

ANCIENT CHINESE MAPS

Two maps discovered in a Han Dynasty tomb from the second century B.C.

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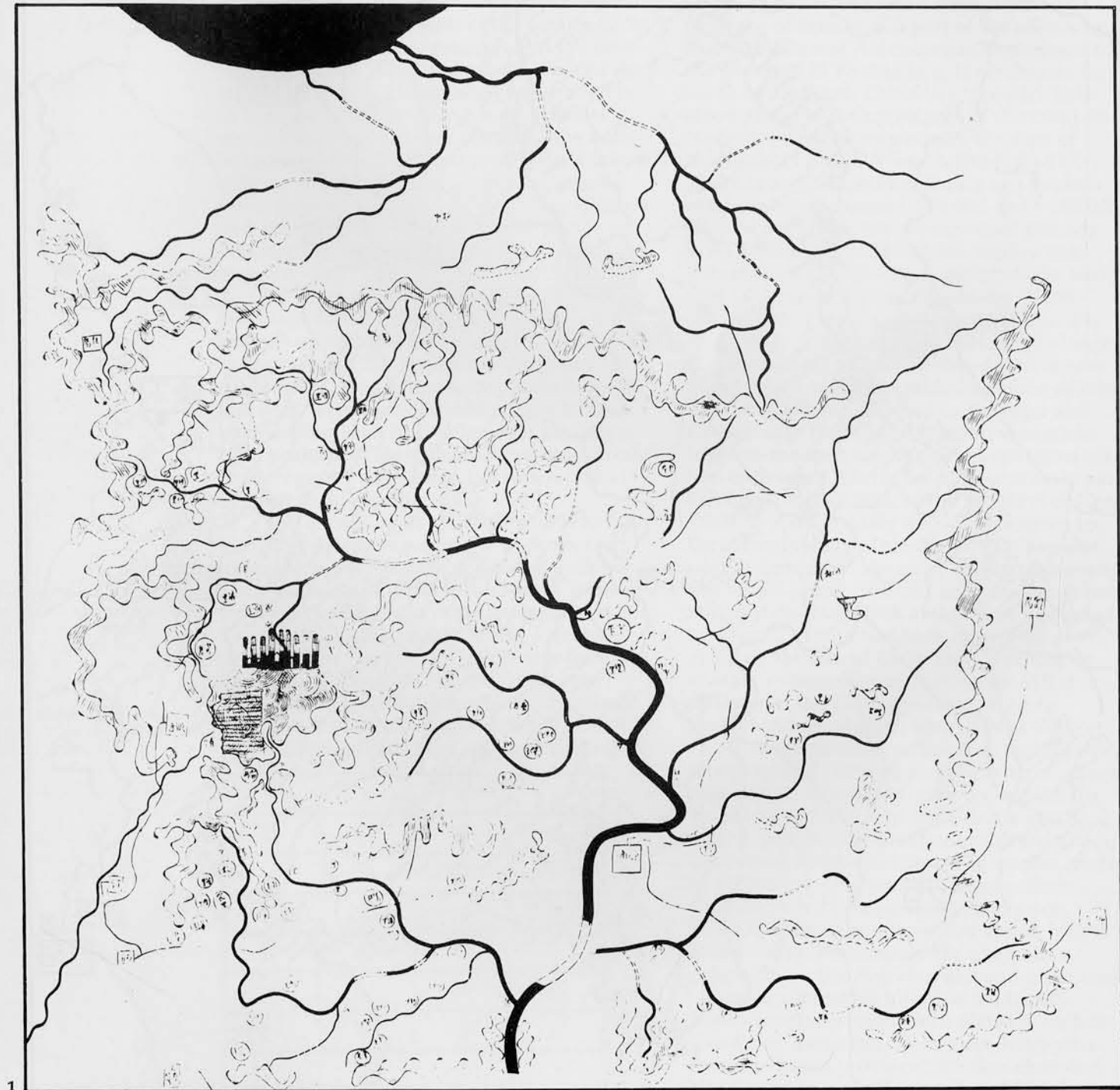
Among the many important excavations carried out in recent years in the People's Republic of China three tombs deserve special studies. They were discovered 5 km. east of Ch'ang-sha in Ma-wang-tui in the province of Hunan. Best known in the West is tomb No. I, excavated in 1971, because it contained the well preserved body of a lady and a wealth of textiles, including a painting on silk—the so-called "Guide of the Soul Banner"—lacquer objects, pottery wares, wooden figurines, baskets with food and so forth.⁽¹⁾ Two other tombs very close to it were excavated in 1973/74.⁽²⁾ Unfortunately, the first of the two (tomb No. II) was in a poor state of preservation, containing only some imperishable materials such as lacquer objects, pottery wares, stone figurines and, even more important, some seals proving beyond doubt that this was the tomb of Li Tsang, Marquis of Tai, who had been appointed Prime Minister by the king of Ch'ang-sha in 193 B.C. and who had died in 186 B.C. Tomb III was that of his son who had died in 168 B.C. The available evidence proves that tomb No. I was that of his wife who must have died not long after her son's death.

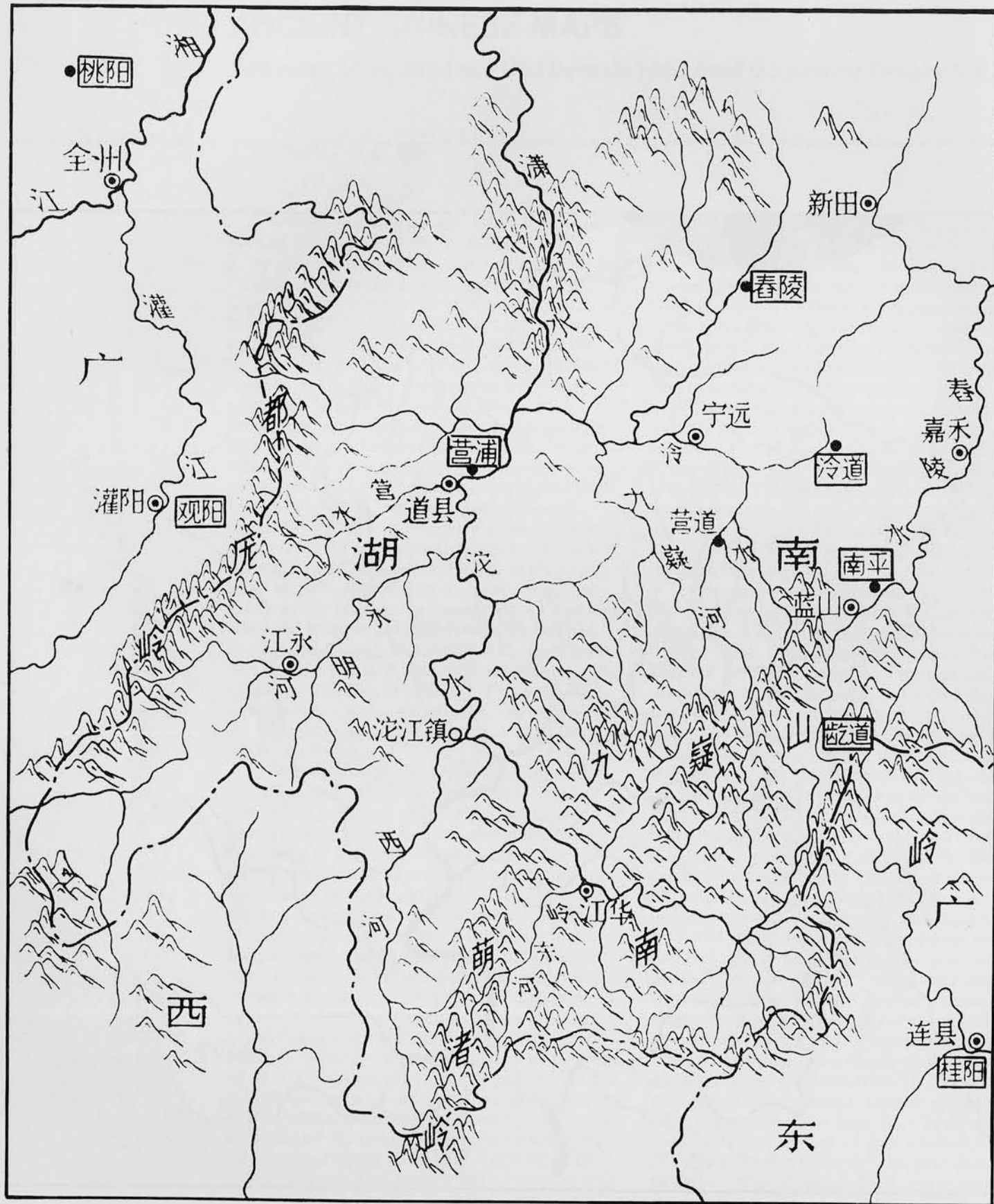
Although water had seeped into tomb No. III it still contained materials of even greater importance to posterity than those found in that of his mother, although nothing remained of his body except a few bones which allow us to draw the conclusion that the master of the tomb had died in his early thirties. In addition to materials resembling those found in his mother's tomb, such as lacquer wares and pottery, a "Guide of the Soul Banner" (textiles mostly disintegrated), wooden figures and food, it also contained typical male objects such as a man's hat, a stand for arrows and a variety of weapons. Most surprising was the discovery of pictures of processions and cavalcades painted on silk which had been covering the walls of the outer coffin (coffin chamber). In recent years, books, or sections of books, written on bamboo slips or wooden boards have been discovered in other Western Han tombs, yet in number and

importance none surpass those found in tomb No. III. Some were written on bamboo slips, some on wooden boards, and some on silk. All of them provide material for a wide range of studies, especially those texts presumed lost since early times. These writings cover wide fields from Taoist Legalist philosophy, astrology, divinations and medicine to the evaluation of horses and other subjects. It is to be hoped that this new material will be used not only by scholars in China but also by Western scholars. For all those interested in calligraphy and dating, a study of the script of that time will be especially important because it reflects the transition from the ancient seal script to the li-script which was introduced by Ch'in Shih Huang-ti shortly before the establishment of the Han dynasty.

Among the most important finds in tomb No. III were two maps which are the earliest maps found in China and perhaps the earliest in the world. Their great significance lies in the fact that they are in part surprisingly accurate and detailed and show that the art of cartography was well advanced at this time. Although the use of maps is mentioned in Chinese ancient literature long before the beginning of the Han period, the question when maps were first made in China has not yet been solved. Some writers in the West⁽³⁾ believe it to have started in the 3rd century B.C. This, however, is much too late; there are references to the use of maps in the literature of the 7th and 6th centuries B.C. For instance, in the *Book of Documents (Shu-ching)* it is reported that a survey of a particular region had been made to decide on the most suitable place for a new capital;⁽⁴⁾ also, the *Kuan-tzu* contains fragments of a chapter on maps⁽⁵⁾ stressing their importance for the conduct of war. Strategists, Sun Tzu in his *ping-fa (Art of War)* and others, repeat again and again that maps containing information on rivers, roads, mountains, hills, forests, passes and populations are vital for warfare. Sun Tzu's remarks that the measurement of space has to be derived from the ground⁽⁶⁾ suggest that the design of maps depended on actual surveys of

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Map I. *China Pictorial*
No. 9, 1975, pp. 34-35.





the land. There is ample evidence that, at least towards the end of the Chou period, maps were prepared for administrative purposes. In the *Chou-li* a department for cartography is mentioned. It apparently contained maps of the entire country with information on the situation and size of kingdoms, populations (tribes living in certain areas), products, grains, metals, trade, trees and so forth.⁽⁷⁾ Even some maps of countries bordering China are mentioned. The production of maps containing so many different types of information presupposes the existence of well-defined and standardized types of legends. The importance attached to maps is well demonstrated in a story in the *Shih-chi*. After the conquest of Hsien-yang, the capital of the former Ch'in dynasty, Hsiao Ho, a companion of the later first emperor of the Han dynasty, went to the storehouses and, disregarding other objects of loot, gathered all the maps and official records that had belonged to the Ch'in ministries and stored them away. They contained data on strategic points of defense, populations, relative strength of the various districts and the ills and grievances of the people—information of great value to the future emperor.⁽⁸⁾

All these maps have been lost. Thus the two maps found in tomb III in Ma-wang-tui provide us with the first examples of the art of cartography at the beginning of the 2nd century B.C. Both maps were painted on silk and both were found folded up in a lacquer box. Having been buried for over two thousand years, the folded sections were so firmly stuck together as to make the separation a difficult and hazardous task.

The unfolding of map I caused it to fall into 32 pieces, some sections were severely damaged, especially the edges had suffered from the seepage of water and some parts of its design were almost completely blotted out. The folding of the map followed a definite system shown in Fig. 3. First, it was folded over in half, the lower part covering the upper, then it was folded again and again in half. Later, the folding proceeded from left to right. After reassembling, the map measured

4	3	2	5
27	28	29	26
20	19	18	21
11	12	13	10
8	15	14	9
23	16	17	22
24	31	30	25
7	32	1	6

96 x 96 cm.⁽⁹⁾

In both maps, in conformity with Chinese ancient cosmological views, south is above and north below. This is based on the orbit of the sun which reaches its highest point at the time of the summer solstice in the southern part of the sky. It was believed to travel in the subterranean region during the night, reaching its most northerly point at the time of the winter solstice. Thus, east on the maps is on the left side and west on the right. (In order to identify features on this map with those on modern maps, it is advisable to turn them upside down).

Map I is chiefly a topographical map covering the southern part of what is now the province of Hunan and part of the adjoining Kwangsi Chuang Autonomous Region and of the province of Kwangtung. It reaches as far south as the South China Sea (the dark half-moon shape in the upper part of the map). In modern terms the map covers the area of longitude 111-112.30° and latitude 23-26°. There is no scale but according to a modern estimate it is between 1:170,000 and 1:190,000. On modern maps, the area covered extends from a little east of Hsin-t'ien county to a little west of Chuan-chou county all the way south to just below the Hsi-chiang (West River). The accuracy of the map differs; it is excellent in all parts which formerly belonged to the kingdom of Ch'ang-sha—what is now the province of Hunan including some adjoining districts now enclosed in Kwangsi and Kwangtung. This suggests that it was made from on-the-spot surveys. The uppermost section of the map, that is the most southerly part, belonged, at that time, to the kingdom of Nan Yüeh. It was certainly much less known to the cartographers of the king of Ch'ang-sha who had prepared the map. This explains why it is out of proportion and contains much less information. Nan Yüeh at that time was ruled by Chao T'o, who had been appointed previously by the son of Ch'in Shih Huang-ti as military commander of that region. After the collapse of the Ch'in dynasty, he made himself independent as king of Nan Yüeh.

The information on the map includes topographical features and a wealth of names of counties, mountains, rivers, residential areas and so forth. The legends are standardized, that is, the names of counties are placed in squares, residential names in circles, names of tributary rivers are written near their confluence with larger rivers, and so on. The ancient names of counties are no longer in use today. Fortunately the chapter on geography in the *Hou Han-shu* and other contemporary literature allow us to identify some counties with modern districts such as Tao-hsien, Lan-shan, Hsin-t'ien, Ning-yüan (now in Hunan province), Ch'üan-chou and Kuan-yang (now in Kwangsi) and Lien-hsien

2 Modern map of part of the region shown on Map I. North is at the top. *China Pictorial* No. 9, 1975, p. 37.

3 Table showing folding of Map I. Wen-wu, No. 2, 1975, p. 35.

(now in Kwangtung). For example, Tao-yang on the map is now Ch'üan-chou. It belonged at that time to the kingdom of Ch'ang-sha; during Wu Ti's time its name was changed to Ch'üan-chou. Over fifty residential places are marked on the map by name. Some of them were apparently cities but even more were villages; however, in no case is there any information on their size.

Different types of lines were used for roads and rivers, roads being drawn in rather thin lines. The map shows that important places were connected by roads; about twenty can still be discerned. Even more important than roads as means of transportation in the mountainous area in this part of Hunan and along its southern border are the rivers. Over thirty rivers are shown on this map, the thickness of lines not only reflecting their importance but also the direction of their flow with the lines increasing in thickness as the rivers gain in size. The modern name of the main river dominating the lower part of the map is the Hsiao, a tributary of the famous Hsiang River which it joins further in the north. Among the many rivers on this map flowing into the Hsiao River are the T'o, Fêng and Chun Rivers. The rivers in the upper part of the map are the Hsi-chiang (West River) and the Chu (Pearl River) known to all who visited Canton. It is believed that the capital of Nan Yüeh was situated not far from Canton.

Irregular double wavy lines on this map indicate mountain ranges. The major mountain ranges in this region are the Nan-ling mountains, a range which covers the whole of southern Hunan and adjoining regions. The parallel wavy line running along the right hand border must represent the Ta-pêng-ling mountain range which follows the border of Hunan and Kwangsi. The use of this type of legend for mountain ranges is extremely interesting and shows the close connection with motifs used in art. In fact, wavy lines or chevrons are an age-old symbol for mountain ranges. In the Han period on TLV and other mirrors they symbolize cosmic mountains supposed to surround the universe where heaven and earth meet. (TLV mirrors are so called because the design on their backs resembles the letters, T, L, V, which are thought to have cosmological significance.) But even long before, in the art of the Chou and Shang periods, wavy lines and chevrons (sometimes double lines representing mountains on both sides of a river and road), or triangles were used as standardized signs for mountains and mountain ranges. As I have pointed out, even farther back such motifs have been used on some neolithic painted pottery.⁽¹⁰⁾ Though as motifs in art all of them probably symbolize cosmic or cloud mountains, there is no reason to believe that similar

signs were not used for practical purposes such as indicating a passage through a mountainous region. In China the primitive beginning of maps may thus go back to prehistoric times.

On the left side of map I is a cluster of mountains, a peculiar fish-scale-like composition. There is no name for this mountain complex, but two characters "Shun Ti," Emperor Shun, are shown on the right side. This allows us to identify the mountains with the Chiu-i, the "Nine Doubts" mountains. They are believed to have been the burial place of Shun, a famous legendary emperor, supposed to have ruled in the later part of the third millennium B.C. Once upon a time, according to the *Shui-ching*, the "Water Classic," a temple stood there and a tablet recorded that this was the place where Shun had been buried. The Chiu-i mountains rise high (1600 meters) above the other mountains in the region, and they have inspired legends and poets from early times on. They are often mentioned in the *Ch'u Tzu*, the songs of the Kingdom of Ch'u, and *Ssu-ma Hsiang-ju*, in the second century B.C., in his *Ta-jen-fu*, "the fu of the Great Man," describes a visionary visit to Emperor Shun on the Chiu-i mountain. The nine columns at the side indicate the varying heights of the nine peaks of these mountains. Another inscription along the river tells us that the source of the Shen River lies in this mountain complex.

In contrast to the accuracy and the many details on the part of the map rendering the territory ruled by the king of Ch'ang-sha the uppermost section, the regions ruled by the king of Nan Yüeh, contains far less information and the fact that they are wrong in scale lets us assume that they were not based upon on-the-spot measurements but on oral reports. Best known seem to have been the river systems, probably due to their use in trade. However, two characters in the empty space on the upper part of the map read *Fêng-chung*. *Fêng*, as will be shown on the other map, is used for watchtowers such as are often built on frontiers or perhaps on some exposed place. The second word means "middle" and thus this watchtower may have been known to stand somewhere in the middle on the frontier of either country.

Although map I is a topographical map which could have been prepared for purely administrative purposes, the inclusion of the adjoining parts of the kingdom of Nan Yüeh suggests that it was used in a war which began before the death of the Master of tomb III in 168 B.C. Map II is designed solely for the defense against attacks by the king of Nan Yüeh. This war is reported in one sentence in the *Chien Han-shu*.⁽¹¹⁾ Accordingly, in October 181 B.C. the state of Nan Yüeh invaded and pillaged the kingdom of

Ch'ang-sha. (The Empress Dowager) sent the Marquis of Lung-lu (Chou Tsao) with troops to attack the invader.

The *Shih-chi* contains more information on this war. Apparently, the troops sent out by the empress never reached Ch'ang-sha because of the difficulties of the terrain and excessive heat. That means that the king of Ch'ang-sha had to organize the defense of his country without outside help. The "story of Lu Chia" in the "Account of the Southern Yüeh" in the *Shih-chi*⁽¹²⁾ provides us with the background of this war. In 196 B.C. Lu Chia had been sent as ambassador by the first emperor of the Han Dynasty to Chao T'o, the king of Nan Yüeh, and had been able to persuade the reluctant king to give up his independence, at least nominally, and become a vassal of the Han emperor. However, after the death of Kao tsu, Chao T'o again asserted his independence, calling himself Emperor of Nan Yüeh, and tried to extend his domination over neighboring countries. When Empress Yü interfered with trade to Nan Yüeh he interpreted that as due to slander by the king of Ch'ang-sha and used it as a pretext to invade his country.

In map II we are given a clear and detailed picture of the organization for the defense of Ch'ang-sha. This map was found folded into 28 sections in much the same manner as map I. The size of the reconstructed map was 96 x 78 cm. The area shown is a section of map I. Its scale is about double that of map I, approximately 1:100,000. It corresponds to what on modern Chinese maps is the Hsiao River basin and the Chiang-hu Yao Autonomous Region.

Written on the top of map II on the right side is *Nan* "South," and on the left *Tung* "East." Thus it follows the well-established type of the four directions with south above and north below. Colors are used on this map, some places are enclosed by black and red lines, others by only red or black. Rivers are painted blue.

The mountains on map II are again part of the Ling-nan and the Ta-pêng ling mountain ranges. There are slight differences in the use of legends on the two maps. Although wavy lines are still used for mountain ranges, they are now single lines and each mountain top is adorned with fish-scale-like clover motifs and there is a decorative ending to each line, a design familiar to all who have studied the art of the Warring States and early Han time. In the valleys on the other side of the wavy line are spike-like signs, and thus the wavy line resembles an endless repetition of the character *shan* "mountain." Eight names of mountains are inscribed next to peaks. On this map, about 20 rivers are shown in blue color and names have been added to 13 of them. Again, the most important one is the

Hsiao River, formerly called Shen. On this map, as on map I, the winding of the rivers is shown fairly accurately; they are a considerable help in the identification of localities on modern maps.

The large rectangle with indented corners represents the actual defense area. Within this area are eight small irregular rectangles outlined in red and black. All of them represent encampments of the army; their sizes vary in accordance with their importance and the number of troops stationed in them. The inscription inside each camp gives the name of the commanding officer and his title. For example, in camps Nos. 1, 2, 3, 4, the inscription reads *Hsü Tu-wei chün* "Army of Chief-Commander Hsü." The three camps on the southern border (Nos. 1, 2, 3) were certainly the most important ones because the enemy was most likely to attack from the south. They are thus the first line of defense. It may likewise be of importance that Nos. 1, 2 and 3 correspond to three roads (or passes), today's Sun-tzu kuan, Kuan-yang kuan and Pai-shih kuan.

The other important line of defense is represented in encampments Nos. 5 and 6, which are those of Commander Chou (Chou Tu-wei chün), and further down on the eastern border, Nos. 7 and 8, those of *Ssü-ma Tê*, (no title is added). Just outside the defense area is another, rather small, army encampment (No. 9) under the command of Chu Yang. The large number of encampments on the eastern side is due to the possibility of attacks from the east, the border region with Kwangsi. The triangle in the middle of the defense (No. 10) is again outlined in black and red. This, however, is not a temporary camp but a walled fortress with five towers of different sizes and three platforms (Fig. 4). The entrance is through the gate of the tower on the right-hand side. Inside is written "arrow path," and outside the southern wall an inscription reads "double path," probably referring to a two-storied pathway, the lower one allowing an unobserved entry or leaving of the fortress (perhaps running underground). The thin zig-zag line running parallel to it indicates an underground water channel connecting the fortress with the river on that side. On the other side of the fortress is a lightly shaded sack-like formation (No. 10A) which, according to the inscription, is a pool, guaranteeing a sufficient water supply in times of peace and war.

The fortress and the encampments are connected by a network of roads (the pointed lines), although the rivers serve again as major means of transportation of troops and supplies.

This is made evident by a number of triangles (Nos. 11, 12, 13) which, according to the inscriptions, are storage areas for



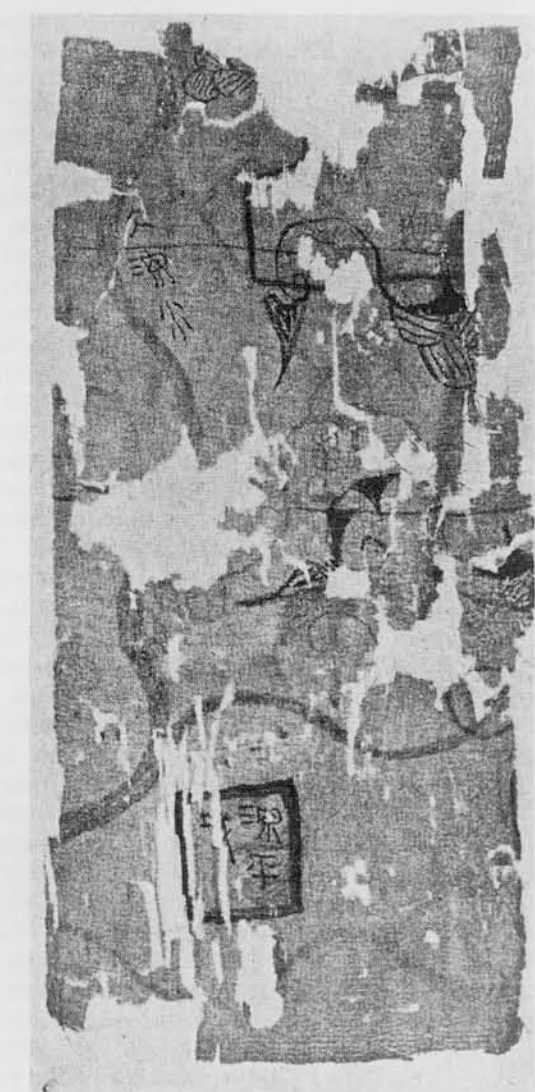
military equipment and other supplies needed for an army. The difference in the number of triangles placed together is again indicative of their storage capacities. It is important to note that they are situated on the route from Shen-ping city (No. 14) to the fortress. Supplies could thus easily be transported on the River Shen which passes by the city and flows near the storage area (Fig. 5).

Dark triangles along the defense line are described as fêng. They are watchtowers, similar to those built along the Great Wall. They served as observation and signal towers. Fires were lighted on them in cases of imminent danger. Three stand on the southern side of the defense line (Nos. 15, 16, 17), three on the eastern side (Nos. 18, 19, 20), and one on the northern side (No. 21); none,

4 Photograph of part of Map II. At the upper right corner is the fortress (No. 10 on Fig. 7). The circles are painted either red or black.

5 Photograph of detail of Map II. The large square is the city of Shen-ping (No. 14 on Fig. 7).

6 Table showing folding of Map II. *Wen-wu*, No. 1, 1976, p. 18.



26	3	10	19	18	11	2
23	6	7	22	15	14	27
24	5	8	21	16	13	28
25	4	9	20	17	12	1

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however, on the western side, which was not endangered. Close below the one on the northern side is a small square described as *chang* (No. 22), which in this case must mean a special area used by the army. It may have contained barracks; a similar area (No. 23) adjoins the encampment of Ssū-ma Tê. This may mean that these were places reserved for the army even before the on-going war.

According to their importance for the army, residential places are shown either in red and black, or in thin red or black circles. Their number shows that this area must once have been quite a populated region. Inscriptions not only give the names of the places but they also tell us about the tragic consequences of war. Next to the name of some places we read "35 families, all moved away," "25 families all moved out and none came back" or even "108 families, none back," or often just two characters "now nobody." The frequency of such inscriptions shows that at the time of this war the civilian population had nearly all left. In some cases the distance between two places is given, information certainly of importance to armies.

The map shows that the organization of the defense was based on an excellent and well thought-out plan. The fact that weapons and these two maps were found in the tomb of the young Marquis of Tai indicates that he had been a soldier and, most probably, had taken part in this campaign. The war started about 12/13 years before his death but in the course of fighting he might have been appointed to a high position, perhaps above the commanders mentioned on the map, or it is even possible that the drawing up and organization of the defense was his work. All this would be ample reason for placing the maps in his tomb as signs of his merit, his superior qualities.

Notes

1 Literature in English on tomb I in Ma-wang-tui: e.g., Fong Chow, "Ma-wang-tui, a Treasure Trove from the Western Han Period," *Artibus Asiae* XXXV:1/2, pp. 5-23; "How the Ancient Chinese Buried a Matron of Means," *National Geographic* 145:5, May 1974, pp. 665-681; A Gutkind Bulling, "The Guide of the Souls Picture in the Western Han Tomb in Ma-wang-tui near Ch'ang-sha," *Oriental Art, New Series* XX:2, Summer 1974, pp. 158-173. In Chinese journals a great number of articles have been published dealing with various aspects of this tomb. Now a magnificent report on tomb No. I has been published in China in two volumes, *Ch'ang-sha Ma-wang-tui i hao Han mu*,

with numerous pictures in color and many drawings; the text volume contains research and information on the tomb and its objects.

2 Except for one article in *China Pictorial* No. 11, 1974 on tombs Nos. II and III and one article in *China Pictorial* No. 9, 1974, about Map I. "A Summary of some recent *Wenwu* and *Kaogu* articles on Mawangtui tombs Two and Three" by Jeffrey K. Riegel was published in *Early China* No. 1, Fall 1975, pp. 10-15. All other articles dealing with these two tombs are published in Chinese journals such as *Wen-wu*, *K'ao-ku*, and *K'ao-ku xuebao*. However, an all inclusive report on these two tombs is being prepared in China.

3 e. g., Ssu-yü Têng, Knight Biggerstaff, *An Annotated Bibliography of Selected Chinese Reference Works*, third edition, Harvard University Press, p. 158, 1971.

4 Translated by James Legge, *Sacred Books of the East* III:1, The Shū King, p. 189.

5 Translated by W. Allyn Rickett, Kuan tzu, Hong Kong University Press, pp. 232-235, 1965.

6 Translated by Samuel B. Griffith, Sun tzu, *The Art of War*, p. 88, 1963.

7 Translated by Edouard Biot, *Le Tcheou-li*, Tome II, Chapter XXXIII, pp. 263 ff., Paris, 1851.

8 Translated by Burton Watson, *Records of the Great Historian*, translated from the *Shihchi* of Ssu-ma Ch'ien, Vol. I, "The Hereditary House of Prime Minister Hsiao (Shih-chi 53)", pp. 125-126, Columbia University Press, 1961.

9 This report is based primarily on articles published in *Wen-wu* No. 2, 1975, "Report on the ancient maps found in the Han tomb No. III in Ma-wang-tui, Ch'ang-sha, by the Study group for Han silk manuscripts from Ma-wang-tui, pp. 35-42; and "A map of more than 2000 years ago" by the Geographical Department of Fu-tan University, T'an Chi-hsian, pp. 43-48, and *Wen-wu* No. 1, 1976, "Some information on the ancient maps in Ma-wang-tui tomb and some seals of the Han period" by Chou Shih-sung, pp. 28-32; "Notes on the Military map found in the Han tomb No. 3 at Ma-wang-tui" by Ts'an Li-po, pp. 24-35.

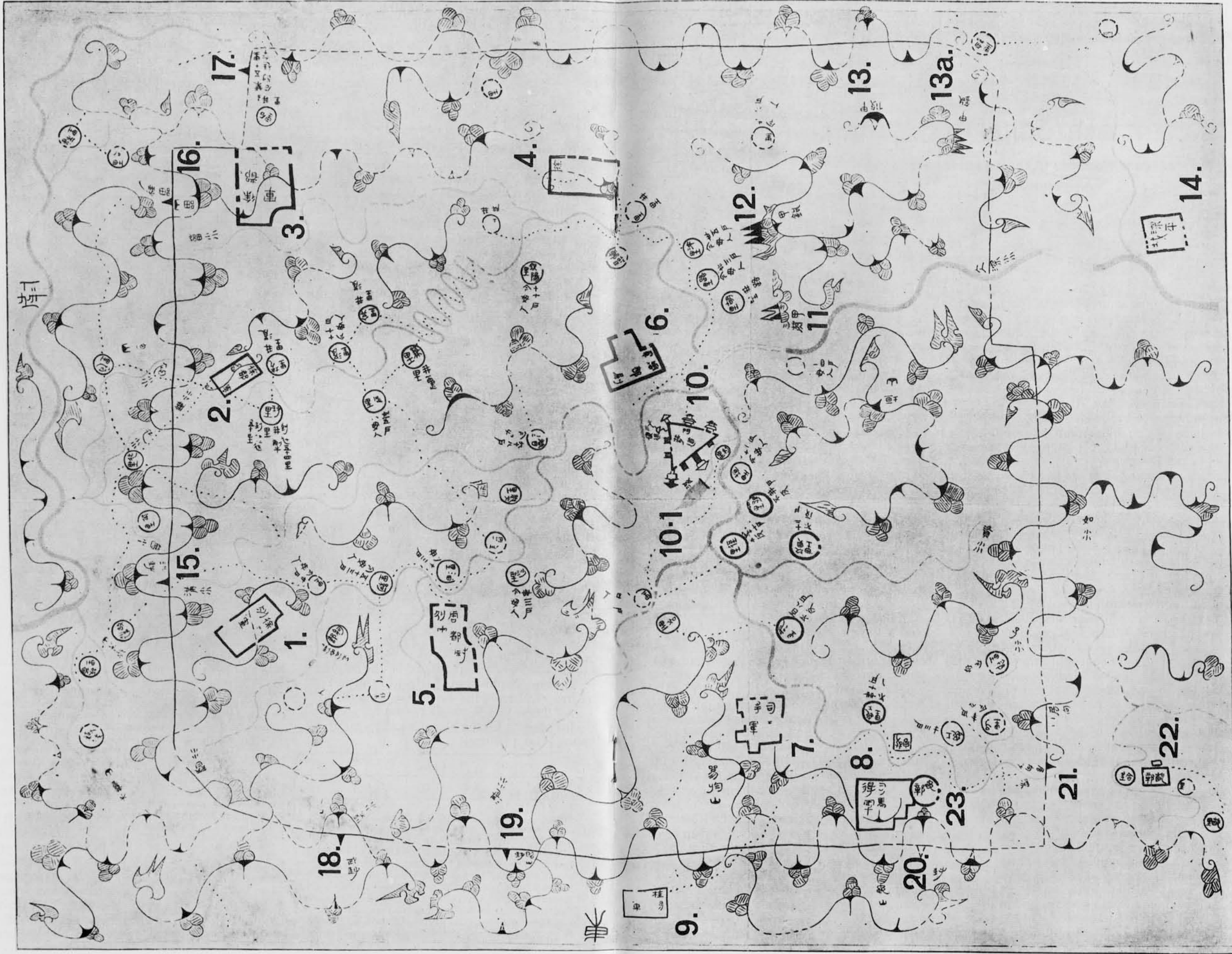
10 A. Bulling, *The Meaning of China's Most Ancient Art*, An interpretation of pottery patterns from Kansu (Ma-ch'ang and Pan-shan) and their development in the Shang, Chou and Han periods, Leiden, Brill, 1953, Chapter Three, Triangles, pp. 57-68.

11 Translated by Homer H. Dubs, *The History of the Former Han Dynasty*, Baltimore, Waverly Press, 1938, Vol. I, p. 200.

12 Burton Watson, op. cit., Vol. II, "The Account of the Southern Yüeh" (Shih-chi 89) pp. 239-251.



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7 Map II. Wen-wu, No. 1.
1976, p. 31.