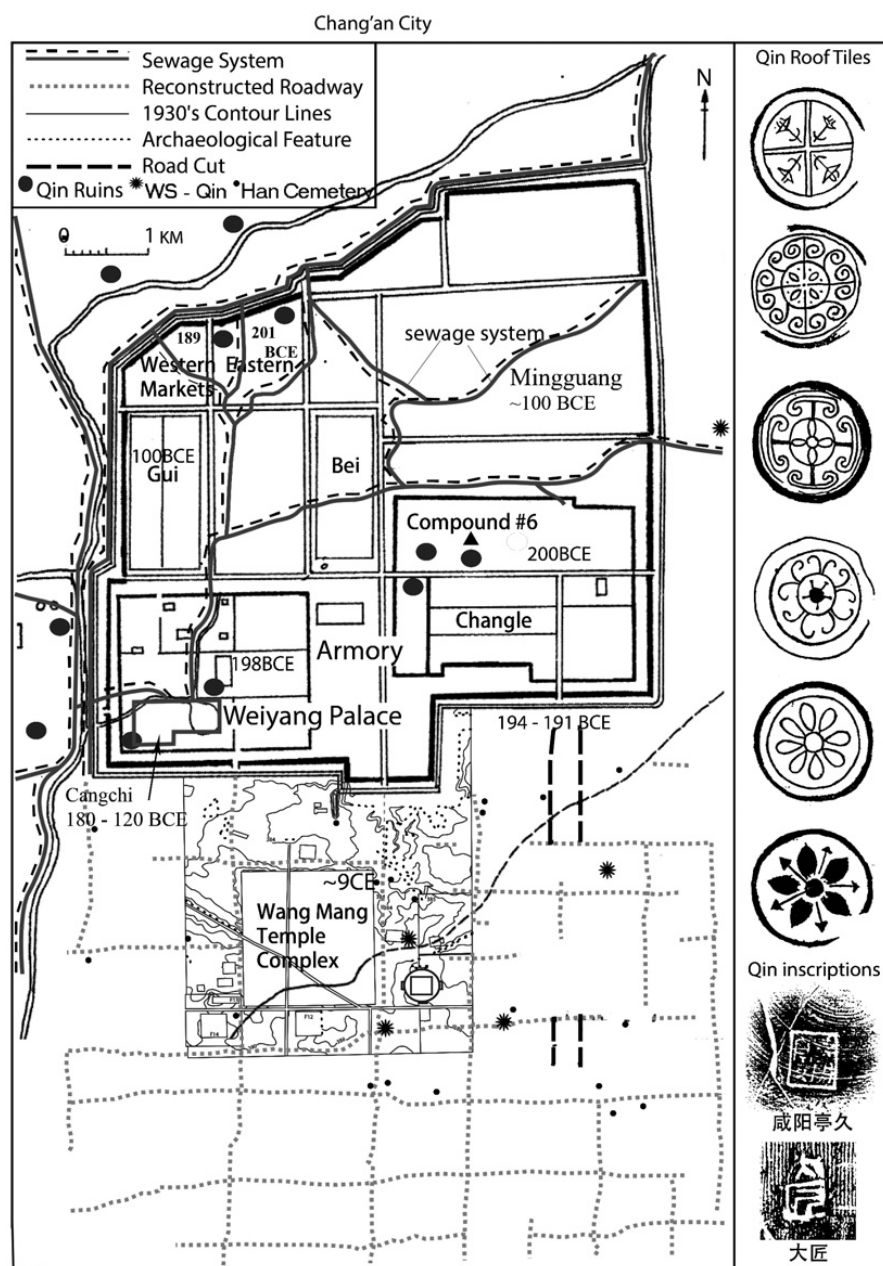
When the Han court began building Chang'an, the southern bank of the Wei River was a stretch of unincorporated and partially developed lands comprised of finished and unfinished Qin palaces, parklands, workshops, and rural

farmsteads. Rather than an encounter with the ruins of a vanquished regime, the Han inherited a relict but nevertheless actively worked landscape. The enterprise facing the Han entailed something closer to an urban development project. Construction at the capital, according to historiographic accounts, began with only two palaces – Changle (Lasting Happiness) and Weiyang (Everlasting Palace) (IA CASS 1996b; Huang 2008; Liu 2003). Weiyang, the imperial residence of Liu Bang, took advantage of Dragon Head Hill, the highest point in the local topography (Fig. 1.3). A pair of north–south and east–west roads met at a central palatial complex where a tall structure, identified as Anterior or Audience Hall, was raised even further on a terraced mound, which, according to a sixth-century geographical text, stood 82 m high.<sup>9</sup> Archaeological recovery of Qin bricks and roof tiles stratified beneath the Han building indicates that an earlier Qin structure, possibly associated with Zhangtai Palace, formerly occupied this vantage point (IA CASS 1996b, 223–227; Xu, L. 2013, 56). Within the palatial grounds of Weiyang, Qin architectural debris has also been recovered from the central government offices and the foundations of the southwest tower (Shen 2008). Contrary to Lewis’ account of a capital “rebuilt largely from scratch” (2005, 175), it is more likely that the Han repurposed existing Qin foundations (Fig. 1.3). Across the main thoroughfare east of Weiyang Palace, excavations of Compound No.6 in Changle Palace show that the halls were also built on top of Qin buildings (IA CASS Han Chang’an 2012). Based on the similarity of architectural tiles to those excavated from the site of Qin Epang Palace, the central precinct at Changle was probably constructed on the platform foundations of Qin Xingde Palace.

This bears important implications for understanding the diachronic growth of the imperial capital. Chang’an was initially a city being built from the inside out. A collection of Qin buildings was first redeveloped under Liu Bang. The building of the city’s perimeter wall followed under Emperor Hui’s direction between 194 and 190 BCE (Fig. 1.3). The urban footprint consisted mainly of repurposed Qin palatial grounds, in particular those buildings that lent an enhanced vertical profile to Han royal structures, and the market quarters to the far northern end. North of Weiyang Palace, roughly one third of the city would not be completed until the middle Western Han when Emperor Wu (r. 141–87 BCE) ordered the construction of Guigong, Beigong, and Mingguang Palaces, effectively doubling the palace footprint of Chang’an to cover two thirds of the city (Tang 2015, 65).<sup>10</sup>

The Western and Eastern Markets, another notable feature of Chang’an most famously memorialized in Han rhapsodies, may have grown out of Qin industrial sprawl emanating from across the Wei River (Fig. 1.3). Contrary to the conventional view, which sees the market quarters as being contemporaneous with the city walls (Barbieri-Low 2007, 121), the discovery of stratified Qin architectural debris and administrative seals indicates that the area was likely already an active workshop area (Fig. 1.3).<sup>11</sup> Archaeologists have





**Figure 1.3** Diachronic view of Chang'an, its urban infrastructure, and Qin occupation localities. Road segments reconstructed from the survey maps is shown as dotted lines overlaying 1930s contour lines south of city wall (after Baker 2011, 21). Locations for water supply lines (after Zhang, J. 2016, fig. 56; and Xi'an 2009, 212). Qin roof tiles and clay seals excavated from lower levels in Chang'an (after Shen 2008, 354–357).

identified Qin pottery workshops located in the northwest corner of Chang'an, straddling both sides of the riverbanks (IA CASS Han Chang'an 2001; Xi'an 2009). Debris in the Western Market quarters have also yielded roof tiles

identical to those found in Xianyang, suggesting that Qin-era commercial settlements potentially remained active after regime change (Dong et al. 2006; IA CASS Han Chang'an and Xi'an 2006; Yu 2006). Though the function of Qin-era buildings remains unclear, the proximity of craft activity areas to the riverbank likely facilitated boat transport and docking, an advantage that the Han duly appropriated. The open nature of this area may partly account for why the walls – stepwise in form – were so irregular along the northwest corner of Chang'an. Bringing this Qin commercial sprawl forward in time, it is perhaps unsurprising that a reference in the *Shiji* mentions residents calling the new capital “Chang'an Xianyang,” using the two place names simultaneously (Xi'an 2009, 21).

The wide stretch of alluvium on the river's southern bank was additionally occupied by an intensively farmed rural landscape. Archaeological investigations show a dramatic filling in of formerly sparsely populated terrain after the Qin period. With a greater number of subsidiary tributaries, this area had better access to surface water while the sloping terrain provided better drainage, alleviating the salinization problem on the north bank (Lander 2021, 141). One of the hallmarks of Qin reforms was the establishment of regularized and legible field units to manage the expansion of agrarian settlements across its immediate hinterlands. GIS analysis of Sino-Japanese survey maps from the 1930s, which predate land-leveling projects tied to the Great Leap Forward campaign, has recovered portions of this relict agrarian system in the basin (Leeming 1980). Rectangular strips of land, which varied between 320 and 350 m in length, not only covered much of the areal expanse south of Chang'an's walls but their correspondence with standardized field dimensions, specified in Qin statute, of 332 m lend further support to the presence of a rural landscape abutting the capital (Lander 2021, 138–139).

While historiographic accounts are largely silent about the impact of this agrarian unit system on Chang'an's design, the significance of an earlier rural spatial framework on Han urbanization should not be overlooked. For one, in addition to the layout of standardized fields, Qin policy stipulated the building of field boundary markers, and field paths and roads that crisscrossed at regular distances.<sup>12</sup> The field system thus helped constitute the roadway infrastructure in the countryside. Using finer-resolution maps from the same Sino-Japanese map series, Timothy Baker (2009, 2011) was able to trace the outlines of an inter-field road network linking the rural landscape and the new city, one that stretched 5 to 10 km beyond the city's perimeter walls (Fig. 1.3).<sup>13</sup> Baker's reconstructed map reveals a grid system comprised of north–south and east–west roadways, many of which spatially coincide with the perimeter wall of Han Chang'an, its main gates, and city boulevards (2011, 17–20).<sup>14</sup> In fact, this grid may offer a more compelling explanation for the location of the city's central causeway: The universal meridian proposed by theorists of cosmographical centering lies to the west of the actual thoroughfare (Fig. 1.2, Tang

2015, 73). But if the city walls were built with the integration of this existing road network in mind, then one of the more provocative observations to consider here is that the orthogonal structure of the capital, including the location of Chang'an's city walls and gates, may be attributable to existing roadways rather than to a higher-order cosmological imperative. This may not be so far-fetched considering a large urban population of non-producers must have been dependent on the countryside for its sustenance.

Indeed, what may have set the capital apart from "the old league of cities" is the transformation of the urban-rural continuum into a metropolitan area, an agglomerative settlement distinguished by enhanced mobility and shared infrastructures. Functionally speaking and somewhat counterintuitively, Chang'an's walls were not expressly designed to demarcate a boundary separating the space of the urban from the rural. Its alignment with roadways instead facilitates more seamless movements and exchanges across a rural and urban continuum. As urban theorists can well attest, a major challenge to urbanization past and present is logistics and in particular the foresight of urban planners in building cities that promote the movement of goods and people into and out of cities. Although this road grid gives us a partial glimpse into how people might have moved, the lively pace of commercial life in Chang'an's market quarter is best captured in Han poetry:

They greatly expanded the Nine Markets,  
Joined by encircling walls, girdled by gates.  
From the flag pavilions, five stories high,  
Officials looked down to inspect the countless shop rows  
The Zhou institution was the *daxu*;  
Now it was the Commandant.  
Precious wares arriving from all quarters,  
Gathered like birds, amassed like fish scales.  
Sellers earned double profit,  
But buyers were never lacking.

(Excerpt from Zhang Heng (78–139 CE), "Western Metropolis Rhapsody", Knechtges 1982, 203)

One also gains a sense of the orderliness of this space in spite of the throngs waiting to get in:

Their wares separate by type, their shop rows distinctly divided.  
There was no room for people to turn their heads,  
Or for chariots to wheel about,  
People hemmed into the city, spilled into the suburbs,  
Everywhere streaming into the hundreds of shops.

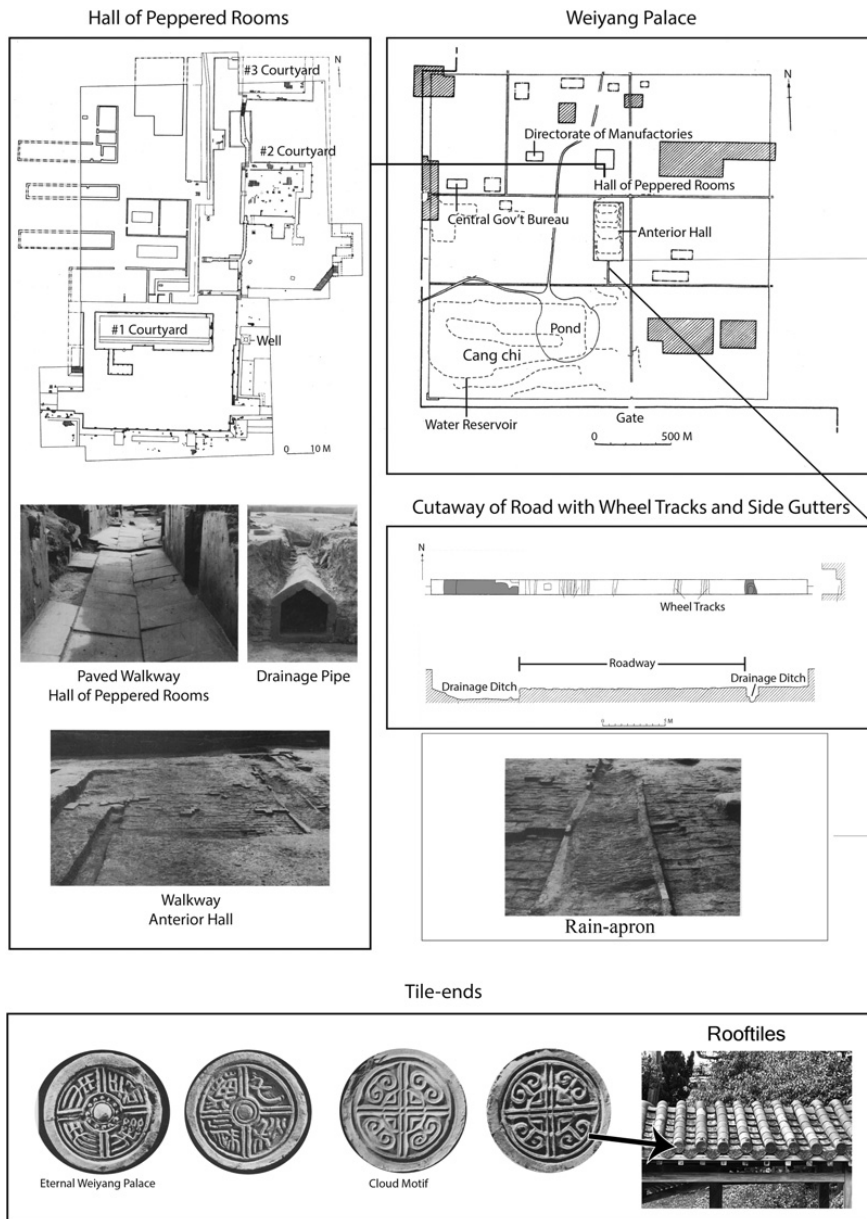
(Excerpt from Ban Gu (32–92 CE) "Western Capital Rhapsody"  
Knechtges 1982, 105)

Beyond being a center of economic activity, the expansion of a canal system spanning the urban-rural continuum reveals the recalibration of an entire watershed to manage the urban water supply for a growing population.

Archaeological surveys have uncovered a network of man made channels and ponds that brought and stored water from the Jue and Hao Rivers, tributaries flowing from the south, into the city (Fig. 1.1b). Since some of these channels were buried underground and installed before wall building, it appears that access to potable water was central to city planning from the outset (Fig. 1.3). Intake channels in the southwest corner of the city fed the main reservoir, Cangchi in Weiyang Palace (Fig. 1.3). From there, diversion channels distributed the water supply northward, winding their way through other palatial compounds and the Eastern Market until finally exiting through outflow channels that drained into moats encircling the perimeter of the city wall (Zhang, J. 2016, 131–138). Merchants and craft workers living in these quarters thus also availed themselves of this important amenity.

As hydraulic historians note, this overall infrastructure should be treated as an experiment in ancient water conservancy rather than simply one of water supply (Zhou et al. 2021). That population growth made water an extended problem for urban sustainability is reflected in the building of a manmade reservoir, named Kunming Pond (Fig. 1.1b), 12 km to the southwest of the capital during the middle and late Western Han. The Kunming Pond was also connected to Cao Canal, a transport channel begun in 129 BCE to extend the capital's transportation system (Liu 2021) (see Chapter 3). Measuring 4.25 km by 5.69 km in size with a water storage capacity of 3549 m<sup>3</sup>, the engineering of Kunming reservoir was a monumental undertaking (Nylan 2015, 100). Its location directly south of two smaller reservoirs from the pre-Qin era again showcases Han planner's repurposing of extant infrastructures (Fig. 1.1b Hao Pond; Zhang, J. 2016, 193; Epang 2017). Excavations at Cang Pond, the reservoir associated with Weiyang palatial precinct, show the widening and construction of an embankment around this reservoir (Fig. 1.4) (Zhang, J. 2016, 125). Working in tandem, these reservoirs not only stored water but were used to manage water pressure throughout the entire rural–urban expanse. If one recalls the higher elevation occupied by Weiyang Palace, controlling both water pressure and outflow rates from these ponds essentially helped “pump” water into the channels feeding the rest of the city. They also worked like valves, slowing the flow of water to prevent flooding in the city, which was especially critical during seasonal rainfall (Nylan 2015, 103).

What does the experience of being in Chang'an feel like? As conveyed in the passages on markets, the city could be a crowded and disorderly place, where containment in the form of walls, stalls, and gates was necessary to corral masses of people “streaming in” or “hemmed in” like “fish scales.” These literary references show how architectural features, unseen and in the background, were not inert matter but shaped people's perception and movement. Apart from these channels and ponds is also a buried network of underground sewage pipes and roadside ditches to divert wastewater into the moats (Zhang, J. 2016, 140–159). Clay pentagonal pipes, in particular, may have been used specifically



**Figure 1.4** Layout of Weiyang Palace and the imperial architectural inventory. Plan of Hall of Peppered Rooms, roof tiles, and drainage features associated with Anterior Hall (after IA CASS 1996b, 4, 189, 208, 231, plates 239 and 244). Road cut showing exposed wheel tracks and side gutters (after Zhang, J. 2016, 163). Tiled rooftop is from the garden grounds of the National Palace Museum in Taipei (photo by Alice Yao).

for moving sewage and waste out of the city into the moats (Fig. 1.4) (Nylan 2015, 102). Even though drainage pipes were mainly buried underground, one cannot underestimate how this concealed infrastructure transformed urban life.



When people entered Chang'an, this experience was felt afoot, in encounters with walking on dry, leveled paths and in sight lines dominated by towering palatial buildings. Drawn out in these passages is a sensuous milieu prompting a readjustment of bodies and individual comportment.

Within the palatial grounds, the areas that have been most extensively studied, one gets a clearer sense of how an “architectural inventory” can calibrate the haptic experience of Chang'an. We borrow this term from the archaeologist Michael Smith to draw emphasis to identifiable “features and public buildings” that appear in an iterative manner throughout cities (2007, 25). Built on a lower platform than the audience hall, the residences of the empress and consorts, called Jiaofang (Hall of Peppered Rooms), have been fully reconstructed thanks to excellent preservation conditions (Fig. 1.4) (Liu 2007a). Six courtyards, again arranged along a north–south axis, are linked by a series of passageways that are paved with ceramic floor tiles whose surfaces are decorated with patterns inspired by textile designs. Excavations of the Anterior Hall and buildings associated with Courtyard No. 1 at the empress' residence (Fig. 1.4) show that a flashing made from cobblestones was paved along the base of buildings (IA CASS 1996b). Referred to as “rain aprons,” these features were found across palatial compounds and the covered verandas connecting different courtyards (IA CASS Chang'an 2012). This was an architectural design that helped collect and divert run-off water from roofs into gutters leading to pentagonal pipes underground (Fig. 1.4). The paved floors and covered walkways differentiated the basic act of walking on level and smooth surfaces, setting it apart from walking on dirt roads.<sup>15</sup> It is possible that, beyond mere aesthetics, footpaths also shaped a modality of walking. Footpaths, in addition, also separated the spaces and directionality of movement, controlling traffic as well as coordinating bodies in motion. Prior to the nineteenth century and Haussmann's urban project, Parisians navigating city streets were characterized by their “light, jerking, fidgeting” movements (Jordan 1995). The Parisian observation is particularly illuminating in showing the marvel of a bustling city and a kind of frenetic energy that is a feature of urban life. The bodies of urban residents recall the allusions to the clumsiness of birds and fish, creatures who not only lack limbs but travel in a swarm. Incapable of walking in an orderly manner, these crowds are themselves a potential source of disturbance in need of socialization.

It is also worth considering how people's everyday encounters with this “architectural inventory” may have made inhabitants more aware of differences in bodily dispositions. Ordinary things like roof tiles and drainage pipes, which are often taken for granted as modern amenities, were caught up in a unique material world that shaped the *feel* of a place like Chang'an. Potable water and the removal of stagnant and fetid water and human and animal waste certainly improved the quality of living. It probably reduced the stench and unseemly smells of close-quarter urban life. Nylan has suggested “clean water,

leisure activities, verdure, and parks,” albeit a costly service to the public and apparently unique to Chang’an, made it possible to elevate metropolitan distinctions (2015, 108).

Of all the “mundane, chunky things” that pervade Chang’an’s architectural inventory, clay roof tiles represent one of the most underrated but visually effusive elements. It is important to expand on this inventory of roof tiles as more than a collection of things, however, for to take an inventory also implies a preoccupation with recognizable quality and standards. And the evaluation of standards presupposes groups of individuals participating and interacting through a discourse about the qualities of things in everyday encounters. Just how important roofing materials were to the making of form and space is laid out in the section on city design in the *Artificer’s Manual*. In particular, a passage from “Master-builders and carpenters” makes a key distinction between tiled and thatched roofs, instructing builders on how to approach the angle of a tiled roof:

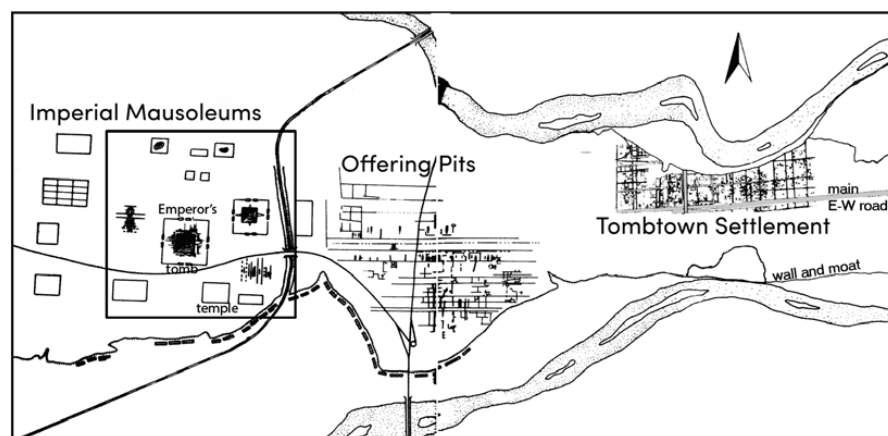
The height of the roof of thatched houses is a third of their depth. The height of the tiled roof is a quarter of their depth. Thatch is steeper than tiled roofs  
(translation Guan and Herrmann 2019, 96)

The last sentence is an explicit reminder of what not to do, especially for those builders more accustomed to working with thatch, since the grading of a roof can negatively impact what happens in a downpour. We emphasize this passage because pantiles and eaves tiles probably represent the most ubiquitous category of finds in Chang’an. Their importance to the crafting of durable social life is also reflected in the many iconographic images of families sitting under tiled buildings from the Han period – a commentary on domestic reproduction which we address later in Part II (see Figs 3.3c and 4.6). This passage underscores that good governance is implicated in something as prosaic as the pitch of rooftops. Also alluded to is that people have ways of judging what constitutes good governance through the built quality of dwellings.<sup>16</sup>

It is important to consider tiled roofs not only in terms of their function as a shelter against physical elements but also as an interface between earth and heaven. The preponderance of one decorative design on tile-ends – a four-sided cloud motif – across much of Chang’an indicates a singularity in the external visual appearance of buildings (IA CASS 2006). Representing *yunqi*, or “clouds and air circulation,” the motif evokes immortality (Lu 2017, 98) (Fig. 1.4). Inscriptions impressed on tile-ends of government and court buildings visually and literally signaled to the public that these buildings and the Han regime were built to last. In addition to tile-ends showcasing the cloud motif arranged in a quatrefoil pattern, examples recovered from the palace complexes of Weiyang, Changle, and Gui were molded with three different phrases: “Changsheng wuji” (Long life without end) (Fig. 1.4), “Qianqiu wansui” (A thousand seasons and years), and “Yutian wuji” (Without end). All of these

expressions are iterations referring to a concept of immortality, which may strike us as being propagandistic. Be that as it may, there is a reason why this messaging is mediated through roofing material. Aligning these ornamental tiles on the rooftop “was a good way to connect the palace with the heavenly sky and to symbolize the building’s permanence” (Lu 2017, 98). By making frequent use of and allusions to immortality and the extra-worldly, roof tiles mark a material threshold for the center of the empire. What is signified is not a statement of eternity as true and factitious but rather a felicitous force that is present and can be brought into being.

This urban repertoire extended beyond the confines of Chang’an and was key to a spatial reworking of the wider capital region. Residents in the newly established towns to the north of Chang’an, many of whom were resettled from other regions in the early Western Han, perceived these changes in their dwellings. Among the new towns associated with imperial mausoleums, the site of Yangling has been well studied through archaeological survey.<sup>17</sup> Measuring 4.5 km east to west and 1 km north to south, Yangling is nestled between the Wei River and its tributary Jing River (Fig. 1.5). By reshuffling residents from different regions, the policy intended to erode old regional ties and craft new allegiances. Recovered ceramic tile-ends carry the mausoleum’s name “Jingzhi Yangling” (the Jing River flows by Yangling) and remind its residents of this newly minted place (Huang Y. 2015, 158). If the census reconstructions are reliable, the initiative was quite successful: Yangling ballooned to a sizable population of 179,469 residents by 2 CE (Loewe 2015, 212). Two hundred meters to the west lay a new cemetery ground for the émigrés to bury and memorialize their dead. Extensive coring work at the site indicates at least over 200 compounds were protected by a 970-meter-long wall and a moat along the southern part of the city, a feature likely protecting the lower town from flood



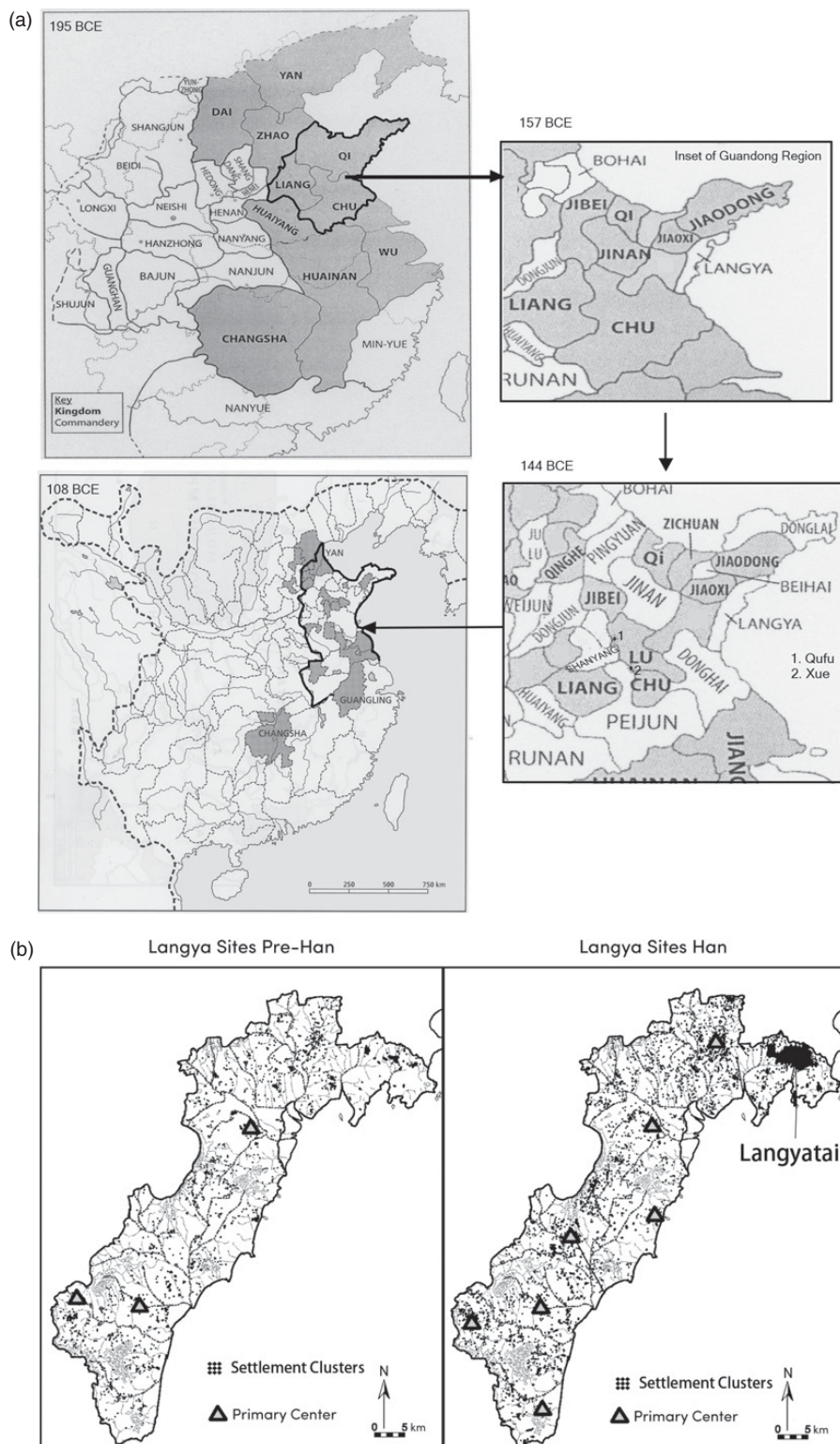
**Figure 1.5** Layout of Yangling mausoleum town (after Zhongguo Museum and Shaanxi 2015, 10).

waters of the Wei River (Han Yangling Museum 2016, 93). These densely packed neighborhoods were divided by class along the main east–west boulevard: in the north, residents (including officials) lived in larger compounds. There, clay sewer pipes and paving tiles have been recovered from the debris.

## GUANDONG BASIN: THE PRODUCTION OF SPATIAL NETWORKS

This reworking of the urban–rural spatial framework was by no means restricted to the capital but was also evident in the Guandong region (modern-day Henan, Shandong, and Jiangsu) – the most populous part of the empire.<sup>18</sup> Enriched by alluvial soils deposited over broad plains, the middle and lower reaches of the Yellow River Valley were the most agriculturally and economically productive zone in the North China Plain. Geographically speaking, this region was not only the breadbasket but also the cradle of industrial and intellectual activity. It is in the capitals of these former regional states that the groundwork for educational transformation (*jiaohua*) was laid out by philosophers such as Confucius and Mencius, in teachings that the Qin banished. Although the Qin regime had already initiated the process of consolidating the eastern plains, early Western Han kings took a more cautious approach, for the brunt of Qin aggression remained fresh across this region, as did regional ties that continued to linger. The historiography of the Han imperial integration of the eastern plains, as noted in the introduction, is thus construed as a process beginning with a “return” to a political order of *de facto* “independent” kingdoms in the early Western Han and a “rupture” of that order after the Rebellion of Seven Kingdoms in 154 BCE (Fig. 1.6 a after 195 BCE), whose failure gave the Han emperor a pretext to usurp power and claim these domains under centralized authority. The imperial geography is thus often mapped accordingly to show this chronological shift from a provisional arrangement to full integration under the *junxian* system by 108 BCE (Fig. 1.6 a).

Recent settlement archaeology in eastern Shandong shows that this pre- and post-revolt chronological division may simplify what was, in reality, a tenuous juxtaposition of both multicentered and unified administrative system (*yitong*) instead of the replacement of the former by the latter. Somewhat counterintuitively, the remaking of urban–rural spaces was most prominent in regions far from the capitals of “old” feudatories. At the eastern limits of the Qi Kingdom, which Liu Bang granted to his eldest son in 201 BCE, is a sparsely populated littoral on the Yellow Sea where the Qin had previously resettled and installed 30,000 households in a new commandery called Langya (Fig 1.6 a; see 157 and 144 BCE map) (Fang et al. 2015). Though Han sources indicate that the coast shifted back and forth between feudatory and commandery status until 143 BCE, when it was officially integrated and a state salt agency established (Loewe 1986, 146), settlement archaeology shows that the institutional footprint was already well entrenched. Architectural debris, including large platform structures



**Figure 1.6** Guandong's changing jurisdictional map at 195 BCE, 157 BCE, 144 BCE, and 108 BCE (a), and Langyatai regional survey (b). Maps (after Miller 2020, 41 and 46; Li 2013, 263). Footprint of junxian spatial structure in Langya Commandery before and after incorporation (after Feinman et al. 2010, 4853).



dating to the Qin, are spread out across an area of 24 km<sup>2</sup> at the site of Langyatai (Fig. 1.6 b), placing it at a scale comparable with the city of Linzi, which was the administrative and commercial center of the Qi Kingdom (Feinman et al. 2010, 4854). The proliferation of domestic pottery and cultural layers south of the massive settlement of Langyatai further attests to a densely occupied rural stretch of newly established settlements; several small settlements yielding an architectural inventory including the same ornamental eaves tiles seen at Chang'an (Sino-American 2012, 220, 282).

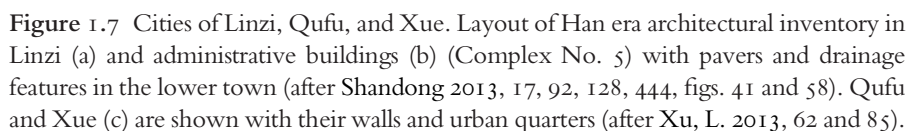
Across this coastal stretch, the ordered spacing of rural settlements shows the state interfacing with the political and economic activities of transplanted communities. South of Langyatai, archaeologists have discovered a hierarchically arranged settlement system: large towns ("Primary Center") averaging 2.25 km<sup>2</sup> in area are evenly distributed at roughly 10 km apart and within daily travel of smaller settlement clusters of 31 hectares (Fig. 1.6 b) (Underhill et al. 2008).<sup>19</sup> The composite picture (a major urban settlement at Langyatai, large- to medium-sized towns, and small hamlets) provides evidence for the spatial units corresponding to the commandery-county-ward framework of the junxian system. More interestingly, the linking of small clusters to a "lattice of evenly spaced centers" hints at the emergence of microscale networks crucial to the bureaucratic management of a growing salt production industry (Feinman et al. 2010). Since some of these large centers are located near natural routes and passes to the west, Langya may reflect the creation of new commercial nodes and links connecting ecological – here coastal and interior – zones, a transformation that is more complicated than a redefinition of administrative units from the early (198 BCE) to the middle Western Han (108 BCE) in Figure 1.6 b (Fang et al. 2015, 9228).

That the object of Han spatial reworking emphasized networks rather than the cities of revived feudatories hints at a mixed strategy. What was being pursued in the capital of the Qi Kingdom was not exactly a restoration or return to the league of cities of the past either. The Qi Kingdom, which was at first a unitary territory bestowed upon Liu Bang's eldest son Liu Fei in 201 BCE, was subsequently divided up like a chessboard as Liu Fei's heirs were granted individual princedoms out of this expanse (Loewe 2004b, 352). By 144 BCE, the kingdom retained but a small fraction of its original territory (Fig. 1.6 a). While the creation of more kingships (and reduced dominions) may have lessened the feudal king's power, as the emperor's advisor Jia Yi strategized, the plan also harbored the noble goal of restoring "mutual esteem and affection." Jia Yi reasoned that the emperor's generosity, as shown by these investitures, would foster a sense of filiation to the emperor (Miller 2020, 36). As we pointed out in the introduction, unification was more complicated than a project of centralization, as the notion of one family (yijia) evoked an affective geography.

How a sense of filiation is articulated spatially can perhaps be examined in the requisition of the old Qi capital, Linzi, and the residence complex built for Liu Fei. Covering an area of 22 km<sup>2</sup>, the commercial center of Linzi is exceptionally large, eclipsed only by Chang'an (Fig. 1.7 a). There were approximately 70,000 households and 210,000 adult males living in Linzi in the third century BCE (Wu 1999). The city itself developed out of a Warring States "double city" template that was typified by the presence of two rectangular walled towns of different sizes (Fig. 1.7 a). This pre-imperial urban form evolved from the spatial division of an organic or "concentric" city into two separate towns: one where administrative buildings were located and another for residences, the military, and craft work (Wu 1999, 695). Ongoing excavations show that the smaller "lower" town, which hosted elite quarters in the Warring States period, was recuperated for use as a palatial quarter during the early Western Han. However, even though the rebuilding of a Warring States administrative precinct seems like a throwback to pre-imperial territorial politics, what was built for Liu Fei's court was less of a restoration than a recreation of trends from Chang'an's palace precincts. The walls of Linzi's lower town were fortified, elevated, and widened: three phases of rammed wall additions were undertaken from the early to late Western Han period, eventually fully enveloping and separating the lower town from the "working" town.<sup>20</sup> This wall reached an imposing thickness of 16 m (Shandong 2013, 86–87) (Fig. 1.7 a). Roads laid out on a north–south, east–west axis led to a raised compound (Huan Gong Tai) at the center of the lower town. Constructed on the foundations of a platform mound from the Warring States period were new structures raised on a 14 m high earthen platform (Fig. 1.7 b).

Close reverberations with Chang'an are visible in the introduction of rain-proofing architectural innovations and the replacement of Qi ceramic roof tiles with those meeting Western Han standards. Excavations of a group of structures (Complex No. 5) recall the footprint of buildings like Weiyang Palace – a series of courtyard compounds with a central, audience hall-like building. The addition of gutters, rain aprons, drainage and sewage pipes to the buildings in Complex No. 5 is reminiscent of palatial designs featured in the capital (Fig. 1.7 b). Courtiers would have tread upon tiles with floral and geometric mosaics and noted similarly ornamented rooftops, perhaps drawing parallels with Chang'an. Decorative eaves tiles from the Warring States Qi period, which typically have molded designs combining plant and animal motifs, have been found in Complex No. 5's fill, indicating a reworking of palatial architecture down to its ornamental details (Shandong 2013, 132, 501) (Fig. 1.7 a). Outside the inner town, by contrast, Western Han occupation levels include a heterogeneous mix of Qi and Han tile styles (Shandong 2013, 497).

Whatever balance of power Emperor Wen (r. 180–157 BCE) sought with this experimental multicentered order could not withstand the disquiet among those who felt slighted by the size of their feudatories. His successor,



Emperor Jing (157–141 BCE), whose reign was quickly challenged in 153 BCE by the Seven Kingdoms Revolt against the Han, soured on this approach and restricted the rights of kings to rule their domains in 145 BCE (Miller 2020, 51). Unlike his father, he repossessed those kingdoms lacking heirs as central territories. Emperor Jing's strategy of spatial reworking also drew from an existing playbook. One strategy prevented the formation of potential alliances by reducing commerce and communication between kingdoms. On the ground, he interspersed commanderies and kingdoms such that each kingdom gradually found itself sandwiched between two commanderies (see 144 BCE map in Fig. 1.6 a) (Miller 2020, 49). As evidenced by the westward expansion of Langya Commandery, counties belonging to neighboring kingdoms were then cleaved off and placed under Langya's jurisdiction, kicking into gear a process of redistricting (Fig. 1.6 a).

If the case of Langya is illustrative of this process, then it is at the boundaries between commanderies and kingdoms where the reworking of state spaces is most contentious. These boundaries are not easy to reconstruct, but archaeological research in Lu Kingdom (Fig. 1.6 a 144 BCE map) gives us a partial view into the territorial dynamics. Lu Kingdom was one of the longest-surviving kingdoms (155 BCE to 9 CE), itself carved out of remnants of other feudatories (Loewe 2004b, 362) by Emperor Jing after the Seven Kingdoms Revolt. Although the city of Qufu was Lu's presumptive administrative center, it was not the largest city in the kingdom by any measure. Architectural remains (e.g., platform structures and pavers) associated with royal buildings suggest renovations were made to the lower town during the Western Han (Fig. 1.7 c), possibly to construct a new palatial precinct for the freshly installed king – Emperor Jing's son Liu Yu. This enclosed lower town, which only encompassed 3.8 km<sup>2</sup>, was fortified during the fourth century BCE, subsequently abandoned, and reoccupied during the Western Han (Chen, X. et al. 2020, 57).<sup>21</sup> Instead, archaeological probing at the settlement of Xue (Fig. 1.6 a 144 BCE No. 2) – a county seat to the south – revealed a walled city spanning 7.36 km<sup>2</sup>, which underwent not only a continuation in urban growth but also economic activity during the middle Western Han (Xu, L. 2013, 103).<sup>22</sup> Like Linzi, Xue followed a double city layout. Though the internal organization of the city remains unclear given the paucity of excavations, Han structures were also found to be constructed on rammed platforms. Remains of iron workshops are found scattered across multiple locales (Fig. 1.7 c) (Shandong 1991). Xue, being located close to the border with Liang Kingdom and two other commanderies, intersects multiple political jurisdictions and likely supplied iron commodities to regional markets (Fig. 1.6 a 144 BCE). Later in Chapter 5 we will interrogate the role of iron commodities in mediating imperial understandings of the state as an arbiter of values. The foundry located in Xue did not fall under Lu Kingdom's administrative control, however. Discovery of the inscription “Shanyang,” the name of an adjacent commandery established in 136 BCE, on casting molds not

only identifies this installation as a state-run workshop but shows that Xue, in spite of being under the jurisdiction of Lu Kingdom, was subject to central governance (IA CASS 1965, 634).<sup>23</sup> Suffice it to say, the economic significance of county seats like Xue underlines a pliability to county units as interstitial nodes within wider economic networks.

## INTEGRATING THE MIDDLE YANGZI BASIN AND REGIONS SOUTH

Shifting our focus from the Guandong region, we want to close out this chapter with the middle Yangzi River Valley, a region that has long occupied and played the role of an intermediary between the classical Zhongyuan core and the cultural and ecological diversity of the tropical south. This spatial extent comprises parts of the Nanyang and Yangzi macro-regions (Fig. 1.1 d), an area which, until its demise under the Qin in 278 BCE, made up a contiguous Chu dominion centered in Jingzhou city. Known during the Qin and Han as Nan “Southern” Commandery, along with Jiangxia and parts of Nanyang Commandery, this geographic area is nestled in the fertile valleys of the Han and Yangzi River watersheds. Together these navigable rivers make the region a commercial hub. The Han River flows south and feeds into the middle reaches of Yangzi River and Dongting Lake, which through its tributary, the Xiang River, winds southward to the Kingdom of Changsha (Fig. 1.8). Rich in natural resources, this region possessed one of the richest copper sources in China, as well as lead and iron deposits in the mountainous interiors. Lacquer trees, a source for a major craft industry during the Han, also thrived in this warm and humid climate.

While this region was often considered not quite civilized and dangerous, recent scholarship drawing on archaeology and paleography sources is beginning to challenge this dominant view and argue for a reconsideration of its integration as a state space during the Qin-Han period. The perceived geographic waywardness of the region is a legacy of Confucian commentaries from pre-imperial times. Xunzi (310–220 BCE), a philosopher based in the Jixia Academy in Linzi, for instance, did not hide his northern bias toward the south:

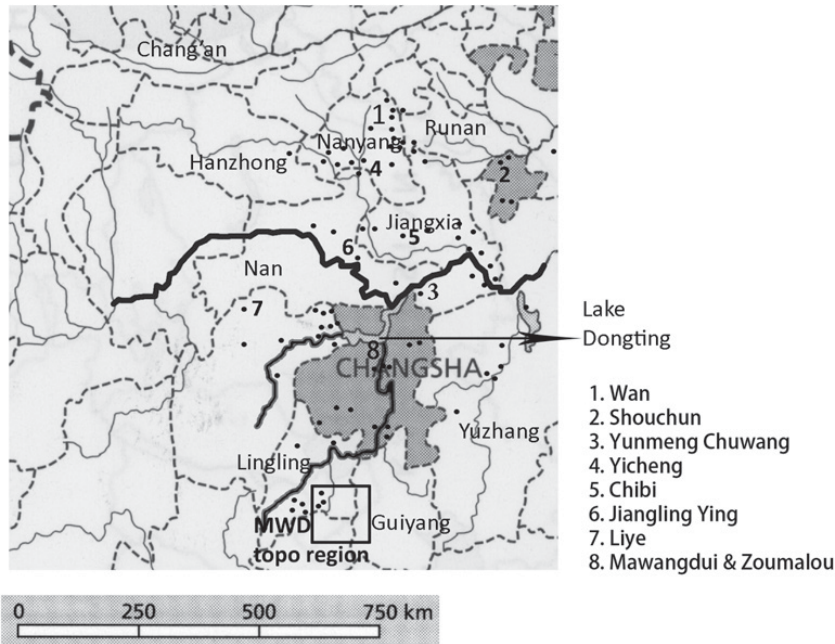
The fiery air of the sun regularly produces poison. This air is hot. The people living in the land of the sun are impetuous. The mouths and tongues of these impetuous people become venomous. Thus, the inhabitants of Chu and Yue [middle and lower Yangzi] are impetuous and passionate. The southern commanderies are a very hot region.

(translation of *Lunheng* 3: 949 in Lewis 2007, 13)

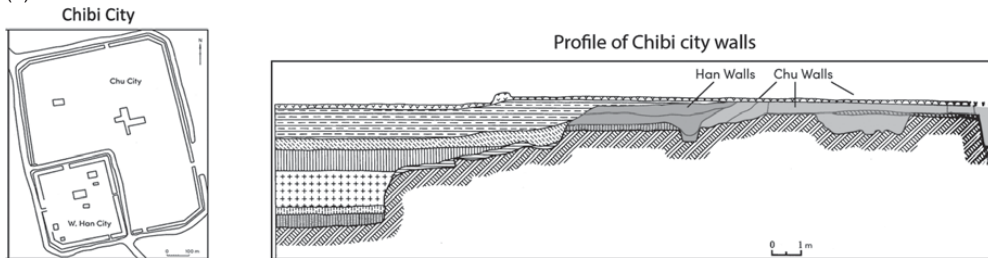
For someone accustomed to a temperate climate, it is not hard to imagine how a region with long and hot summers (mean average temperature of 29.4°C) and high humidity (1100 to 1500 mm of rainfall) would cause physical discomfort. Yet Xunzi’s characterization of local inhabitants’ fiery temperament may have



(a)



(b)



**Figure 1.8** Middle Yangzi Region (a) and urban layout of Chibi (b). Approximate area covered by Mawangdui maps (MWD) (after Zhang, X. 2006, maps 4.10.6). Urban layout of Chibi and the construction sequence of city walls (after Hubei et al. 2004, fig. 27).

sounded somewhat overdramatized since, as Maxim Korolkov (2021) has argued, the middle Yangzi (Jiangnan plain) and regions south of Lake Dongting had already come under centralized administration under the Qin. In the century prior, population relocations carried out by the Qin had settled a mix of officials, conscripted laborers, and soldiers from the north, transforming the local demographic makeup (81, 96–97).<sup>24</sup> Instead of an uninhabitable exterior outside the core, Korolkov argues that the Jiangnan plain had already been kneaded into a political matrix of “old commanderies” by the Qin, leaving the Han with the prospect of developing areas further south into either “new commanderies” or parceling them out as rewards to Liu Bang’s supporters, as was the case for the Kingdom of Changsha (Fig. 1.8).

The spatial reworking of “old commanderies” appears to have unfolded further through a process of de-urbanization of former Chu capitals. As mentioned earlier, this was a process begun by the Qin and a prime example is the destruction of the old Chu capital, Jinancheng – a burgeoning city spanning 17 km<sup>2</sup> in area (Hubei Museum 1982; Hubei 2016).<sup>25</sup> The city of Yicheng on the Han River was reduced to one-fifth of its original size once the Han reinstalled the city as a county seat in Nan Commandery (Fig. 1.8) (Archaeological Excavation Team 1980). Similarly, the former Chu city of Yunmeng was split into two with only the eastern half showing reoccupation during the Han (Xiaogan 1991, 12). Of the ninety Han cities for which archaeologist Xu Longguo has compiled spatial data, the majority of walled towns resemble Langya commandery’s “lattice” of evenly distributed towns, with each being 2 km<sup>2</sup> in area (2013, 137). Within this macro-region, only two cities that are comparable in size to Linzi – Wan (Nanyang Commandery) and Suzhou Gucheng – remained active urban centers during the Han period.

Where, in pre-imperial times, the primary capitals of Chu kings occupied large cities, the subsequent downsizing of many of these former primary capitals truncated them as population centers, effectively increasing the overall number of smaller, subsidiary towns. Because systematic surveys like the one in coastal Shandong have yet to be undertaken in the south, we do not quite understand the spatial organization of rural settlements in relation to these walled towns. However, the marked expansion of smaller walled settlements shows the development of a network of county and district centers in the “new commanderies” (Chen, B. 2016, 70–71; Korolkov 2021). In Jiangxia Commandery, the Chu settlements of Chibi, a walled city 7.45 km<sup>2</sup> in size (i.e. comparable to the city of Xue), and Qichun were both reduced to 1.5 km<sup>2</sup> after they were turned into county seats (Fig. 1.8 a No. 5) (Hubei et al. 2004; Wu 2007). Not only were these cities reduced in size and power, their original walls – the elemental form that gives shape to urban space – were also renovated, possibly following the order given by Liu Bang in 198 BCE, which called for defensive walls to be built for all county seats.<sup>26</sup> Excavations of city walls at Chudu Jinancheng show that Chu manufacturing traditions first relied on the construction of a raised core structure from soil with the addition of successive layers or coats (Peters 2004, 102).<sup>27</sup> Instead of continuing with this technique, Han builders reengineered the old Chu walls at Chibi by adding rammed horizontal layers that covered the “shells” of Chu walls buried underneath (Fig. 1.8 b) (Hubei et al. 2004, 33). Excavations at the site of Liye, which is well known for its rich archive of Qin administrative texts, show that it was probably the Qin who first introduced this northern technique to enclose and fortify county centers in new jurisdictional areas.

It is also the archaeological work at these county settlements and the painstaking restoration of administrative documents recovered from those localities that have brought, to borrow anthropologist Matthew Hull’s term

(2012), the “materiality of bureaucracy” to light. Discarded by officials as “office trash” but also as burial goods, administrative texts written on bamboo slips and wooden boards provide tantalizing data on the demography of individual counties and on legal cases (Barbieri-Low and Yates 2015). Many of the records associated with Nan Commandery, for example, provide information on the number of households in each county and individuals per household, as well as information about individuals by age and gender, producing an aggregate of productive persons subject to taxation, a topic we turn to in Chapter 3.<sup>28</sup> South of this “old” commandery, recently excavated finds from the county offices of Linxiang County in Changsha Kingdom at the site of Zoumalou also include fragments of government text records and legal cases (Fig. 1.8 a, No. 8) (Chen 2021; Song 2021). Even though Changsha Kingdom remained the longest-standing independent kingdom, these finds dating to the middle Western Han (c. 125–120 BCE) show that even regions not under centralized administration were using similar jurisdictional tools. For historians, the contents of these records have significantly augmented Han imperial geography beyond what the historiographic sources relay. Moreover, structural similarities across these texts also cast light on the formation of “data structures” that were probably crucial to the transmission and processing of information across different political units. It is important to not simply take these documents as evidence for a top-down imposition of *yitong*, for the corpus coming out of “new commanderies” also shows flexibility by local officials when confronted with transient persons that tested jurisdictional boundaries.<sup>29</sup>

Thanks in part to the rare preservation of early Western Han maps (c. 168 BCE) found in a tomb in Mawangdui, Hunan, we have an emic perspective of how state spaces were tenuously organized in these “new commandery” formations. The Han state appears to have initiated efforts to assert some control over the riverine geography south of Lake Dongting. Drawn on silk and covering Guiyang Commandery (see boxed sub-region in Figure 1.8), a region bordering and falling under the jurisdiction of Changsha Kingdom,<sup>30</sup> the Mawangdui maps (covering local topography and military garrisons) show a dendritic structure behind the distribution of *xian* counties (squares with attached names), *li* wards or towns (circles), and military installations (Fig. 1.9). Settlements are primarily located on the banks of Xiao River, a tributary of Xiang River, and Tuoshui River. On Mawangdui’s *dixingtu* topography map (Fig. 1.9), the arrangement of counties and wards or towns also reveals a distinctive spatial organization where county settlements (e.g. squares) are either located at the confluence or headwaters of each branch. Looking at the topography map, it would seem that officials approached territoriality in relation to the development of riverine networks rather than contiguous land tracts. It is very possible that many Han towns were fortified to facilitate and regularize riverine communication and trade activity. Archaeologically, this pattern appears to corroborate the settlement locational analysis undertaken by Chen Bo, which shows that 40 percent of recorded walled

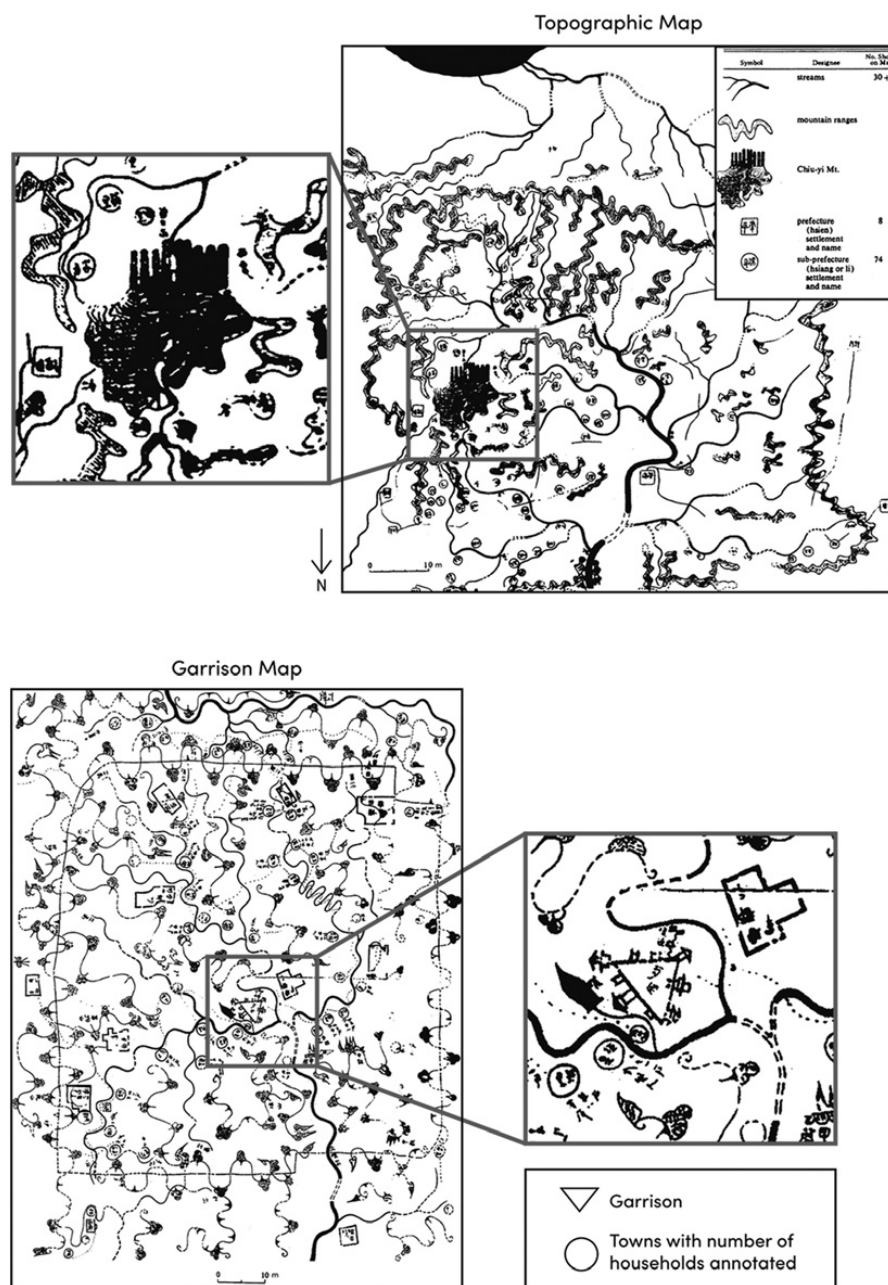


Figure 1.9 Mawangdui's topographic (top) and military or garrison (bottom) maps showing the distribution and location of garrisons and li wards in Changsha Kingdom (after Hsu 1978, 46, 48, 51). Maps are oriented with north at the bottom and south at the top.

settlements are situated within 1 to 3 km of rivers (2016, 98). An uptick in Western Han coinage at newly established Han settlements along these river valleys seems to support this hypothesis (Korolkov 2021, 190). In Chapter 6, we will examine the connection between riverine routes and the organization of supply chains.

Although these two maps seem to support the expansion of Han imperial jurisdiction, a comparison of the two also reveals a dynamically shifting imperial geography (Hsu 1978). For one, the topography map, which also covers the larger area of the Tuoshui River Valley shows the location of county towns (Fig. 1.9, “squares” in topo map) upstream while none is depicted for areas further downstream (Zhang, X. 2006). A view of this downstream area in the *zhujuntu* garrison map only shows towns or wards and military installations. Anchoring the field of vision on the garrison map (Fig. 1.9) is a military headquarter with multiple towers that seems to occupy a fixed optical point from which objects and people are measured (Hsu 1978, 52–53). A closer inspection of ward settlements shows that the number of households is annotated next to each circle symbol. Of the fifty settlements shown, eighteen are marked as having between 4 and 108 households. Many of these settlements are marked as either without inhabitants, or with households reported as “will not return,” or as having been resettled (Hsu 1978, 54), all of which highlight the contingent nature of extending early Western Han administration over regions under Nanyue Kingdom’s control.<sup>31</sup> This contrast brackets a difference between consolidated and unconsolidated spaces in Changsha. Furthermore, it also highlights the county settlement as a central object of territorial reworking and political articulation. Where symbols are completely absent, as shown in the outer frame of the topography map, one begins to sense the edge of the “known” Han world as depicted by the black void (Fig. 1.9).

Ending this section by way of the shifting boundaries of Han cartography, we want to emphasize that the imperial core did have a physical outer limit in the early Western Han. With this (un)mappable void as a jumping-off point, Chapter 2 pursues the two-fold question of frontiers and borders – the adaption of the commandery-county-ward system in the face of ecological, cultural, and political diversity. What is out there and how does it challenge imperial jurisdictional logics?

## SUMMARY

Historians have long recognized the importance of Chang’an as the spatial articulation and pivot of imperial power, representing the “head” that is symbolically and physically reworked to unify the geopolitical body. This chapter has taken a slightly different track by shifting our perspective from the gridded city that is often depicted synoptically to unpack the region’s development over the course of 150 years. A diachronic view, we insist, does not necessarily refute claims about urban planning or deny the capital’s exemplarity but it does show that the Han capital emerged out of a dialogue between the past and the future, and as an outgrowth of problems of urbanization and logistics. Highlighting the role of pedestrian things such as rooftops and walkways also aimed to illustrate how certain artifacts come to “frame” settings



for social interactions and specific bodily dispositions or skills that produce imperial subjectivities.

Settlement archaeology from the two regional case studies further shows that territorial integration requires a reappraisal of Han spatial politics, one that takes into account the commandery-county-ward system less as a top-down framework with fixed spatial units and more as a tenuous project. Our study emphasizes the importance of lower-order political units such as county and ward settlements in particular, with the potential of these towns to create new interstitial corridors between contested jurisdictional spaces and economic zones. This latent variability across political units and scales suggests that territorial formations relied on the “efficient use of nodal points” with the pliability of networks to strengthen regional communication (Smith 2005, 832), a specific tool in the playbook that will be examined in Chapter 2.

## NOTES

1. Translation of passage from *Shiji* 8: 385.
2. The discussion between Liu Bang and his advisors over Luoyang versus Chang'an as the seat of the Han capital is recorded in the *Shiji* 99: 2715, *Shiji* 55: 2043, and quoted in *Hanshu* 1: 56. Also see the political advisor Jia Yi's (201–169 BCE) commentary in “On Qin's Faults” in Jia Yi trans by de Bary (1999).
3. Major population relocations to the Guanzhong basin began under the Qin.
4. Also see Shi and Xin (2005) and Xu, W. (2012) for a discussion of Xianyang's expansion toward the southern bank of Wei River during the Qin.
5. Translation of excerpts from *Kaogongji*, “Artificer's Manual” (Guan and Herrmann 2019, 93–94).
6. *Li* is a unit of measurement that is roughly equal to 414 m.
7. For a related argument about the relationship between Xianyang and cosmological correlations, see Wang Xueli (2007, 2008).
8. In western scholarship, the stellar correspondence theory is associated with the sinologist Paul Wheatley's (1971) *Pivot of Four Quarters*. This proposal remains under debate: Liu Rui (2011, 51–52) considers the degrees of correspondence with stellar locations as a tenuous one, for the positions of constellations change seasonally such that correspondences are always possible but not necessarily aligned with the stars of interest unless one knows in which season urban designs were laid out. Pankenier also notes that one of Hotaling's key mistakes was to assume the modern location of the Polaris star was the same as the Celestial Pole of the Han. The historiographic accounts regarding earthly and astrological correlations were presumably later additions (Tang 2015, 72), a critique that Michael Nylan (2015) also supports: these claims were retrojections dating to the Jin dynasty, several centuries after Qin Han period (121fn8).
9. From *Sanfu Huangtu* c.2 Hangong; also see Xi'an 2009, 32.
10. Both Changle and Beigong Palaces have been partially excavated. In addition to these two palaces, Emperor Wu ordered the construction of Jianzhang Palace. Jianzhang Palace, which was located close to a new imperial park outside city walls, was linked to Weiyang by elevated passageways (Pirazzoli-t'Serstevens 2009, 175).

11. Deposits from the workshops in the Tangjiacun loci are mixed in with Qin remains (Xi'an 2009, 212) and Qin building materials stamped with *da jiang* (great craft master) and *gongshi* inscriptions have also been found in the Xiangjiaxiang location in the northwest corner of the city (Liu and Li 2001). Kiln sites involved in producing architectural tiles in Beigong Palace have yielded Qin seals, indicating the loci were used as workshop areas prior to the construction of Han palaces (IA CASS Han Chang'an 2001). Qin workshop remains are also found at the Caodui site, 2.5 km outside the northern walls of Chang'an.
12. According to Lander's translation of Qin statutes, for each *qing* of land (an areal extent of 100 narrow fields), a road was laid out perpendicular to the field paths (2021, 139). The prescribed width of lanes is 5 m.
13. The Sino-Japanese survey recorded elevations at one-meter intervals for the Chang'an region. Using contour lines from the 1:10,000 map series, Baker looked for adjacent changes in topography (a "wiggle" in the contour line) and connected these points to reconstruct the road network shown. Baker also examined the influence of this grid on the Sui-Tang capital to the southeast of Han Chang'an and found that the roadways did not significantly determine medieval roadways; for instance, they do not align with the gates of Tang Chang'an.
14. It also appears that the roadworks informed the placement of subsequent building projects, most notably the imperial ancestral temples built by Emperor Wang Mang (r. 9–23 CE) to the south of Chang'an, which are situated between two of these roadways (Baker 2009, 44).
15. We often take paved sidewalks as an urban amenity for granted. Often considered to be a nineteenth-century invention in the western world, pedestrian footpaths have a much longer history dating to Greek cities (see Loukaitou-Sideris and Ehrenfeucht 2009, *Sidewalks: Conflict and Negotiation over Public Space*). Parts of thoroughfares in Chang'an appeared to have been paved as well as the Western Market, indicating footpaths outside of the royal palace cities.
16. Roof tiles are manufactured in sections using coils and multi-piece molds and assembled together after drying. For a study of improvements in mold technology, a development during the Qin and early Western Han, and standardization of tiles, see Liu and Zhang 2007 and Cai and Teng 2017 for a comparison between Warring States and Qin/Han tiles.
17. Yangling was built to serve the mausoleum of Emperor Jing (157–141 BCE). The town is located approximately 200 m to the east of sacrificial or ritual offering pits of the mausoleum. Entries from 152 and 96 BCE in *Hanshu* 5: 143 state that commoners and noble families were recruited to move to Yangling, sometimes with lucrative cash incentives (Korolkov and Hein 2021, 22). The generous sum was specifically intended to entice conquered subjects to relocate from the Qi and Chu dominions, *Hanshu* 1: 66 (Ran 2013). If we adopt Ge Jianxiong's (1997) calculations, the density of Jingzhaoyin (e.g., capital and mausoleum towns), 95 persons/km<sup>2</sup>, was higher than the Guandong region.
18. Estimates of population size indicate that densities were highest in the lower reaches of the Guandong region (modern-day Shandong, Henan, and Jiangsu) with population densities reaching more than 60 persons/km<sup>2</sup>, and exceeding the Chang'an region of 40–60 persons/km<sup>2</sup> (von Glahn 2016, 144), though still lower than the mausoleum towns (see above).
19. The Sino-American team surveyed roughly 1440 km<sup>2</sup> over thirteen seasons. A total of 1682 Qin–Han sites were documented: this figure does not include sites in the Langyatai tract. Although these estimates only represent a small study

region, they are largely consistent with archaeologist Xu Longguo's (2013) analysis of walled settlements in the wider Guandong region. His observations similarly show settlements distinguished by three size groups (3 to 5 km<sup>2</sup>, 8 to 15 km<sup>2</sup>, and greater than 20 km<sup>2</sup>); some commandery centers were intermediate in size and smaller than 20 km<sup>2</sup> (103). Xu's study relies on legacy data from the 1960s to the 2000s. Though not systematically collected, the database is sizable and includes thirty commanderies and kingdom capitals and over 250 county level and nobility seats in the Guandong region.

20. The recovery of clay seals associated with the Central Court of the Qi Kingdom were found in the center of the outer, larger town, indicating that administrative offices were also located in the palatial town (IA CASS et al. 2020). Molds for minting wuzhu coins were found in the lower town (Shandong 2013, 117).
21. Chen et al. 2020 reassessment of archaeological survey data suggests that the layout of Qufu most closely approximates the axial city proscribed in the *Kaogongji*, though this classic layout was interrupted during the fourth century BCE with the building of walls to enclose and defend a lower town and elites from enemy siege (also see Xu 2004). Han remains have also been documented in the outer town, but the extent of urban occupation and activity areas is unclear.
22. The antiquity of these cities stretches back to the Western Zhou; a millennium of city history preceded Han incorporation. The ruins of an enclosed settlement dating to the late Neolithic Longshan culture were recovered inside Xue (Wu 2001). During the Warring State period, Xue was a regional state until its conquest by Qi in 418 BCE.
23. Shanyang Commandery hosted the office of an iron agency during the Western Han. It is possible that the industrial workshop at Xue was under the control of Shanyang. Improving the supply and distribution of iron goods would have improved commercial networks in this agriculturally productive zone. From the textual accounts, early Western Han was thought to have been less tightly centralized, reversing the Qin's highly centralized fiscal administration. The archaeological evidence of iron workshops in a county town of Lu Kingdom, however, argues for intensified economic control.
24. Based on the registration information from the Liye and Yuelu corpus.
25. For a discussion of the layout and organization of Chu cities in pre-imperial times, see Peters (2004) and Flad and Chen (2012, 134–136). The actual site of Ying capital remains under debate: multiple walled towns, including Yicheng (Chuhuangcheng), Jinancheng, and Yunmeng Chuwangcheng are possible candidates. How these archaeological discoveries correlate to the various pre-imperial yingdu capitals mentioned in textual sources remains under debate. For Jinancheng and Yicheng Chuhuangcheng, recent scholarship suggests that the former was the Chu capital during the fourth to third century BCE (Yin 2019), whereas the latter might have been an earlier capital (Wang, H. 2011). Arguments support the reuse of Yunmeng Chuhuangcheng as a county seat in the Qin and Han (see Chen and Cai 2020).
26. *Hanshu* 1: 43 Liu Bang's decree was presumably issued after the completion of Chang'an's first palaces.
27. Because eroded oxidized soil in the tropics has a higher clay content, it is more compact and plastic than loess and sedimentary soils. Its peculiar compressive properties facilitate structural strength unmatched by loess. Within the inner town, the rammed platform supporting the foundations of Chu palaces were constructed using this slope encasement method (Hubei et al. 2004, 59). Because

the wet and dry cycle of southern climate makes heavy clay soils – through expansion and contraction – especially brittle and susceptible to heavy weathering, thus weakening its strength, this core was then covered with a sloping layer and a final earthen layer of slope protection. These shells helped prevent erosion.

28. For an updated list of excavated documents from the Qin and Han, the digital database of ancient Chinese manuscripts <http://projects.zo.uni-heidelberg.de/manuscript/index.php/> is a useful open source. For a summary of newly excavated sources in Chinese, see Hu Pingsheng (2011), “Xinchu Han jian hukou buji yanjiu” [A study of the newly discovered Han population registers on bamboo and wooden slips]; and in English, see Ma Tsang Wing (2020) “Qin and Han Evidence: Excavated Texts.” For a discussion in English of population registers for Nan Commandery, based on excavated texts dating to 139 BCE, see von Glahn 2016, 104–105. Political subjects are categorized by age (adult and minors) and gender (males and females), as well as for persons exempt from tax obligations such as conscripts, the elderly, and the disabled. The total population numbers are over 100,000 persons for seven counties and three nobilities.
29. Recently recovered texts from Wuyi Guangchang in Changsha from the Later Han show local officials dealing with the question of “floating populations,” and whether such persons should be registered locally or to their former domiciles in the “old” commanderies (Changsha 2015; Jiang 2017; Ma 2020). While local governments encouraged floating peoples to return to their original place of domicile, by the Eastern Han, some were also allowed to stay and reregister in the new commanderies (*Hou Hanshu* 3: 132 and 6: 254).
30. The tomb containing these maps dates to 168 BCE, before the establishment of Lingling Commandery in 111 BCE. See Zheng Shubin (2021) for the latest discussion of the identity of the tomb occupant in M3. It is important to note that *tu*, the term for map, also denotes a diagram. See Michelle Wang’s (2023) detailed and innovative study, which challenges the reduction of Mawangdui maps to cartographic objects. Instead of treating these objects as realistic presentations of space, she shows how they also work to diagram and construct relations in space. These maps should therefore be understood in the context of wider imperial worldmaking practices.
31. Hsing I-tien (2007) proposes that the military map covers an administrative district located somewhere in the Mashu basin and is unconnected to the fortifications defending the Han from Nanyue.