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Mapping Knowledge in the Sixteenth Century:
The Gazetteer Cartography of Ye Chunji

TIMOTHY BROOK

When a county magistrate of the late Ming or Qing arrived to take up a new post, he faced the daunting task of quickly mastering sufficient knowledge of his new jurisdiction to be able to govern effectively. Huang Liuhong's well-known handbook for magistrates compiled in the 1690s advised that, on assuming office, magistrates read the local gazetteer. "When the magistrate makes a thorough study of the local gazetteer, he will be able to have a clear picture of its geographical layout, the amounts and rates of taxation, and the vital statistics and degree of prosperity of its population. This information is indispensable in planning his administration."[1]

Ye Chunji, a Guangdong provincial graduate (*juren*) of 1552 who pursued a modest career as a local official in the last third of the sixteenth century, would have given the same advice.[2] When Ye arrived in the coastal Fujian county of Huian in 1570 (or possibly 1571) to take up the second posting of his career, and his first magistracy, he immediately went looking for the local gazetteer. He was fortunate in finding copies of four: the 1530 and 1566 editions of the Huian County gazetteer (*Huian*

xianzhi), and the 1525 and 1568 editions of the gazetteer of Quanzhou (*Quanzhou fuzhi*), the prefecture in which Huian was located.

That Huian should be chronicled in two county and two prefectural gazetteers as early as 1570 is only mildly remarkable. By the late Ming, the local gazetteer had become well established as the dominant genre for recording geographical, historical, and biographical data of significance to the public life and administration of a county. The genre began to take form in the Tang, and underwent a measure of standardization in the Yuan after the government issued compilation guidelines in 1296.[3] Not all the conventions that came to govern how a gazetteer compiler should organize his material were fully in place even in the Ming dynasty, however. That process would continue into the first century of the Qing. Nonetheless, the gazetteer by the late Ming had become a recognizable genre, communicating local knowledge within general categories. Situated between the pre-Ming formative phase and post-Ming formalization, the sixteenth century may be regarded as the period when gazetteers universalized, for this was when the first editions of gazetteers for most counties and prefectures in China, as well as many mountains and monasteries, were produced.[4] Magistrates liked to sponsor their publication, and scholars with an interest in local geography and history considered gazetteers, and not just those of their own locale, worth owning.

Of the four gazetteers available to him, Ye found the 1530 *Huian xianzhi* most useful for learning about conditions in the county, even though it suffered for being forty years out of date.[5] The prefectural gazetteers simply borrowed their data from the county gazetteers, and the 1566 edition of the county gazetteer is basically a straight reprint. It was therefore on the 1530 *Huian xianzhi* that Ye relied for his best data. The man responsible for this gazetteer was Zhang Yue (1492–1553). Zhang would become Huian County's most prominent native son of the sixteenth century, serving incorruptibly and energetically in office. At home to observe mourning in the late 1520s, Zhang took on the task of compiling the county's first gazetteer. He not only oversaw the project but wrote substantial portions of the text, which helps to account for this being one of the most nicely written of mid-Ming gazetteers.

Ye Chunji was fortunate in having a good gazetteer to use "in planning his administration," yet he soon began to discover disturbing imprecisions and gaps in knowledge. The disturbance may have been in part a matter of his Confucian commitment to complete knowledge, but it was not purely that. What drove him to probe, and later emend, the errors in the textual record was his equally Confucian commitment to statecraft, which in post–Wang Yangming days regarded perfect action as predicated on perfect knowledge, and the impairment of knowledge as in turn causing the impairment of action. We read in the 1573 preface that the eminent Fujian writer and expert on border affairs, Guo Zaoqing, wrote for Ye's *Huian zhengshu* (Administrative records of Huian County) that what first distressed Ye was that Zhang's gazetteer had no maps. Ye does not say whether he went to the gazetteer to get maps that he could use for administrative purposes, or whether the discovery that there were none made him realize that he needed accurate maps to carry out his duties. Whichever was the case, the absence of maps inspired in him a lifelong absorption in the problem of recording precise geographical knowledge.

Ye's more immediate response in 1570 was to decide that the drawing of maps for Huian had to be among his first priorities as magistrate. Shortly after taking up his post, Ye called together a council of thirty-odd "local elders" to discuss county affairs. At this first meeting he put the project of drawing maps before them.[6] They agreed to carry out the task, but the results were not what he had hoped for. The process of getting good maps, he discovered, would be more complicated than issuing a simple order.

> When I arrived at the county, I first ordered the elders to map their local areas. . . . When the elders' maps were submitted, they did not tally [with each other]. Just at this time, Guo Zaoqing, a native of the province, visited me on his way up to the border. I showed him their maps, and he questioned me sharply about their accuracy before departing. After examining the prefectural and county gazetteers, I believed what Guo had said [about their inaccuracy] and ordered clerks to take compasses and go over

> them three or four times. Only after a year's work were the maps finished. Meanwhile I collated the discrepancies regarding mountains, rivers, and administrative boundaries [in the gazetteers, which generated] rather excessive documentation. When Guo returned and saw my notebooks, he said, "Every gazetteer compiler gives a different story. If you don't write a text [to accompany the maps], who will realize that the present version is the one free of errors?"[7]

Thus was Ye prompted to produce his own idiosyncratic variation on the local gazetteer genre, which he entitled *Administrative Records of Huian County.* The manuscript was completed in 1573 and is current to that year. The sole existing copy appears to be the version printed as *juan* three to seven in the 1672 re-edition of Ye's collected works, *Shidong wenji*, held at the Tōyō Bunko in Tokyo.[8]

Maps were the inspiration for Ye's work, and would prove to be his most significant contribution to the production of geographical knowledge in the late Ming. By restoring the map as the core mode of organizing knowledge of place, Ye was returning, unconsciously it seems, to the Han-dynasty practice of recording geographical information on cadastral survey maps. It was this practice that led to the development of books of maps (known variously as *tuji*, *tujing*, and *tuzhi*) in the Sui and Tang, sometimes running over a hundred *juan*.[9] Out of these atlases (books of maps explained by appended texts) grew gazetteers (books of texts illustrated by maps). This shift in the representation of knowledge from visual to textual was undertaken presumably because of a need to record types of knowledge with greater descriptive precision than a visual summary allowed.

Precise knowledge of the status or quantity of things (such as land, crops, taxes) came to outweigh precise knowledge of their location relative to other things. In gazetteers after the Tang, location would be generalized, and maps accordingly reduced to simple pictures. By the Song, the term "*tu*" disappears from gazetteer titles (except when adopted as a conscious archaism), and the efforts expended on creating the maps in gazetteers decrease. The maps inserted in the prefatory material

of Ming gazetteers are mostly pictorial summaries rather than exact renderings of precise knowledge of spatial dimensions and relationships. The reader would be hard pressed to extract from such maps information about where places actually were or how one could get from one place to another.

Although maps lost their primacy as a mode of organizing local knowledge in Ming gazetteers, they were revitalized by imperial fiat early in the Ming dynasty as a format for organizing fiscal knowledge of land at the village level. In 1387, the Hongwu emperor, displeased with the persisting evasion of fiscal registration by wealthy households, ordered his tax captains to compile booklets of maps for their areas showing the boundaries and ownership of all agricultural land. Every plot was to be paced out and measured.[10] The resulting Fish-Scale Registers (*yulin tuce*), so called because the pattern of plots on the maps looked like fish scales, may not have been topographically precise, but inasmuch as they were created for tax purposes, it would have been in most landowners' interest to see that the boundaries were carefully surveyed and exactly recorded, lest one find himself due for taxes on someone else's land, or unable to verify ownership of his own. The drawing of the Fish-Scale Registers for every village in China was possibly the most exhaustive mapping program in China prior to the twentieth century.

Little otherwise appears to have happened in the field of cartography during the Ming prior to the middle of the sixteenth century. Then that too was revitalized when the Jiangxi Neo-Confucian Luo Hongxian (1504–1564) revived and developed the grid system for drawing maps. Luo was one of the leading Wang Yangming scholars of the mid-sixteenth century. Like Wang, he was a man of action, though his exclusion from the civil service between 1541 and 1558 meant that he could not act out his sense of social responsibility through the usual channels of officialdom. Undaunted, he worked instead on local and regional problems in an informal, advisory capacity. His work included resurveying local lands to enable his county magistrate to adjust inequitable tax burdens, organizing defenses of the county seat during bandit attacks, and compiling information to help regional officials defend the coast during the piracy surge at mid-century. His experience with land surveys, combined with his

recognition that national defense required precise knowledge of coastal and border areas, led him to map making, and to the revival of the grid system.

The grid system is an isometric projection in which territory is mapped according to equal squares, each square in the grid representing the same distance on the ground. It is conventionally attributed to Pei Xiu (224–271), although the earliest surviving example of grid mapping is an 1136 reduction of a map by Jia Dan (730–805). This map, *Yuji tu* (Map of the vestiges of Yu), depicts all of China on a grid of uniform squares. It bears the inscription "each [side of a] square is equal to a ground distance of one hundred *li*" (*meifang zhe di baili*).[11] In the Yuan dynasty, Zhu Siben (1273–1337) devoted a decade to composing a national map of China using this grid system. His *Yudi tu* (Map of the terrestrial realm), considered to be the most accurate cartographic rendering of China to that time, did not substantially alter Chinese cartographic practice until Luo Hongxian, after three years of searching, found a manuscript copy. Luo reports that the original, a chart seven feet (*chi*) square, was drawn according to "the method of counting *li* and dividing into squares" (*jili huafang zhi fa*). What Luo did was to use the grid method himself to convert this great chart into a book of forty-five regional and provincial maps: not a universal map of China but a universal collection of regional maps. *Guangyu tu* (Enlarged terrestrial atlas) was first published in 1555. The book was well received and went through at least five editions over the next quarter-century (1558, 1561, 1566, 1572, and 1579). It became the standard for all subsequent cartographers of China, including Matteo Ricci, who relied on the 1579 edition to draw the Chinese portion of his 1584 map of the world.[12]

Ye Chunji had already acquainted himself with Luo Hongxian's cartography before he took up his post in Huian County. In fact, he was acquainted with Luo himself. During the 1550s while studying for the provincial examinations, Ye traveled with friends up to Jiangxi and met Luo several times.[13] Luo's seriousness of purpose and his scholarly interest in administrative geography impressed Ye, who came to regard Luo as his intellectual mentor. When in the 1570s after Luo's death (and his own temporary banishment from public life) Ye chose the studio name Shidong (Stone Grotto), he may have done so to publicize his relationship to Luo,

who at a similar stage in his career withdrew to his retreat-cum-school, Shilian Dong (Stone Lotus Grotto). There is no evidence that Luo personally instructed the junior visitor from Guangdong in the craft of making maps. It seems likelier that Ye, impressed with Luo, took up the study of his mentor's work and taught himself.

Repeated references through the first two chapters of *Administrative Records* display his familiarity not just with Luo's method but with other recent work in cartography. He cites the remarkable atlas of the northern regions, *Jiubian tulun* (Maps and commentaries on the nine border regions), which Xu Lun (1495–1566) completed in 1534, presented to the Jiajing emperor in 1537, and published in 1538. Luo Hongxian relied on the *Jiubian tulun* for his renderings of the northern border areas and may have been responsible for introducing the work to Ye.[14] Ye also refers to a book by a man surnamed Li entitled *Yudi tuxu* (Maps and descriptions of the terrestrial realm), also of the Jiajing era (1522–1566), but apparently no longer extant.[15] He learned much studying both books, he says, yet neither had the level of practical detail that set Luo's maps apart from all the other cartographic work available to him.

Using Luo's method to draw a county map was not a straightforward matter, however. Luo himself had never applied his method on this scale, and his atlas did not go below the county level. He had revived the grid system only with a view to systematizing existing cartographical knowledge at the county level and above. What Ye did was to take Luo's method below the county level and develop a technology of drawing accurate local maps on the basis of on-the-ground surveys. In his preface to *Administrative Records*, Guo Zaoqing draws attention to this innovation, which is Ye's great, and hitherto neglected, contribution to Ming cartography: precise mapping at the local level.[16]

Ye's order to the elders to draw up local maps specifies that they were to use the grid method he had taken from Luo's atlas. As noted, the project did not produce satisfactory results. Possibly Ye left the application of Luo's principles to the local elders to figure out. If so, it seems that they met his request in good bureaucratic fashion: that is, they simply sketched preexisting drawings or maps of their areas onto the grid to give the appearance of having used it, rather than actually surveying their areas by grid square and transcribing the results onto the larger grid.

Ye's second attempt "to apply Luo's ingenious method to my county" was done under close supervision.[17] He recruited "the well-read among the scholars junior to me" to help compile documents for the project, then explained to them the grid method so that they could help work on the maps.[18] Then he mobilized local elders and village leaders to help with drawing maps at the level of the *lijia* hundred (*li*). Altogether 155 local maps were made. Ye then took these and used them as raw material for constructing maps of every township (*du*). In southeast China, the township was the principal administrative unit between the county and the village.[19] Huian had had thirty-four townships earlier in the Ming; by the sixteenth century, seven had been amalgamated to others, for a total of twenty-seven.

To draw his township maps, Ye set up working grids, whose dimensions he established through the following calculations: According to the 1530 gazetteer, Huian was 90 *li* by 80 *li* in size (Ye later found these figures to be incorrect). There were twenty-seven townships plus the county seat, so he rounded the number of subunits up to thirty and divided the total area of the county (7,200 square *li*) by that number, which yielded an average township size of 240 square *li*. Since a township was likelier to be oblong than square, he could not make do with a grid whose side was simply the square root of 240. To allow for irregular shapes, he chose instead to divide the total area by ten and set up a grid that was 24 *li* on each side. At 1 *li* per square, his drafting board for each township map was 24 squares across and 24 squares down: a total grid of 576 squares. These he would truncate or add to as the need arose.[20] Following this method, Ye produced the twenty-nine maps that appear in *Administrative Records*: a map of the entire county, an urban map of the county seat, and twenty-seven township maps.[21]

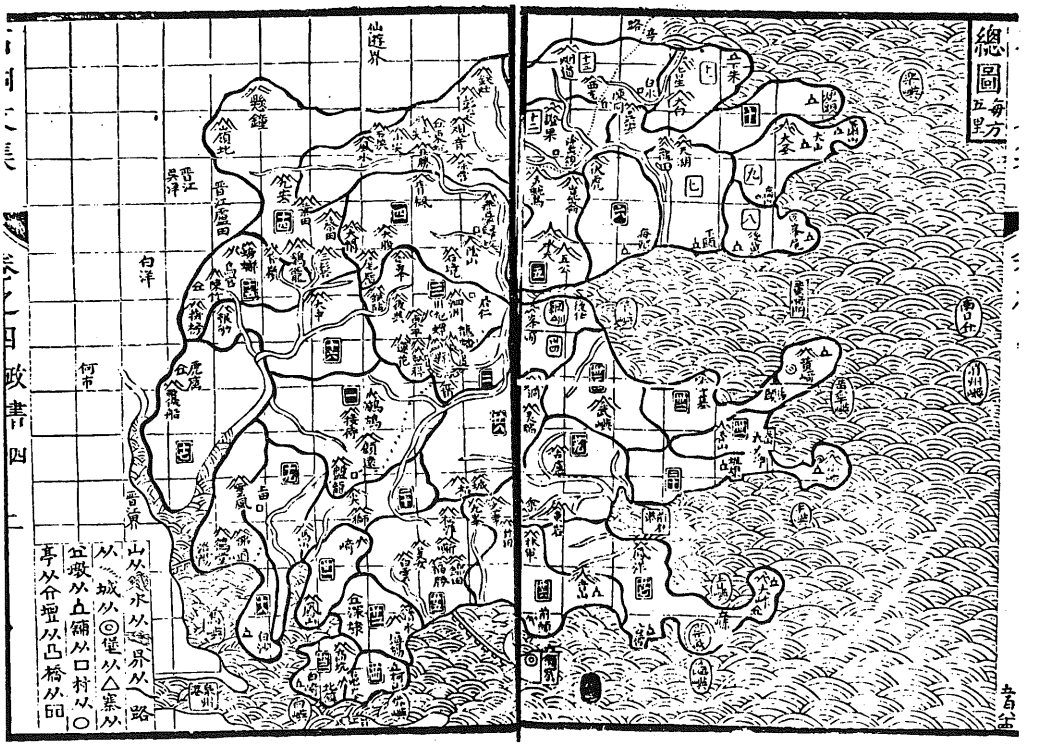
Printing his maps of townships of different shapes and sizes on pages that were all one size posed Ye's next problem. He could not simply draw them all to the same scale and hope to produce maps of uniform size. Ye had to vary the scale for each map, but he did so not by putting them on grids of different scales, but by reducing or expanding the size of the squares on paper. The squares on the printed maps will thus be found to range in size from 0.7 cm. to 5 cm. What remains constant, for all but two maps, is the distance that one square in the grid represents.

With two exceptions, every map bears the notation: "[the length of the edge of] every square is one *li*" (*meifang yili*). As Ye phrased his method, "The grid of squares (*fangce*) has to be filled (*biying*)" uniformly at the same rate, but the size of the grid did not have to be the same on every map.[22] The two exceptions to this uniform variable scale are the map of Townships #14–17, which uses a scale of two *li* per square, and the county map, drawn to a scale of five *li* per square.

Ye Chunji states that his goal in making these maps was to compile a precise record of topographical features and settlements.[23] Yet he did not choose to produce an atlas. He recognized from the start that certain categories of administratively useful information, such as the amount of arable land, were difficult to represent visually. Thus, despite the importance of his maps, his goal was not simply to produce a book of maps, but to use maps as one technology among several to organize knowledge efficiently. Rather than try to produce adequately detailed cadastral maps, he chose instead to append knowledge in two other formats. A one-page text summarizing the main characteristics of the township precedes each map, and five charts (*biao*) follow it: human settlements and structures (post houses, villages, altars, pavilions, schools), *lijia* household categories, population figures (by male and female, adult and child), arable land, and taxes. As he did for the maps, Ye compiled these charts working from actual data collected by his junior associates rather than using material on file in the county office. (One of his discoveries when he assumed office was that the county's records had not been revised for forty years — in other words, since the time when Zhang Yue compiled the 1530 gazetteer.)[24] The data are current to 1573.[25]

The grid design of the charts makes them as easy to consult as the maps. And the charts follow the same format for every township, again like the maps — a point that Ye himself notes.[26] Ye thus treats knowledge about different places as no longer specific to where it occurs. He has standardized it into a single, infinitely repeatable form which can nonetheless be perfectly adapted to circumstances by modulating the mesh and scale of the grid on the maps and the size of the blanks on the charts.

The first map in the book, which shows the entire county (see illustration 1), is on a grid of three hundred squares using a scale of five *li* per square. Like all the other maps in the book, the county map is



1. Map of Huian County. From Ye Chunji, *Huian zhengshu* 4, pp. 1b–2a. This and the following three illustrations are reproduced from the 1672 edition of Ye Chunji's collected works, *Shidong wenji*, courtesy of the Tōyō Bunko, Tokyo.

precisely territorial: that is, it leaves the space beyond the boundaries of the territory it maps blank, except to indicate adjoining settlements or administrative jurisdictions. His attention to detail focuses in this map on the larger features of topography and boundaries. The boundaries appear on the county map as thick lines, and the township numbers are marked (in most cases) as white numbers in framed black rectangles. Determining township boundaries was the biggest difficulty he says he faced, especially in places where neither mountains nor rivers served as natural markers. In this task, the 1530 county gazetteer could be of surprisingly little use. It lists embankments, for instance, according to Song subcantons (*li*) rather than Ming townships.[27] Determining which natural feature or public works lay in which township required on-site surveys. Even then it could not finally be ascertained until township boundaries were set,

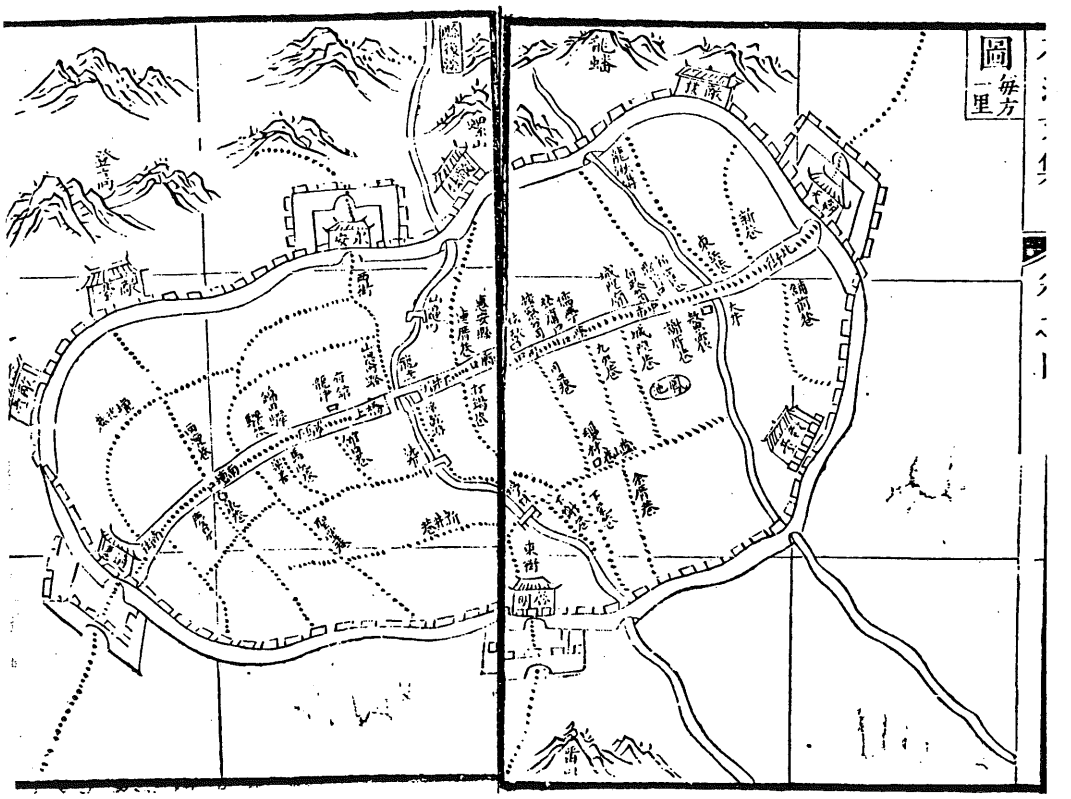
2. Legend on the map of Huian County. From *Huian zhengshu* 4, p. 2a.

since even local residents disputed about which pieces of territory fell within which township. Ye notes with regard to siting mountains that, by comparison, Luo Hongxian faced an easier task, since his national map shows only the five sacred mountains of China. Rivers were even more difficult to map, for whereas the actual shape and location of a mountain do not have to be indicated precisely when using the Chinese pictorial convention for mountains, the location of a river could not similarly be fudged. Its constantly turning course had to be got just right.[28]

Most of the features Ye chose to put on the county map appear in the legend set in the lower left corner of the map (see illustration 2). Luo Hongxian had used symbols in his *Enlarged Terrestrial Atlas* and grouped these symbols together in a legend, but he put the legend in the book's preface, not on the map itself. Ye's map of Huian appears to be the first

Chinese map on which a legend appears in a blank area of the page. Only the first two entries in the legend, for mountains (*shan*) and rivers (*shui*), are pictorial; the rest are symbolic. Boundaries (*jie*) appear as thick lines, roads (*lu*) as broken lines, and city walls (*cheng*) as double encircling lines, although on the map the wall around the county seat is distinguished as a crenelated circle. The remaining eight symbols indicate structures: military camps (*bao*), stockades (*zhai*), beacons (*dun*), post houses (*pu*), villages (*cun*), pavilions (*ting*), altars (*tan*), and bridges (*qiao*). Some of the symbols Ye uses (such as those for stockades and beacons) come straight from Luo's legend. Others, like the empty rectangle, are redeployed: for a prefecture on Luo's maps, for a post house on Ye's. Yet others are of his own choosing. In actual fact, Ye's county map does not include all these structures, only the coastal beacons and post houses. The legend, which is not repeated on any of the township maps, is thus intended to serve for all the maps.

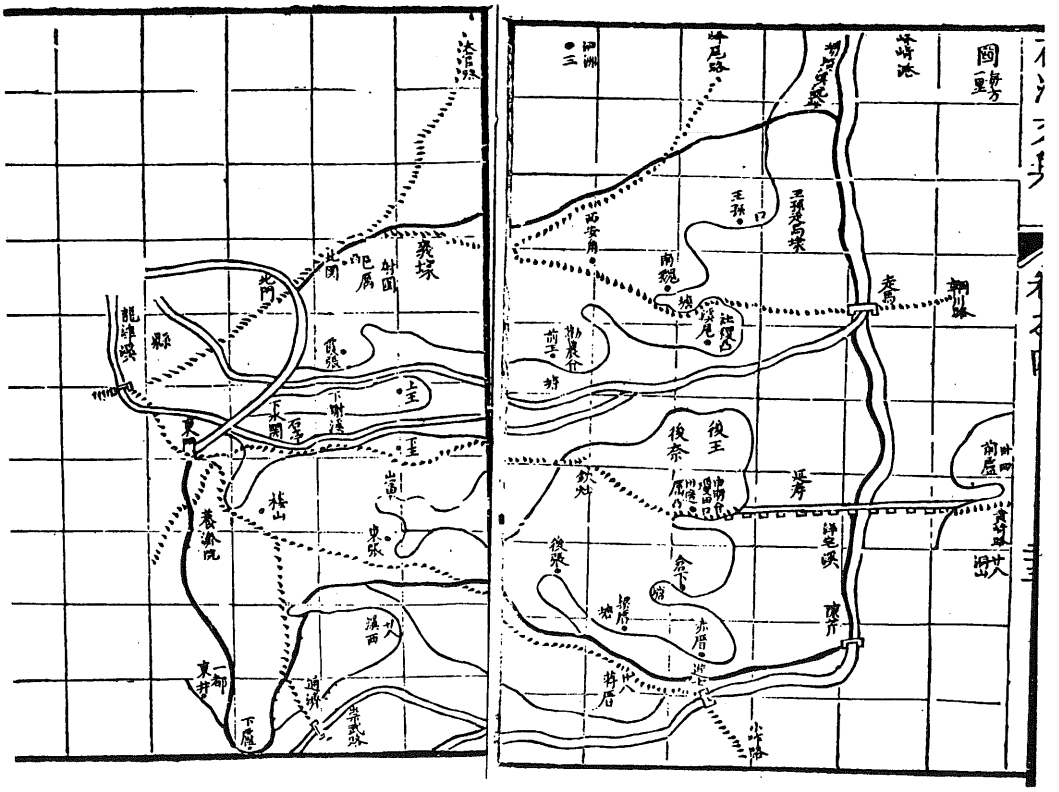
The next map in the book, of the county seat (illustration 3), was drawn on a grid of only twelve squares, each of which stood for one *li*. Perhaps because of the low scale, Ye felt free to employ conventional pictorial elements more extensively in this map than in his others, notably the crenelated city wall, the towers and protective outer walls of the city gates, and Phoenix Pond in the southeastern area of the town. Otherwise, he repeats the use of symbols given in the legend — with one variation: the open rectangle designating post houses (*pu*) is also used on the town map to mark police posts, which as it happens are also called *pu*. This map is unlike other county-seat maps in gazetteers in the detail it gives regarding the locations and names of the main streets, intersections, and public buildings in town, particularly the last. One could actually walk through the town with Ye's map in hand and find everything that is marked on it. Reading right to left down the main street running from the north gate of Chaotian to the south gate of Tonghui, one finds Aozhen Police Post on the south side of the street (just past Longqiu Sluice), then on the north side the main county post house (*xianqian [pu]*), the suboffice of the Provincial Administration Commission (*buzheng fensi*), the City God Temple (*chenghuang miao*), the county school (*ruxue*), Dengyong Police Post, the suboffice of the Provincial Surveillance Com-



3. Map of the Huian County seat. From *Huian zhengshu* 4, pp. 10b–11a.

mission (*ancha fensi*), and Xuange Police Post. Further west past the Longjin River, one finds the prefectural hostel (*fuguan*), Longjin Police Post, the county courier station known as Jintian Station, Leshan Police Post across the street, and, down near the south gate, Qingquan Police Post.

The map of Township #2 (see illustration 4) is drawn on a scale between the county and city maps. The ratio of the grid is 1 square per *li*, as in the city map, but the size of the township requires a much denser grid (of 120 squares) to accommodate its greater expanse. Township #2 lies immediately southeast of the county seat, the city wall of which is marked by the curving double lines on the left-hand side of the map. The land is reasonably flat and featureless, which means that the topography is defined by its rivers. Longjin River and Longqiu Sluice flow out of the



4. Map of Huian Township #2. From *Huian zhengshu* 4, pp. 23b–24a.

county seat left to right across the middle of the map and converge before reaching Yangkang River, which flows across the bottom of the map and joins its tributary halfway up the right-hand side. Around each river Ye has drawn a continuous thin line, which seems to indicate the river's spillway or flood plain. The meaning of this line is suggested by the depiction of Yanshou Bridge in the lower right-hand quadrant of the map. Unlike the four other bridges shown on the Yangkang River, Yanshou is shown not just spanning the riverbed but stretching from the line on one side of the river to the line on the other. This bridge, built in 1366, consisted of 129 arches and was over two-thirds of a kilometer in length:[29] a bridge designed to keep the east road open even when the river flooded. This use of lines to mark flood plains — contour lines gauged not to sea level but to the level of the river — is a feature I have seen on no other Ming map.

Besides rivers, bridges, and flood plains, the map displays many other categories of information: twenty villages (each marked by a black dot), three altars, three pavilions, two police posts, and a lock (*dai*). In addition, in the area of the township close to the county seat are marked such institutions as the school archery compound (*shepu*), the charitable cemetery (*yizhong*), and the hostel for the destitute (*yangji yuan*), though in each case the name appears without an accompanying symbol. The only institution listed in the charts for Township #2 but not shown on the map is schools, of which five are listed. There was certainly no precedent for marking schools on maps, and Ye apparently saw no purpose in starting one.

Where the map is particularly good is with regard to the two networks of roads leading out of the north and east gates of the county seat. The main official road (*da guanlu*) running out of the north gate soon forks, then further subdivides along its eastern branch. The road out of the east gate immediately divides into three, with a fourth route branching off from the southeastern road and heading due south. All are not only marked but named. Ye notes in his first chapter that he paid special attention to the marking of roads on his township maps, particularly to ensure that the point where a road is shown as exiting from one township is the same as the point where it crosses into the next.[30] Significantly, it was Luo Hongxian's failure to pay attention to roads on the maps of his *Enlarged Territorial Atlas* that earned him criticism from writers on topography in the seventeenth century.[31] The same criticism could not be leveled at Ye.

It is well to bear in mind that what we are looking at are not manuscript maps, but printed maps. Ye does not reflect on problems that may have arisen in the course of transferring his hand-drawn maps to wood blocks. The sole reference to publishing appears in the preface, where he says that he entrusted the work of having the wood blocks cut to his friend Guo Zaoqing. One thing it is possible to determine is that the craftsman who engraved the map of Township #2 was not also the engraver of the county and town maps. The obvious visual clues are the difference in character styles between this and other township maps, the use of black dots rather than empty circles to locate villages, and the sharper hatching of the dotted road lines. Whether the different hand has

introduced more than stylistic ticks that materially alter (or distort) the character of the map requires a finer analysis than is possible working from photoreproductions.

The maps and their appended texts and charts constitute about two-thirds of *Administrative Records of Huian*. In terms of the chapter structure, however, they fill only the middle five of the twelve chapters or "administrative records" (*zhengshu*) into which the book is divided. Three chapters precede them. The first, "Questions on Maps and Annotations" (*Tuji wen*), is a series of twenty-eight questions and answers that lay out in some detail the difficulties entailed in record keeping and making. The second, "Investigations on Geography" (*Dili kao*), is a series of entries on mountains, rivers, bridges, and major buildings, in which Ye carefully notes discrepancies in previous gazetteers. His list of sites therein is not comprehensive, being restricted to those for which previous records are incorrect. The third, "Investigations on Cadastral Registers" (*Banji kao*), reads much like the chapter on county finances in any gazetteer. The last four chapters of the book are reports on four institutions that Ye, following in the tradition of Luo Hongxian,[32] sponsored as magistrate: rural covenants (*xiangyue*), community rites (*lishe*), community schools (*shexue*), and mutual defense units (*baojia*).

Taken together, these twelve "administrative records" add up to something other than a regular county gazetteer. The book resists classification as a gazetteer, for four reasons. First of all, it highlights maps and charts over text to organize data. Second, it does not follow the customary arrangement of chapters, nor does it include such standard gazetteer information as records of former officials, lists of degree winners, biographies, and local writings. *Administrative Records* reads more like the first third of a gazetteer, and only then one in the making. Third, unlike most county gazetteers, *Administrative Records* does not aggregate all its data to the county level, but leaves much at the township level. In this way it is more localistic than the average county gazetteer. A fourth characteristic that sets the book apart is the presence of the compiler as narrator. Ye does not disappear behind the facade of objectivity that the gazetteer format provides, but shows himself at work, analyzing, organizing, advocating. His book is thus far more revealing about the processes that informed the creation of the book, and about the designing of the

maps, Ye's particular contribution to Ming cartography. The gazetteer format, it seems, is not what he wanted.

Ye was not entirely unique in choosing to compile an administrative record of Huian County rather than a gazetteer. Other Ming county magistrates, it seems, did the same, though few of their records have been preserved. The one whose work in this vein comes to mind is Ye's elder and more famous contemporary, Hai Rui (1513–1587). Hai's *Chun'an xian zhengshi* (Administrative affairs of Chun'an County), completed eleven years before Ye's *Administrative Records*, similarly discusses the tasks and procedures of local administration and does not aspire to be a complete account of the county.[33] By comparison with *Administrative Affairs of Chun'an*, *Administrative Records of Huian* stands slightly closer to the gazetteer genre because it focuses more on geographical knowledge and less on budgetary and judicial matters.

Like Hai Rui, Ye Chunji was a conscientious magistrate who used the knowledge he amassed and organized to administer the affairs of the county with a strict hand. He alleviated tax burdens that fell disproportionately on the poor, and sought to regulate county life better by revitalizing the *baojia* and rural covenant systems. These efforts were appreciated by the common people, but not by the local power holders. The biography of Ye in the Quanzhou prefectural gazetteer of 1763 observes that he did not defer to the powerful. While he was in office, they were obliged "to stay their hands and did not dare to break the law." But as Huang Liuhong warned, a magistrate's "more clever and articulate enemies will criticize or even create trouble for him at the time of his departure."[34] Clearly, Ye's strict administration of county affairs made him enemies. When at the end of his tenure in Huian he received a promotion to a subprefectural magistracy in Sichuan, one of these enemies absconded with the official order for his transfer. Without it, Ye could not proceed to his new post, making him liable for punishment for desertion from duty.[35] Cornered effectively, Ye could do nothing but plead illness to his superiors and retire to Stone Grotto. The blow was not only vicious but effective. For failing to take up his post, Ye was banished from public life for twenty years.

Ye's forced retirement would have its benefits for scholarship, however, for it released his talents from administration and led him a

decade later to become active as a gazetteer compiler. When he wrote *Administrative Records of Huian*, he was not trying to compile a full gazetteer, but a gazetteer was reasonably the next stage to proceed to in summarizing and expanding the data on which he concentrated in this first experiment with local knowledge. In the 1580s, he compiled three gazetteers for places back in his native Guangdong: for Shunde County in Guangzhou Prefecture (*Shunde xianzhi*, 1585); for Yongan County in his home prefecture of Huizhou (*Yongan xianzhi*, 1586); and for Zhaoqing Prefecture (*Zhaoqing fuzhi*, 1588).[36] Although I have not had the opportunity to examine these gazetteers, they appear to adhere more closely to standing gazetteer conventions for organizing local geographical knowledge.[37]

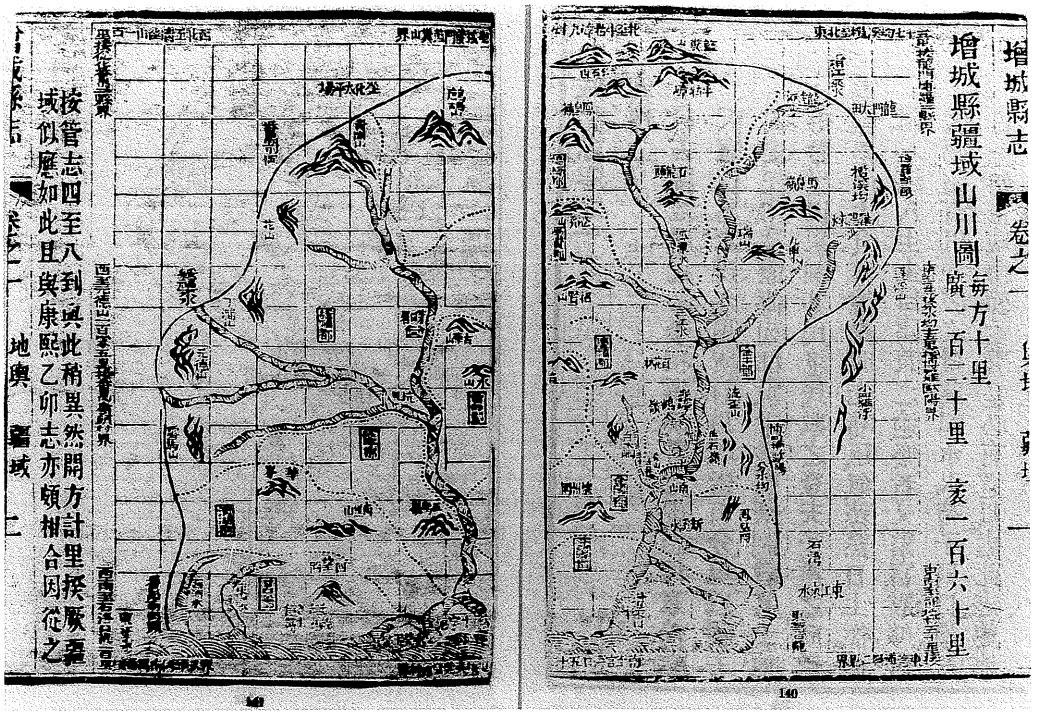
Ye's maps in *Yongan xianzhi* have already been examined closely by Bangbo Hu in a recent issue of this journal.[38] As in Huian, Ye used the grid system; he also generated his maps through surveys conducted by assistants who paced out the territory. To Hu's observations regarding the Yongan maps I wish only to add two evaluations of Ye's 1586 work, one negative and one positive. The negative evaluation is that the low scale and high detail that characterize *Administrative Records of Huian* have been compromised in the Yongan gazetteer. The gazetteer includes only four maps, one of the county and three of townships, compared to the twenty-nine in the Huian handbook. Furthermore, the scales of the Yongan maps are fifteen and twenty *li* per square, compared to a range of one to five *li* for the Huian maps. As a result, data like the contours of flood plains are not marked. One could also note with dismay that Ye has compromised the precise territoriality that distinguished his Huian maps, cluttering the spaces outside the county or townships with topographical features beyond their borders.

More positively, it deserves to be pointed out that Ye did not take on the task of mapping Yongan by simply repeating a formula he had worked out in Huian. This is apparent, for instance, when one compares the legends on the two sets of maps. The Yongan legend is not a copy of the Huian legend. Rather, Ye has reduced the number of symbols by two and changed the types of sites included in the legend, presumably to take account of the different institutions and terminology in inland Guangdong

as opposed to coastal Fujian. The principal symbols remain unaltered between the two legends, but two are put to different uses, and three new symbols are introduced. Ye has thus been flexible in adapting his work to the conditions he found. Local reality, in other words, had greater authority with him than his own precedents.

Ye Chunji's maps, with their legends and grid lines, have the seductive appearance of modern cartography. The similarities, at the time that Ye was drawing his maps, were accidental. The Chinese were unaware of the European cartographic practice of drawing lines to indicate latitude and longitude until Matteo Ricci printed his map of the world in 1584. Nor did they understand that the European grid of meridians and parallels was devised to produce a spherical rather than flat projection. Nonetheless, the coincidence may have had its impact. It is possible to speculate, for instance, that Ricci's grid echoed Luo Hongxian's atlas in such a way that Chinese readers were inclined to regard it with favor: the presence of a grid induced them to believe that this was a carefully made map. It is also possible that Ricci, ever alert for ways to bridge cultural differences with his Chinese audience, himself recognized the value of mapping on a grid precisely for this reason. After all, he understood Luo's atlas to be the best there was.

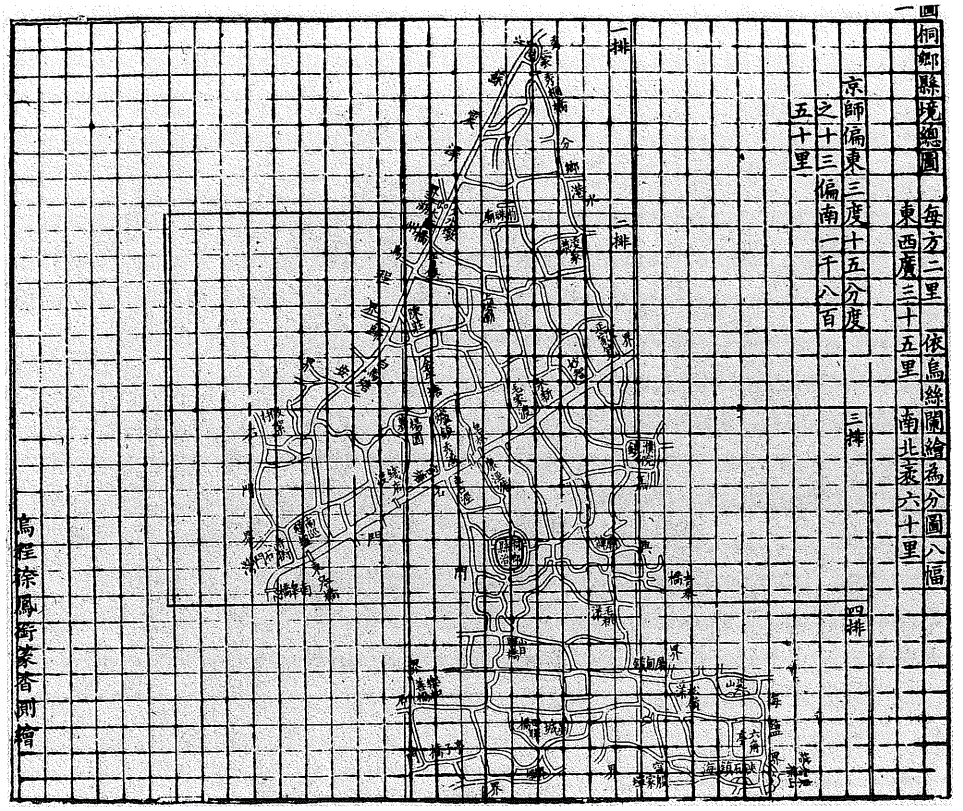
This brief moment of mutual misrecognition between Chinese and European cartography did not promote any change in Chinese practice. Despite the obvious strengths of Ye's method, gazetteer cartographers continued to make use of the older pictorial conventions for conveying spatial information. A casual survey of Guangdong, Fujian, and Zhejiang gazetteers after Ye's time has turned up no grid maps of counties or townships before the nineteenth century. The earliest gazetteer where grid maps appear is of Zengcheng, Guangdong, and dates from 1820 (see illustration 5); others soon follow.[39] By the 1870s the grid method had spread up into the gazetteers of Fujian and Zhejiang,[40] and by the 1880s into Jiangsu and Hubei.[41] As of the 1870s, however, Guangdong gazetteers begin to abandon the Chinese grid in favor of marking latitude and longitude.[42] One of these, in fact, is the 1876 gazetteer of Zhaoqing Prefecture — for which Ye Chunji had compiled the 1588 edition. It is difficult to argue for any sort of internal influence between these two



5. Map of Zengcheng County, Guandong. From *Zengcheng xianzhi* (1820 edn.) 1, pp. 1b–2a. This is the earliest Qing gazetteer map I have found for which the grid system was revived. The scale is ten *li* per square.

editions; indeed, none of the gazetters that uses a grid makes reference to Ye Chunji's work.[43] Ye was the first to do what these nineteenth-century compilers have done, yet he was unknown to them.

The revival of the grid system was clearly a response to the arrival of Western maps in China, for the grid system gave Chinese maps a specious likeness to the much admired and more accurate maps from the West. The transitional nature of the revived Chinese grid is demonstrated in the 1887 gazetteer of Tongxiang County in Zhejiang (illustration 6), in which the cartographer has exploited the coincidence between Chinese and Western grids by drawing his maps on a Chinese grid while citing longitudinal position.[44] I suspect the grid system would never have been revived in the nineteenth century were it not for the apparent confirmation the method received from the outside. Its revival was also its demise, since the interest in making maps in the style of Ye Chunji



6. Map of the waterways of Tongxiang County, Zhejiang. From *Tongxiang xianzhi* (1887 edn.), *juan* 1. This map is noteworthy for being drawn according to the grid system (two *li* per square) but also being correlated to longitude: the caption inserted at the upper right states that the county is 3° 15' 13" east of the capital. The caption is in error by one degree. Tongxiang is acutally located one full degree further east. The caption provides no indication of latitude, noting only that Tongxiang is 1,850 *li* south of Beijing.

died as soon as Chinese cartographers were capable of drawing them according to Western methods. The grid method, in other words, provided a convenient, but quickly dismantled, bridge to European cartography.

Seen in academic terms, Ye Chunji's place in the history of Chinese cartography is unmistakably important. He applied Luo Hongxian's method at a level of detail Luo had never attempted, and he left behind in his writings rich accounts of the process by which he produced his maps. In practical terms, his impact was limited. In some part, this was because his work did not circulate widely. *Administrative Records of Huian*

was almost completely unknown, and his three gazetteers are quite rare. The greater part of his failure to alter Chinese map making was because there was no sense of demand for the quality of map he produced until a competing cartography arrived from Europe and cast non-grid methods into disrepute.

Ye's place in the history of the Chinese organization of geographical knowledge more broadly conceived is less easy to evaluate than his cartographic work. In a sense, *Administrative Records of Huian* was an impressive and innovative piece of work that did not go anywhere. It did not lead even Ye himself to generate new ways of organizing geographical knowledge when he went on to compile conventional gazetteers. The key factor, it seems, was Ye's point of view, which remained inextricably bound to administrative concerns. He did not compile or organize information for its own sake. He did so because he understood the value that precise information had for an official like himself "in planning his administration." A better map or a better compendium of documents contributed to better statecraft. But these needed to be bettered only to the extent that the precision with which certain categories of knowledge could be registered was improved. The best cartography and the best summaries of geographical knowledge in the latter half of the Ming dynasty may have been produced by men like Luo Hongxian and Ye Chunji who spent much of their careers out of office, but knowledge for the sake of statecraft, not for the sake of knowledge, was the object of their work. It would never have occurred to Ye Chunji to think of it in any other fashion. But then, it would never have occurred to him to produce the maps he did were he not in need of the type of knowledge to which he was bound.

Behind the administrative needs that shaped Ye's cartography, I would suggest, lies a more pervasive influence on his ways of organizing local knowledge, and that is the growth of the commercial economy. The evidence for this influence is the very precision that sets the maps in *Administrative Records of Huian* apart from earlier map making. Earlier gazetteer cartographers had been content simply to picture a visual world from the comfortable vantage of the county seat. As one looked toward boundaries, this world faded into hills and clouds — uncharted territo-

ries. Ye Chunji felt the need for a more precise representation of spatial relations, one that did not replicate the hierarchical relationship of core and periphery implied in most county gazetteer maps. One effect of this precision was to map peripheral areas with as much attention as core areas. This universal gaze is significant of more than bureaucratic thoroughness. The administrator might value such precision to the extent that it facilitated the collection of taxes in peripheral areas; yet the person to whom it mattered to know where exactly places were was the merchant, not the magistrate. By incorporating county peripheries into larger marketing systems, commerce in the sixteenth century strove to put all places on the map, not just those that enjoyed administrative status. The county-level grid system thus may be thought of as responding to this mapping by furnishing a method that made all places in a county equally knowable.

On the basis of this reasoning I would argue that although Ye Chunji's cartography was certainly devised to make administration more effective, it came into being because it was organizing knowledge in a world that commerce was rapidly remaking. If the method did not become the dominant way of drawing maps in county gazetteers, it was because of the privilege that conventions associated with administrative knowledge enjoyed. Only with the elevation of economic knowledge in the nineteenth century would the grid system be revived, and then superseded, in the pursuit of ever greater precision.

NOTES

1. Huang Liu-hung [Huang Liuhong], *A Complete Book concerning Happiness and Benevolence*, trans. Djang Chu (Tucson: University of Arizona Press, 1984), p. 129.
2. Ye Chunji was born in 1532 in Guishan County, not much more than three hundred kilometers west of Huian, and won his provincial-graduate degree at the age of twenty. He continued to study for the *jinshi* degree, but without success. For submitting a thirty-thousand-word memorial on contemporary problems to the Longqing emperor on his ascension to the throne, Ye was awarded the post of county school instructor of Minqing County, Fujian, in 1568. He was promoted to the magistracy of Huian in 1570 or 1571, held the post for three years, then was forced to retire from public office. He returned

to official life in 1591, first as a subprefectural magistrate, then as a vice prefect, then as a bureau director in the Ministry of Revenue. He died in office in 1595. Ye Chunji, *Huian zhengshu* (hereafter abbreviated as *HAZS*) (*Shidong wenji* edn., 1672), Guo's preface, p. 2a; Ye's preface, p. 1a; *Guishan xianzhi* (1783) 10, p. 13a, 14, pp. 8b–9a; *Quanzhou fuzhi* (1763) 27, p. 61a. Although Ye was a conscientious official, his career was modest and he is not noticed in either the *Ming shi* or the *Dictionary of Ming Biography.*

3. Timothy Brook, "Native Identity under Alien Rule: Local Gazetteers of the Yuan Dynasty," forthcoming in "The Uses of Literacy, 1200–1330," ed. Richard Britnell (London: Boydell and Brewer).
4. Timothy Brook, *Geographical Sources of Ming-Qing History* (Ann Arbor: Center for Chinese Studies, University of Michigan, 1988), pp. 50–53.
5. *HAZS* 1, p. 13a; 2, p. 1b.
6. Ibid., Ye's preface, p. 1b.
7. Ibid. 2, p. 1a.
8. *HAZS* was reprinted in facsimile as volume 1286 of the Wenyuange Siku Quanshu series (Taibei: Shangwu Yinshuguan, 1983). It has been published in a modern edition by the Quanzhou Historical Research Association (Fuzhou: Fujian Renmin Chubanshe, 1987); the edition is based on a Tōyō Bunko copy obtained by Fu Yiling in 1980.
9. Ogawa Takuji, *Shina rekishi chiri kenkyū* (Tokyo: Kōbundō, 1940), pp. 26, 41.
10. Wei Qingyuan, *Mingdai huangce zhidu* (Beijing: Zhonghua Shuju, 1961), p. 74.
11. Ogawa, *Shina rekishi chiri kenkyū*, pp. 48, 51. The history of the grid system is outlined in Joseph Needham, *Science and Civilisation in China*, vol. 3 (Cambridge: Cambridge University Press, 1959), pp. 539–556.
12. Ogawa, *Shina rekishi chiri kenkyū*, pp. 59–62; Stanley Huang, "Lo Hung-hsien," *Dictionary of Ming Biography*, ed. Carrington Goodrich and Chaoying Fang (New York: Columbia University Press, 1976), p. 982; Wolfgang Franke, *An Introduction to the Sources of Ming History* (Kuala Lumpur: University of Malaya Press, 1968), 8.1.3.
13. *Guishan xianzhi* (1783 edn.) 14, p. 8b.
14. Luo wrote a colophon to *Jiubian tulun*; see his *Nian'an wenji* (Siku quanshu edn.) 10, p. 25b. Regarding *Jiubian tulun*, see Franke, *Introduction to the Sources of Ming History*, 7.3.7. This book continued to influence atlases published after Luo Hongxian; see, e.g., Huo Ji, *Jiubian tushuo* (1569), p. 2a.
15. The author is Li Mo (js. 1521); according to his biography in *Ouning xianzhi* (1693 edn.) 8, p. 17b, his *Yudi tu* "circulated among his generation."
16. *HAZS*, Guo's preface, p. 6a. Guo Zaoqing was a friend of Luo Hongxian. He argues for the feasibility of Ye's approach by observing that Luo himself was capable of such precision, as he realized when he saw the genealogy Luo compiled for his family, which Guo says contains detailed diagrams for the performance of family rites. Luo compiled the genealogy in 1548; see his *Nian'an wenji* 5, p. 19b.
17. *HAZS*, Ye's preface, p. 2a.
18. Ibid. 1, p. 12b; Ye names five of his assistants; see also 4, p. 5b.

19. Timothy Brook, "The Spatial Structure of Ming Local Administration," *Late Imperial China* 6.1 (June 1985), p. 16.
20. *HAZS* 1, pp. 1a–b.
21. Although the original thirty-four townships of Huian had been reduced by amalgamation to twenty-seven, the old township numbering system continued to be used. The four maps of the amalgamated townships (for Townships #3–4, 11–13, 14–17, and 19–20) show the original township boundaries (*HAZS* 4, p. 28b; 6, pp. 2b, 10b, 21b).
22. Ibid. 1, p. 17b.
23. Ibid., pp. 2a–b.
24. Ibid., Ye's preface, p. 3b.
25. It is difficult to verify his population data. He observes that the county population records were completely out of touch with the actual households, and that household status and composition had been much manipulated over the years (*HAZS* 2, pp. 1b–2a). Compared to the 1530 county gazetteer, Ye's household figures are lower by about 8 percent, and his population totals lower by over 25 percent. See *HAZS* 4, pp. 3b–4a; *Huian xianzhi* (1530 edn.) 6, pp. 2b–3a. The problem is discussed in Yamane Yukio, "Jūroka seiki Chūgoku ni okeru kokō tōkei ni tsuite: Fukken Keian-ken no baai," *Tōyō daigaku kiyō* 6 (1954), pp. 161–172.
26. *HAZS* 4, p. 5b.
27. *Huian xianzhi* (1530 edn.) 3, pp. 3a ff. On the other hand, mountains, when they are located, are located by township.
28. *HAZS* 1, p. 15a. Regarding discrepancies among the gazetteers with regard to the location of mountains, rivers, and township boundaries, see ibid., pp. 13a–b, 15a–b, 16b.
29. *Huian xianzhi* (1530 edn.) 3, p. 11a.
30. *HAZS* 1, p. 16b.
31. See, e.g., the postface to *Tianxia lucheng tuyin*, a 1626 route book in an early Qing edition, as reproduced in *Tianxia shuilu lucheng*, ed. Yang Zhengtai (Taiyuan: Shanxi Renmin Chubanshe, 1992), p. 513.
32. Luo Hongxian was an advocate of organizing these types of institutions to reconstruct local solidarity; for his views on the rural covenant system, see his *Nian'an wenji* 6, pp. 6a–7b.
33. *Hai Rui ji* (Beijing: Zhonghua Shuju, 1962), pp. 36–201.
34. Huang Liu-hung, *A Complete Book concerning Happiness and Benevolence*, p. 617.
35. *Quanzhou fuzhi* (1763 edn.) 31, p. 35b.
36. *Guishan xianzhi* (1783 edn.) 14, p. 9a. In this biography, the title of the Zhaoqing gazetteer is given as *Duanzhou zhi*, Duanzhou being the literary (pre-Ming) designation for Zhaoqing. All three gazetteers are extant in China; see *Zhongguo difangzhi lianhe mulu* (Beijing: Zhonghua Shuju, 1983), pp. 685, 695, 709. It is worth noting that Luo Hongxian was an enthusiastic supporter of gazetteer publication; two gazetteer prefaces he wrote are collected in *Nian'an wenji* 11, pp. 23a, 33b.
37. Ye compiled no more gazetteers after returning to official life in 1591. His one

post-gazetteer publication was a comprehensive record of commercial levies on goods coming into Beijing, entitled *Chongwen jueshu* (Customs records of Chongwen Gate). It is mentioned in *Guishan xianzhi* (1783 edn.) 14, p. 9a, but appears to be no longer extant.

38. Bangbo Hu, "Maps in the *Gazetteer of Yung-an County (Yung-an hsien-chih)*," *Gest Library Journal* 6.1 (Spring 1993), pp. 85–100. Having not seen a copy of *Huian zhengshu* when he wrote his article, Hu has drawn conclusions — such as that the Yongan gazetteer is "the earliest extant gazetteer in which all of the maps were made by using a grid" (p. 87) — that need to be revised. Also, his elaborate attempt to prove Luo's influence on Ye (pp. 96–97), though entirely correct, is now perhaps unnecessary.
39. *Zengcheng xianzhi* (1820 edn.) 1, pp. 1b–3a; *Dianbai xianzhi* (1825 edn.) 1, pp. 1b, 5b; *Xining xianzhi* (1830 edn.), *shou*, pp. 1b, 8b–27a; *Xinhui xianzhi* (1841 edn.) 1, pp. 1b, 9b–37a. The scales vary from one to thirteen *li* per square; the last two include township as well as county maps. For an early example from Shansi Province, see *Taiyuan xianzhi* (1826 edn.), *tu*, p. 2a.
40. *Fujian tongzhi* (1871 edn.); *Haiyan xianzhi* (1876 edn.), *shou*, pp. 5b–11b; *Xiaofeng xianzhi* (1877 edn.) 1, pp. 2b–8a; *Shangyu xianzhi* (1891).
41. *Jiangdu xian xuzhi* (1883 edn.), *shou*, pp. 12b–16b; *Jingzhou fuzhi* (1880 edn.), *yutu*, pp. 1b–11a; *Dean fuzhi* (1888 edn.), *tu*, pp. 1b–16b.
42. *Panyu xianzhi* (1871 edn.) 2, pp. 1b–12b; *Zhaoqing fuzhi* (1876 edn.), *shou*, pp. 1b–31a.
43. The only reference to earlier applications of the grid system in these gazetteers is to Hu Wei, *Yugong zhuizhi* (1705) and Gu Zuyu, *Dushi fangyu jiyao*, in *Jingzhou fuzhi* (1880 edn.), *fanli*, p. 2a.
44. *Tongxiang xianzhi* (1887 edn.) 1, pp. 33–41.

GLOSSARY

ancha fensi 按察分司
Aozhen 鰲震
Banji kao 版籍考
bao 堡
baojia 保甲
biao 表
biying 必盈
buzheng fensi 布政分司
Chaotian 朝天
cheng 城
chenghuang miao 城隍廟
chi 尺
Chun'an xian zhengshi 淳安縣政事
cun 村
da guanlu 大宮路
dai 埭
Dengyong 登庸
Dili kao 地理考
du 都
dun 墩

fangce 方策
fuguan 府館
Guangdong 廣東
Guangyu tu 廣輿圖
Guo Zaoqing 郭造卿
Hai Rui 海瑞
Hongwu 洪武
Huang Liuhong 黃六鴻
Huian 惠安
Huian xianzhi 惠安縣志
Huian zhengshu 惠安政書
Huizhou 惠州
Jia Dan 賈耽
Jiajing 嘉靖
Jiangxi 江西
jie 界
jili huafang zhi fa 計里畫方之法
Jintian (yi) 錦田(驛)
Jiubian tulun 九邊圖論
juren 舉人
Leshan 樂山
li 里
Li 李
lijia 里甲
lishe 里社
Longjin xi 龍津溪
Longqiu gou 龍湫溝
lu 路
Luo Hongxian 羅洪先
meifang yili 每方一里
meifang zhe di baili 每方折地百里
Pei Xiu 裴秀
pu 鋪
qiao 橋
Qingquan 慶泉
Quanzhou 泉州
Quanzhou fuzhi 泉州府志
ruxue 儒學
shan 山
shepu 射圃
shexue 社學
Shidong 石洞
Shidong wenji 石洞文集
Shilian dong 石蓮洞
shui 水
Shunde 順德
Shunde xianzhi 順德縣志
Sichuan 四川
tan 壇
ting 亭
Tonghui 通惠
Tongxiang 桐鄉
tu 圖
tuji 圖記
Tuji wen 圖籍問
tujing 圖經
tuzhi 圖志
Wang Yangming 王陽明
xiangyue 鄉約
xianqian (pu) 縣前(鋪)
Xu Lun 許論
Xuange 絃歌
yangji yuan 養濟院
Yangkang (xi) 洋畈(溪)
Yanshou 延壽
Ye Chunji 葉春及

yizhong 義塚
Yongan 永安
Yongan xianzhi 永安縣志
Yudi tu 輿地圖
Yudi tuxu 輿地圖敘
Yuji tu 禹跡圖
yulin tuce 魚鱗圖冊
Zengcheng 增城
zhai 寨
Zhang Yue 張岳
Zhaoqing 肇慶
Zhaoqing fuzhi 肇慶府志
Zhejiang 浙江
zhengshu 政書
Zhu Siben 朱思本