

## **Monuments in the mountains: The megalithic graves of western China**

**Abstract:** While the megaliths of Europe are world-famous and the dolmens of Korea, Japan, and Northeast China have received much scholarly attention, few have heard of the stone-built graves of western China. Even scholars interested in stone graves in this region tend to focus on the small stone-cist graves located underground which are common throughout much of the Chinese border region. This paper draws attention to the largely overlooked above-ground grave structures made of large stones that can be found chiefly in Southwest China. These megalithic graves are peculiar in many ways, both within East Asia and in comparison to megalithic structures found world-wide. Other parts of East Asia (Northeast China, Korea, Japan, and parts of the southeastern Chinese coast) are characterized by dolmens, but dolmens do not appear in Southwest China. Here, structures that could be described as passage graves, barrows, and constructions similar to the Celtic *cistvaens* can be found. Cistvaen-like structures appear in various places on and along the eastern rim of the Tibetan Plateau, but the larger structures seem to be limited to the Anning River Valley and the surrounding mountains of southern Sichuan and northern Yunnan. This paper will briefly introduce the stone-built graves of western China and then focus on the only megalithic structures that can be found in the region, the megalithic graves of Southwest China. This region is extremely mountainous with lush greenery obstructing views of the monuments. The paper considers the distribution of the graves in relation to their natural environment and to each other, both spatially and in terms of usage patterns, suggesting possible connections as well as differences between them.

**Keywords:** *megaliths, human-environment interaction, East Asia, Southwest China, Liangshan*

## 1. Introduction

While the megaliths of Europe are world-famous and the dolmens of Korea, Japan, and Northeast China have received much attention, few have heard of the stone-built graves of western China. This is partly because nearly all relevant publications are in Chinese, and partly because archaeologists working in China – both local and foreign – tend to concentrate on the Central Plains or the northern border regions, so much less research is conducted in Southwest China where these monuments are found. Even scholars working on graves in Southwest China tend to concentrate on the much more ubiquitous stone-cists that show clear connections in both burial form and grave goods with archaeological finds throughout much of the frontier areas of modern-day China (Figs. 1 and 2) (Tong 1987; Hein 2014b). Remarkably, the megalithic graves of Southwest China seem to be a relatively contained phenomenon, occurring only in the north-south lying Anning River Valley and its tributaries in the Liangshan Region, Sichuan Province, on the eastern rim of the Tibetan Plateau. The object assemblages show very little connection with archaeological cultures in the Sichuan Basin, let alone those of

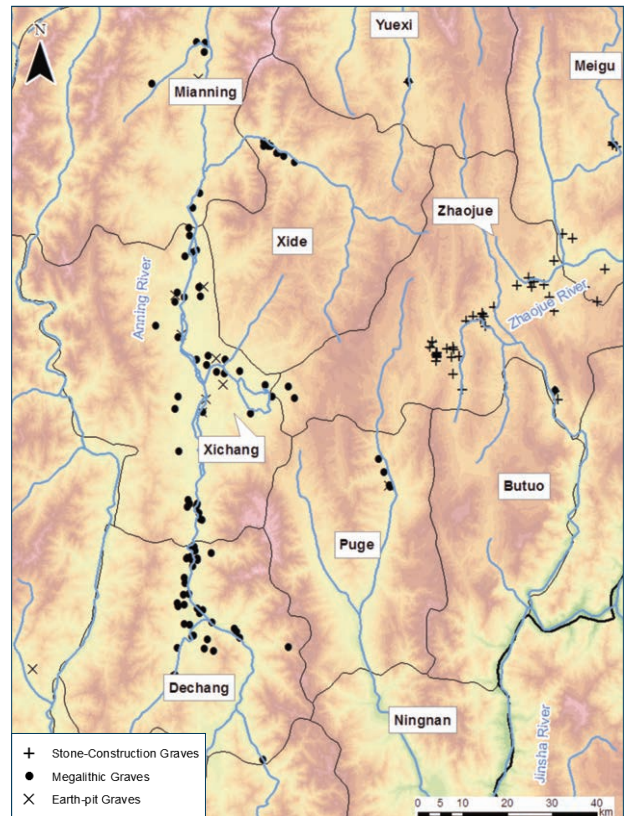


Fig. 2 – Graves in the Anning River Valley by type.

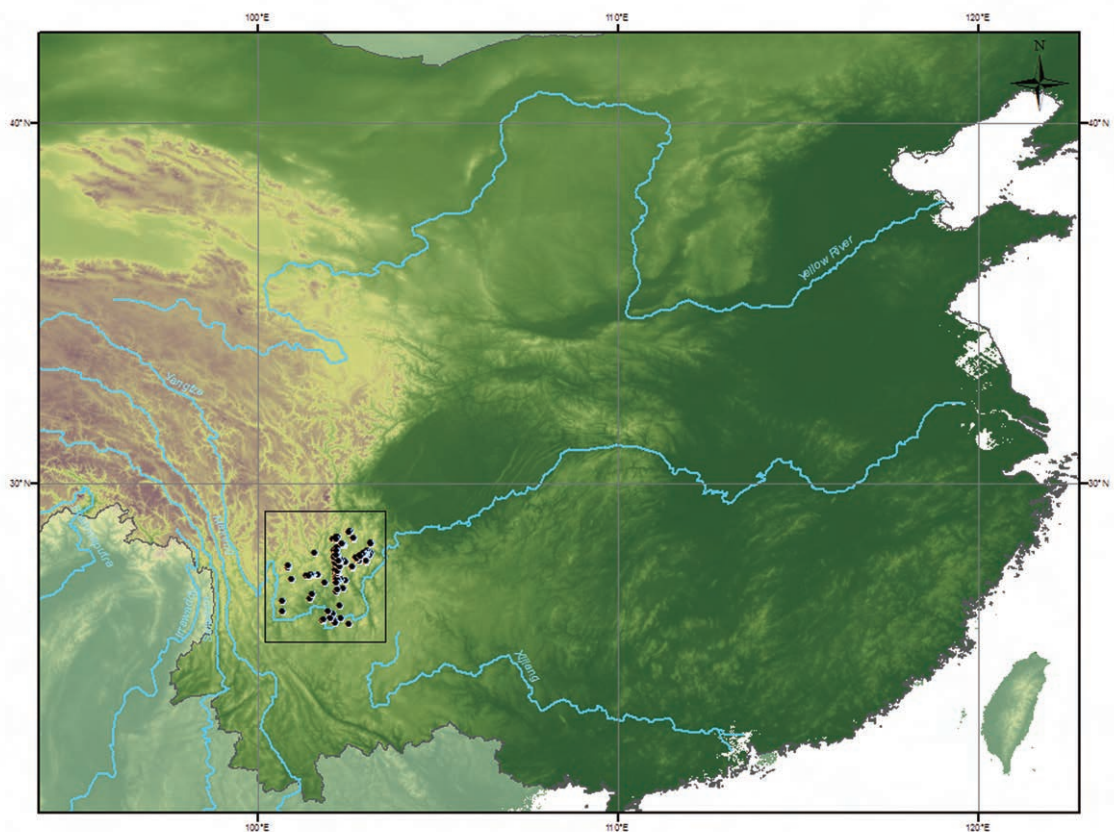


Fig. 1 – Overview map of the research area and its location within China.

the Central Plains of China which, being seen as the cradle of ‘Chinese civilization’, has received a disproportionate amount of scholarly attention. While archaeological assemblages from other parts of Southwest China show clear signs of interaction with areas occupied by the early dynasties of Shang (ca. 1600-1046 BC) and Zhou (ca. 1045-249 BC), it is only in Qin (221-206 BC) and Han periods (202 BC-220 AD) that evidence for eastern connections can be seen in the Anning River Valley. The megalithic graves seem to be particularly resistant to outside influence, only occasionally containing knives suggesting a steppe influence or – in the case of the most recent megalithic graves – a few coins of Han origin (Hein 2014a). It is only with the Han expansion into Southwest China that we see a major shift in material culture, including the arrival of Han-style ceramics and brick graves (see e.g., Hein 2017a; Wu *et al.* 2019), eventually leading to a discontinuation of the local tradition of megalithic graves. There have been attempts to include the region in historical narratives based on texts written by and for people in the heartland of Han China, mainly by trying to connect the megalithic graves to the Qiongzhusi mentioned in the *Hanshu*, *The Book of Han*, compiled in the 1st century AD (Sichuansheng & Anninghe 1976: 330), or suggesting the existence of a custom among the Qiang of venerating large stones, Qiang being an exonym for a wide range of groups in Southwest China mentioned in the *Hou Hanshu*, *The Book of the Later Han*, written in around AD 445 (e.g., Shen 1982; see Wang 1992 and 1998 for a discussion of the Qiang). Trying to forge a connection between later texts written in a completely different part of China (by people who most likely never set foot into Sichuan) and much earlier megalithic structures that are not even mentioned in these texts is obviously problematic and has been criticized (e.g., Hein 2013). At the same time, the inevitable failure to integrate the megalithic graves of Southwest China into the larger narrative of Chinese archaeology and pre- and early history has meant that they have been overlooked despite their impressive size. Through this paper we hope to draw attention to them and introduce them to a larger audience.

## 2. History of research

The scholarly world has been aware of the existence of stone-built graves in western China since the explorations of Feng Hanji in 1928 (Xu 1958: 58). Excavations on small below-ground stone-cist graves in Northwest China commenced soon after, and this type of grave has since seen a significant amount of research. Fieldwork in the mountains of Southwest China commenced significantly later. The 1970s saw the first systematic survey of the home of the megalithic graves, the Anning River Valley, and adjoining regions. This survey revealed a broad range of feature and site types but until the mid-1980s, scholars focused on the most eye-catching type of monuments: megalithic graves.

A first survey of megalithic graves was published in 1958 (Xu 1958), but the first excavation took place only in 1975, at Mianning Sanfentun, marking the beginning of a very active period of research on megalithic tombs. The particularly well-preserved graves of Xichang Bahe Baozi were the first to be published in preliminary excavation reports (Sichuansheng & Anninghe 1976). These reports coined the term *dashimu* (megalithic graves), which has been used in all subsequent publications. This was also the first time that a date range for the graves was estimated, from the late Warring States period (475-221 BC) to the early Western Han period (206 BC-AD 9).

During the late 1970s and early 1980s, over 40 megalithic graves were excavated, the most remarkable of which, Lizhou Chenyuancun and Lizhou Zhongxue, both overlie earlier earth-pit graves and settlement remains, thus contributing to discussions on local relative chronology. Other sites also saw the excavation of earth-pit graves. Archaeologists have also reported different kinds of graves with stone installations, either termed *shiguanzang*, literally ‘stone coffin burials’, but usually translated as ‘stone-cist graves’ in English publications, or *shibanzang* or *shibanmu*, ‘stone slate burials’ or ‘stone slate graves’ (Hein 2013: 5-7).

During what might be termed the second phase of archaeological research in the Liangshan region, the focus shifted from the megalithic graves to other

kinds of burial sites<sup>(1)</sup>. This new phase commenced with the Survey of Cultural Relics of the Liangshan Prefecture conducted from March 1987 to August 1988. After this, very few excavations of megalithic graves were conducted, mainly because due to the size of the monuments as such projects were cumbersome and time-consuming, and in most cases revealed only a very small number of objects. During the following decades, excavations were generally rare, but several surveys were conducted, revealing many graves with different kinds of stone installations in the mountains east and west of the Anning River Valley. Several scholars have developed typologies of these graves, but without taking earth-pit graves or megalithic graves into consideration (e.g., Song 2004).

Since the late 1990s, most scholars have focused on settlement material in order to develop a local chronological framework. A major issue in this endeavour is that the sites tend to be single-phased and thin-layered while graves rarely cut into each other or superimpose earlier sites. Only a small number of multiphase sites exist in the region and very few radiocarbon dates are available. The assignment of most relative and absolute dates thus relies on typological comparison with objects from well-dated sites elsewhere, most importantly Yunnan, the Sichuan Basin, the Central Plains, and the northern steppe. Over the years, several chronological frameworks have been suggested but they have remained rather general and none has been widely accepted (e.g., Jiang 2007). I recently conducted a study of all graves in the Liangshan region, including a fine-resolution analysis of the typological structure of the megalithic graves, and developed the most detailed chronological framework for the Liangshan region to date (Hein 2017a). This framework is applied in the present discussion.

### 3. State of knowledge

In 2014, field research on megalithic graves was brought to a preliminary conclusion with a five-month survey of the Anning River Valley, recording locations, measurements, and the state of preserva-

tion of all known megalithic graves. Six megalithic graves were excavated: four at Dechang Arong and two at Xichang Wanao (Sichuansheng *et al.* 2006a). Previous excavations, most conducted in the 1980s, had been rather quick in removing objects and bones without recording their placement or details of grave construction. In 2004, however, the excavators carefully recorded deposition layers, item locations and construction details, greatly advancing our understanding of the construction and use-life of the graves.

Furthermore, all objects connected with previously excavated megalithic graves were re-cataloged, drawn, photographed, and published. The resulting volume, somewhat misleadingly entitled *The Megalithic Graves along the Anninghe River* (as it also includes graves from the mountains further east) summarizes the current state of field research on these remains (Sichuansheng *et al.* 2006b). The volume unfortunately lacks detailed maps and GPS points. Such data was, however, captured during the most recent Third Nation-Wide Cultural Relics Survey, from June 2007 to December 2010. That survey also revealed that many sites present in the Liangshan region in 2004 had since been destroyed. Hence the results of the First and Second Nation-Wide Cultural Relics Surveys, although less detailed, remain an invaluable source of information for estimates of the original distribution of megalithic graves. In my 2017 publication on the graves of the Liangshan region, I also included unpublished excavation documentation generously provided by colleagues in Sichuan and Yunnan, relating to original objects studied, and I incorporated location data and measurements into a geodatabase covering all known pre-Han (i.e., pre-AD 220) sites (Hein 2017b).

There are 305 known megalithic graves from 112 sites. The amount and type of available information varies widely by site and grave depending on preservation conditions and previous research and state of publication. For most of the graves excavated in the 1980s there are only preliminary reports; the original excavation documentation has been lost. Furthermore, preservation conditions vary widely; no tumulus remained entirely intact and, in many

(1) For a detailed description of the history of research in the Liangshan region, consult Hein 2013: 5-17 and Tab. 1.1.

cases, some of the stones had been removed. This unevenness in preservation, field research, and reporting is taken into consideration in my 2017 publication where I developed a reliability index based on state of preservation, fieldwork, and publications, evaluating each grave on that scale. The results form the basis of this paper (Hein 2017b).

### 3.1 The graves

#### *Grave construction*

External measurements and orientation are recorded for nearly all the 305 known megalithic graves but only 55 have been excavated, so all information regarding internal organization, contents and dates

is limited to these very few graves. The average size of the grave chambers is 9.0 × 2.7 × 1.6 m but length measurements vary widely from 1.0 to 41.0 m (Fig. 3). Most graves are rectangular but a few are particularly long and narrow, square, or even trapezoidal.

All megalithic graves are constructed above ground from various types of igneous rock (Fig. 4). The grave floors consist of levelled soil, sometimes with a layer of pebbles or, more rarely, with stone slabs. The graves have stone walls, stone covers consisting of one or several large boulders, and sometimes additional external construction elements. The walls consist of large boulders, large slabs, or a combination of the two with small stones filling the gaps, with large boulders below and small stones above,

Excavated	Length	Width	Height	Proportions	Area	Volume
Mean	6.09	1.70	1.67	4.06	11.57	21.49
Median	6.20	1.30	1.73	3.75	8.76	12.92
Mode	8.40	1.00	2.00	6.08	8.76	N/A
Standard deviation	2.82	0.94	0.58	1.99	12.53	31.26
Range	15.95	4.24	2.40	8.05	83.95	211.80
Minimum	1.05	0.76	0.40	1.05	1.05	0.70
Maximum	17.00	5.00	2.80	9.10	85.00	212.50
Count	55	54	52	54	54	51
Unexcavated	Length	Width	Height	Proportions	Area	Volume
Mean	9.47	3.00	1.54	3.06	28.33	49.17
Median	8.60	3.00	1.40	2.90	24.30	35.53
Mode	11.00	3.00	2.00	3.33	24.00	160.00
Standard deviation	4.92	0.99	0.58	1.62	19.01	50.05
Range	39.98	4.65	3.15	15.77	106.24	298.07
Minimum	1.02	0.35	0.35	0.02	0.36	1.18
Maximum	41.00	5.00	3.50	15.77	106.60	299.25
Count	182	160	144	160	159	126

Fig. 3 – Grave measurements (in m).



**Fig. 4** – Megalithic grave at Daba Hongmiao (Photo: A. Hein).

several large boulders with many small cobbles in between, or small cobbles arranged in layers in a brick wall-like construction (**Fig. 5**; see also **Fig. 13**). Large slabs and boulders are usually set in a foundation ditch that secures them in place; only two graves had wall boulders placed directly on the levelled ground, secured with earth and small stones piled on both sides.

The smoother sides of slabs or boulders always faces inward, and in at least seven cases the stones were artificially smoothed on the inside. The walls of Zhaojue Qianjinshe M7 consist of one artificially smoothed, pale-coloured slab of igneous rock in the centre of each side surrounded by small irregular grey cobbles. For the brick wall-like constructions the chosen stones are carefully worked to shape the ‘bricks’; only rarely are the walls of such graves made of unworked cobbles. These graves very likely imitated the Han-style mud-brick graves common

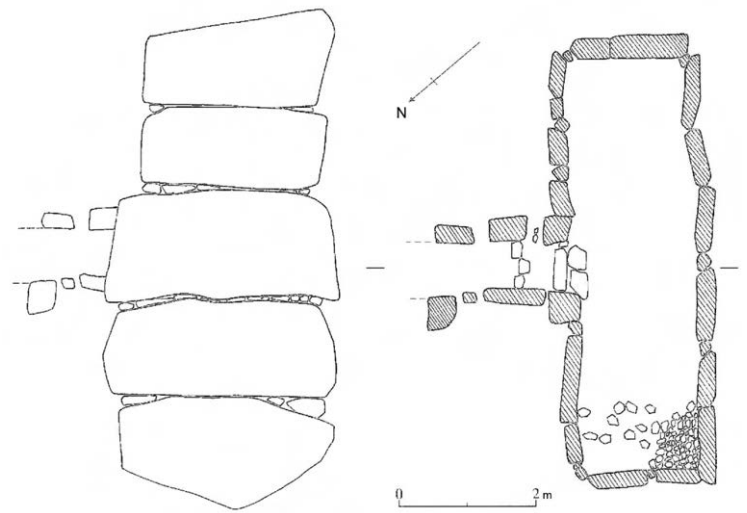


**Fig. 5** – a. Megalithic grave Wanao M1 ;  
b. Detail of wall construction of megalithic grave at Huangshui (Photos: A. Hein).

throughout large parts of China from early imperial times.

About one third of all known graves have an entrance consisting of stone slabs or irregular cobbles (Fig. 6). These are mostly located on one of the short sides of the structure; when on a long side, they are flanked by further stone slabs building a ‘doorway’ (Fig. 7).

A very small number of graves have internal construction features, for example, partitions separating a smaller front chamber from a larger rear chamber and, in one case at Xide Lake Sihe M1, a three-step staircase facilitating entrance into the grave (Liangshan 1978). Given that this particular grave also has an access ramp and a doorway, the staircase simply reemphasizes the intended accessibility. The function of the partitioning is less clear, but it



**Fig. 7** – Xide Lake Sihe M1 (Type 2.2.1.2) (After Sichuansheng et al. 2006b: Fig. 31).

Outside Installation Type	Count	Frequency
<b>Earth tumulus</b>		
Present	95	31.35%
None observed	964	68.65%
<b>Stone mound</b>		
Present	7	2.30%
None observed	1052	97.70%
<b>Access ramp</b>		
Present	35	11.55%
None observed	1024	88.45%
<b>Other external installations</b>		
Present	17	4.25%
None observed	1042	95.75%
<b>Types of other external installations</b>		
Ba-shaped arrangement of stone	8	2.64%
Doorway of erected stones	6	2.00%
Small stone assemblage close to door	3	1.00%

**Fig. 6** – External additions.

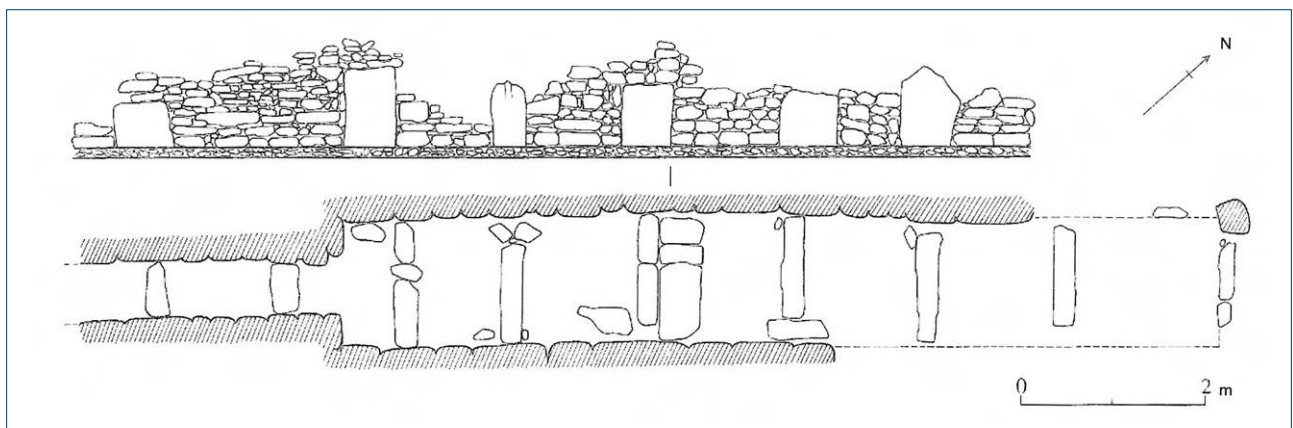


**Fig. 8** – Megalithic grave at Dayangdui (Photo: A. Hein).

appears only with particular grave types, potentially signifying a chronologically or spatially limited custom.

Some graves also show external features such as tumuli, ramps, ‘tails’, doorways, and various other stone arrangements (**Fig. 8**). All earthen tumuli are disturbed and some may have been completely destroyed. Those still extant at the time of reporting are round or oval, measure up to 40 m in diameter and up to 5.5 m in remaining height. Seven megalithic graves are covered with round or oval stone mounds consisting of irregular cobbles covered with a layer of soil. These were found at only two closely situated sites, indicating a short-lived local tradition.

Access ramps have been observed at several locations, and vary significantly in size (**Fig. 9**). Given the small number of cases and uneven preservation conditions, it is not possible to interpret the significance of the differences in length, but the ramps were most likely used during ritual proceedings surrounding the graves. All other external features are even less common. The trapezoidal constructions referred to as ‘*ba*-shaped’ (with reference to the Chinese character for the number eight) or ‘screen-shaped’, consist of one or several stones standing on either side of the grave and giving it a cross- or T-shape. The standing stones forming a doorway mentioned above can also be categorized as external features rather than essential construction elements.



**Fig. 9** – Xichang Xijiao Gongshe M1 (After Sichuansheng *et al.* 2006b: Fig. 25-26).

Piles of stones outside the grave are recorded but are rare and their function remains obscure.

Many of these features occur in combination. For instance, all graves with an access ramp have a clearly identifiable entrance suggesting that the ramp was used to approach the grave during burial ritual and/or post-burial activities. It is notable that all graves with a tumulus also have an entrance but not all have an access ramp, so the tumuli may have been erected only after the final closure of the grave. These graves were thus not meant to be re-accessed in perpetuity but only for a certain duration. Stone mounds tend to have ‘and in all of these cases the graves are set on a mountain slope, suggesting that the tail may have been used to roll stones downhill to the construction site (Fig. 10). Some of these graves tend to have large boulders on top that would be more easily slid into place using such a construction feature. Not all graves with particularly large cover stones are, however, set on a slope. Many are located on the open plain thus neither requiring nor allowing for a tail.

### ***Construction techniques and labour investment***

The graves were constructed by first levelling the ground, then sometimes digging a rectangular ditch to secure large stone slabs or boulders, and finally slotting the wall construction parts into place. Additional layers of fine soil and/or pebbles may have been added as ground cover either at this point or prior to erecting the wall slabs/boulders/cobbles and filling any holes with smaller stones and soil. Doorways were constructed before sliding any covering stones into place. Where required, access ramps and further external features would be constructed at this point. As discussed above, the so-called tails, i.e., soil beds clogging up the hill behind the graves, were most likely built to facilitate sliding the cover stone(s) into place. Similarly, the short path made of smooth pebbles observed at Dechang Arong may have been used to facilitate dragging stones towards the construction site.

The earthen tumuli consist of several layers of earth. In the case of Xichang Tianwangshan M10, 22 layers



**Fig. 10** – Megalithic grave Guadi M2 (Photo: A. Hein).

of about 20-25 cm thickness have been observed, compacted with round pestles of about 20 cm diameter that left impressions in the soil (Liangshan 1984). This rammed-earth technique is well known from wall constructions in other parts of China where the layer is thinner with much more strongly compressed layers made using smaller pestles (e.g., An 1993; Henan 2000). The cases known from the Chengdu Basin are, furthermore, considerably earlier in date, so it is difficult to tell whether the rammed earth of the Liangshan region was inspired by a rather crude understanding of the foreign technique or was an independent local development.

Regardless of the origin of the technique, constructing a tumulus would have required a major labour investment, especially for the largest graves measuring over 40 m in diameter and over 5.5 m in height. For the more sophisticated and thus more labor-intensive rammed-earth walls of Baodun in the Chengdu Plains, it has been suggested that one person could dig 3 m<sup>3</sup> soil, move 13.3 m<sup>3</sup> by 20 m, or compact 10.1 m<sup>3</sup>, averaging out to 1.97 m<sup>3</sup> per 8-hour work day (Chengdushi *et al.* 2000). It is unclear how many people were engaged in construction activities or how long they worked each day, so it is impossible to give a definite number of days or weeks. For the city walls of Baodun, the process would have taken months or years, but moving the amount of soil needed for the largest tumulus in the Liangshan Region could have been accomplished by 50 people in two to three weeks. Nevertheless, adding the tasks of preparing the location, choosing and transporting the stones, putting them in place, and conducting any necessary rituals, one or several communities must have been engaged in this enterprise over months if not longer.

### **Grave typology**

Various typologies have been developed, most focusing only on the external shape of the grave and disregarding internal features or questions of construction techniques or sequence. Taking a *chaîne opératoire* approach and using a key diagram, I suggest a new typology consisting of four main types and several sub-types (Figs. 11 to 14):

Type 1: graves with large boulders or slabs for walls and cover, with or without entrances (251 examples).

Type 2: graves with walls made of combination of large boulders, slabs and smaller stones with boulders as covers, with or without entrances on short or long side (22 examples).

Type 3: graves with brick wall-like stone walls, with boulders as covers (12 examples).

Type 4: small graves with stone slab walls and covers (10 examples).

The large bouldered variety, Type 1, is by far the most common; Types 3 and 4 are rare. Type 4 graves are particularly small, often square rather than rectangular, and consist of thin slabs rather than boulders. This type is found only in the eastern mountains, as are the smaller varieties of Type 2, while the Anning River Valley is characterized by large rectangular graves, though other shapes also occur. Only the large graves of Types 1 and 2 are combined with stone mounds, adding to the already considerable labour investment necessary for their construction. They also tend to have access ramps showing continued use. Both factors reflect the considerable importance of these monuments for the groups who constructed and used them. Furthermore, it is clear that these graves were constructed in several stages and most likely used over extended periods <sup>(2)</sup>.

### **3.2 Grave location and cemeteries**

There is some variability in the location of megalithic graves. The majority are found on even ground, often in close proximity to a river; around one third are built on slopes. Surprisingly, in the northeast they are mostly built on the few patches of even ground in the river valleys. The majority of those built on slopes are found in the Anning River Valley, albeit in its narrower northern and southern reaches rather than in the wide flood plains. The small Type 4 and Type 3 graves are found almost exclusively in the northeast while Types 1 and 2 appear throughout most of the region, suggesting a chronological rather than regional distinction.

(2) For an overview of the individual graves, their construction and contents, consult Hein 2017b.

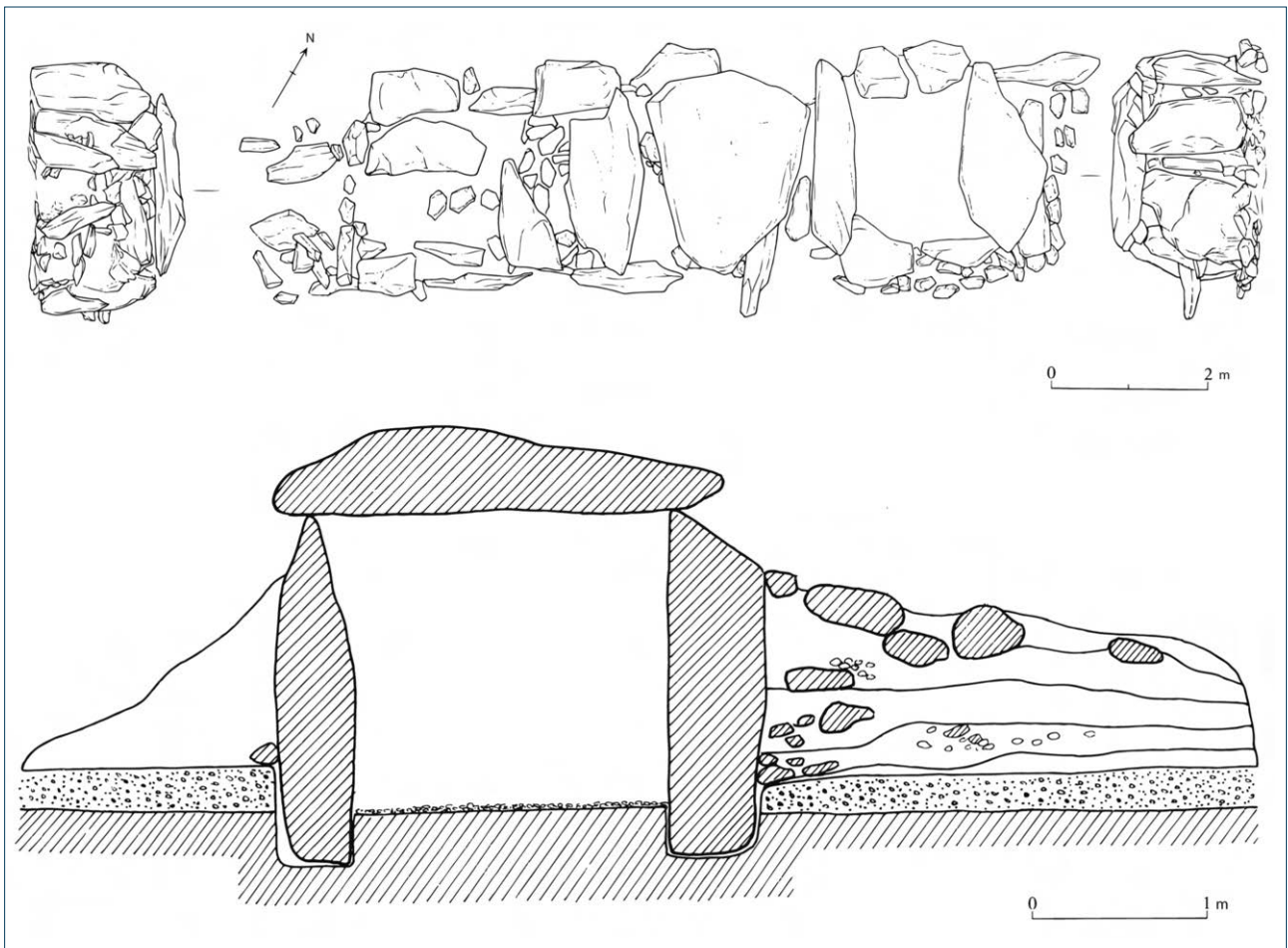


Fig. 11 – Type 1 megalithic grave Dechang Arong M4 (After Sichuansheng *et al.* 2006b: Fig. 12-13).

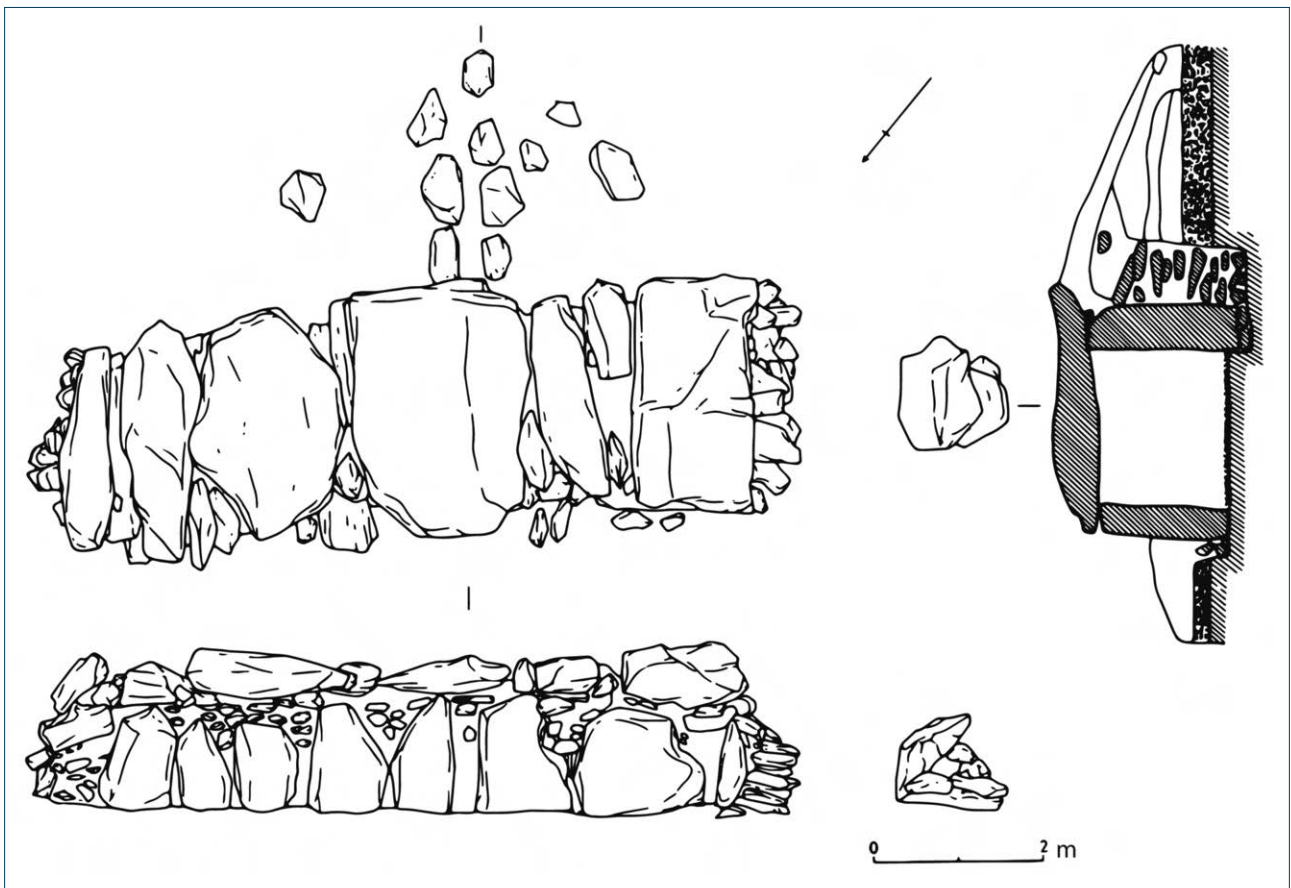


Fig. 12 – Type 2 megalithic grave Dechang Arong M3 (After Sichuansheng *et al.* 2006b: Fig. 28).

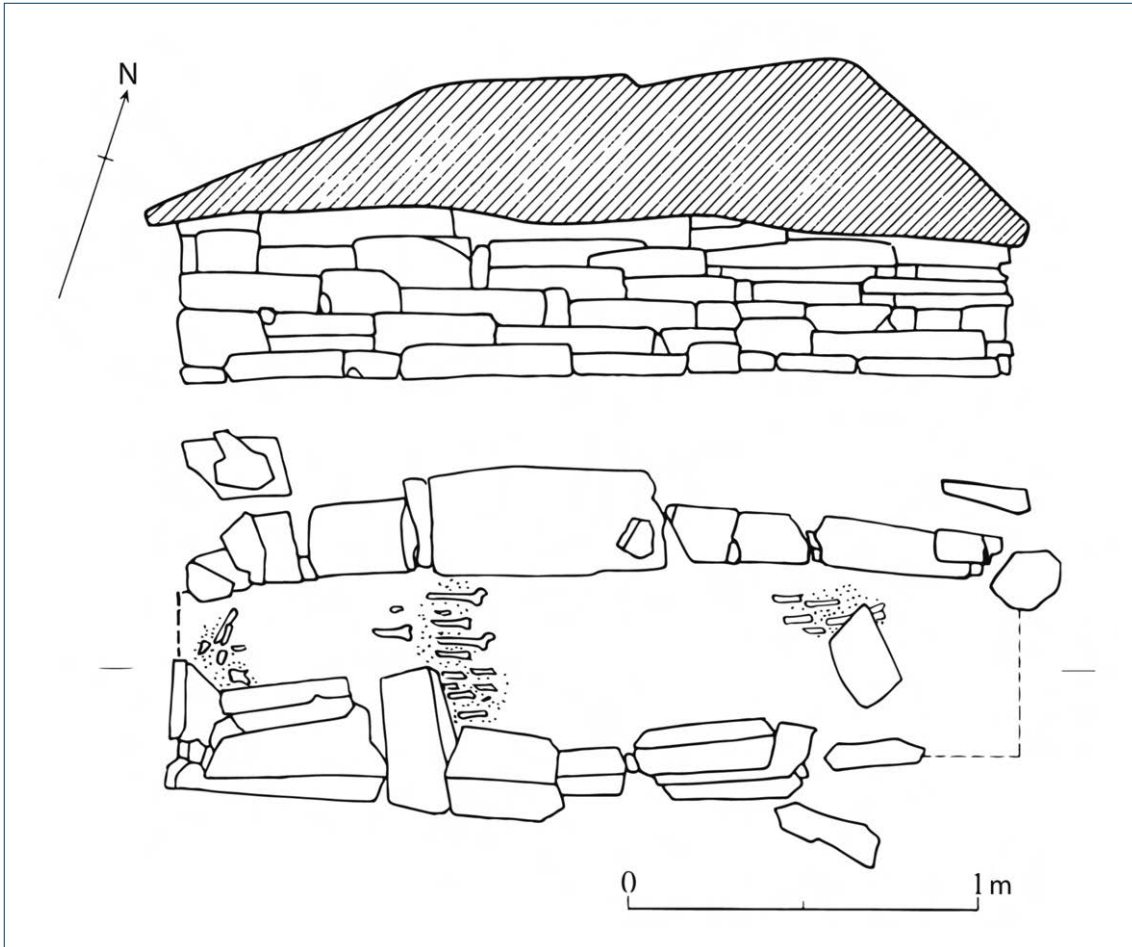


Fig. 13 – Type 3 megalithic grave Xichang Dayangdui DM1 (After Xichangshi *et al.* 2004: Fig. 22).

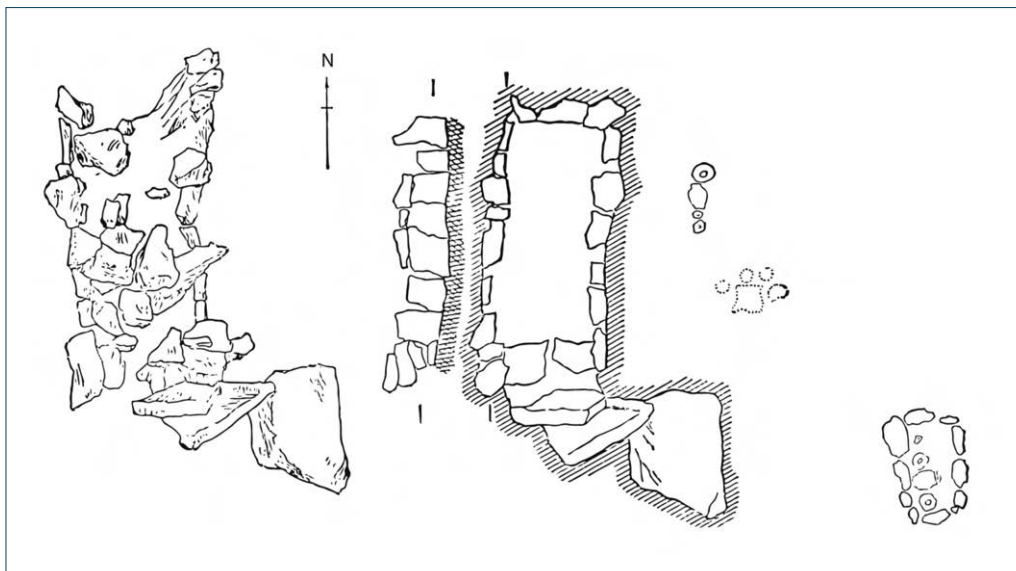


Fig. 14 – Type 4 megalithic grave Tianwangshan M10 (After Liangshan 1984: Fig. 1).

The graves built on slopes are usually oriented along the profile of the mountain or, more rarely, are exactly perpendicular, while those in the river valley tend to lie parallel to the rivers and mountain ranges. Given the size of these graves, one might assume that they were built with visibility in mind, however those built on mountain slopes cannot be seen from a distance, so this does not seem to have been a major concern. Nevertheless, they were built from large stones, though not as large as some of the graves built in open fields and river valleys which were – and still are – visible from a distance.

Megalithic graves occur either singly or in small groups of up to six graves, however, even those that are not part of a cemetery are usually no more than 2 km from other graves, forming a megalithic landscape with high intervisibility. Only two graves are in rather inaccessible places on mountain slopes, making them clear exceptions. In the central Anning River Valley, megalithic graves occurring close to each other tend to have a similar orientation, and at Xide Lake Sihe nearly all graves had their entrance facing the same direction. Given the amount of evidence for graves referencing each other, there may have been rituals and processions around and in between them, creating a ritual landscape.

### 3.3 The interred

A total of 35 graves contained human remains, varying from 1 to 125 individuals per grave, although in some cases the actual number of interments remains unclear due to poor preservation conditions. For 15 megalithic graves in the Anning River Valley, information is available on the age and sex

of the interred. In all but two cases, both male and female adult and senile individuals were present; in two graves there was also a single juvenile individual but infants do not appear. This form of burial thus seems to have been reserved for older individuals, and potentially for an even more limited sub-group of the population distinguished by more than just age. Other parts of the local population may have been interred in single-interment earth-pit graves dating to the same period, however the number of known earth-pit graves is far too small to account for the entire juvenile and young adult population that died before reaching advanced adulthood.

Among the 35 graves with known numbers of skeletons, we can distinguish between single and multiple (4-6 individuals) interments, group burials (9-12 individuals), mass interments (48-125 individuals), and graves containing several individuals though the exact number is unclear due to poor preservation or lack of documentation (Fig. 15).

Regarding types of interment, it is generally assumed that megalithic graves contained ‘secondary disorderly interments’, but the few excavation reports with detailed descriptions suggest that this may not be the case here. The grave site of Mianning Sankuaishi M1, for instance, contained 17 extended-supine primary burials, individually wrapped in cloths and piled on top of each other during successive instances of interment. For graves with poor preservation conditions or in the case of less careful excavation, such arrangements could easily be misinterpreted as secondary interments. The site of Xichang Xijiao Gongshe M1 bears evidence of a complex interment processes. The grave held 123 individuals, mostly found in heaps of disarticu-

Number interred	Count	Percentage
Single	3	8.6%
Multiple (4–6 skeletons)	5	14.3%
Group burial (9–20 skeletons)	9	25.7%
Mass interments (48–125)	7	20.0%
Several interments (unclear number)	11	31.4%
<i>Sum</i>	35	100.0%

Fig. 15 – The interred by number.

lated bones toward the rear of the grave, while a small number of complete skeletons were found immediately behind the entrance. Here, as in other graves, some of the bones were still directly associated with ornaments such as earrings or bracelets. This arrangement indicates that these remains were the result of several instances of interment during which the bones from previous episodes were pushed to the rear and ended up in disarticulated heaps. Other graves also show evidence for being re-entered and the bones neatly stacked at the rear. These examples can all be classified as disarranged primary burials but there are also a few graves containing only long bones and skulls, sometimes carefully sorted by type, suggesting true secondary interment. Additionally, there are rare cases of cremation (in an urn) or a combination of inhumation and cremation (with scattered ashes) (Fig. 16).

In terms of body treatment, the most common custom is the rearrangement and sometimes stacking or sorting of bones, but in rare cases, fire treatment or wrapping of the bodies has been observed. The wrapping and wooden stretchers reported in a few

cases may have been a common custom but that is difficult to determine (Fig. 17).

There are thus two main patterns of burial behaviour: single or small group primary and/or secondary interment without re-opening of the grave, and several instances of probable primary interment that required a reopening of the grave.

### 3.4 Traces of ritual acts

There are some signs of ritual activity in and around the graves, including evidence of burning inside the grave and the presence of object pits outside. In several graves, there are traces of burning of various substances, in most cases unknown materials, but in one case rice and in another, human bones and other objects. Additionally, there are scorch marks and ash throughout eight graves. The excavators interpret these as traces of the light sources that were brought into the graves during instances of re-opening and re-entering.

Deposits of ceramic vessels have been recorded outside only three graves but, as the areas around

Fig. 16 – Skeleton positions.

Number interred	Count	Percentage
Extended supine	1	2.9%
In urn	1	2.9%
Irregular placement	24	68.6%
Mostly piled in rear, some scattered	4	11.4%
Stacked in layers throughout grave	2	5.7%
Unclear	3	8.6%
<i>Sum</i>	<i>35</i>	<i>100.0%</i>

Fig. 17 – Interment types.

Interment type	Count	Percentage
Primary disarranged	13	37.1%
Secondary	3	8.6%
Inhumation + cremation	2	5.7%
Cremation	1	2.9%
Unknown	16	45.7%
<i>Sum</i>	<i>35</i>	<i>100.0%</i>

megalithic graves have not been surveyed systematically, it remains unclear whether this was part of a more general custom. In all cases, the ceramic vessels were complete without signs of intentional damage. The range of items suggests that they had been used in rituals involving food and/or drink consumed in connection with rituals during or after the burial or may have been dining/drinking sets for the deceased.

In several graves, there are clear signs of re-opening and re-entering; the presence of several distinct layers of skeletons, signs that the bones of previous interments had been pushed to the rear or crushed by the closing stones, and the neat stacking of some bones at the rear while one or more complete skeletons were present at the front. Re-opening does not, of course, mean complete re-entering, which would have been difficult in the case of graves measuring less than 1.4 m in height, especially those that were extremely long and narrow and presumably already filled with objects and decaying bodies.

There are thus different scenarios of grave usage. In connection with the first instance of interment, the grave chamber may or may not have been closed with a covering stone and/or a doorway and/or a tumulus with an access ramp leaving the way to the grave entrance free. Later, the grave may have been re-opened either to be re-entered to varying extents (potentially including a rearranging of bones and/or objects) or further bodies and objects may simply

have been pushed in without anyone physically entering the chamber. There may have been multiple instances of re-opening, re-entering and re-usage before the final closure of grave and tumulus. What happened in each case can be ascertained based on the following kinds of evidence:

- *accessibility* (grave height, length, width; presence/absence of a doorway; size of door closing stones; percentage of grave above ground; presence/absence of stairs);
- *content and internal organization* (bones or objects crushed under door; presence/absence of layers; objects and/or bones overlaying or crushing each other); and
- *bone findings* (interment type, skeleton position, number of skeletons, traces of rearrangement of the bones).

Based on these criteria, over 80% of all megalithic graves were most likely reopened<sup>(3)</sup>. The assemblages present must therefore be carefully scrutinized, as they may not be contemporary and should be treated separately by deposition layer if possible.

### 3.5 Object assemblages

The majority of graves contained objects but the number present varied widely from 1 to 199 and seven graves were entirely devoid of items (Figs. 18 and 19). The most common object types are ceramic

(3) For a breakdown of the various criteria and the calculations behind this assessment, consult Hein 2017b.

Number of objects	Number of graves
199	1
62–86	6
41–53	3
25–38	4
11–19	13
6–10	9
1–5	13
0	7
<i>All</i>	<i>55</i>

Fig. 18 – Number of objects per grave.

Object type	Count	Percentage
ceramics	484	40.43%
stone	86	7.18%
bronze	436	36.42%
iron	20	1.67%
bone	139	11.61%
other	32	2.67%
<i>Sum</i>	<i>1197</i>	<i>100.00%</i>

Fig. 19 – Frequency of different object types.

vessels (mostly jars of various sizes, jugs, and cups) and bronze objects, usually small personal ornaments such as bracelets, earrings, finger rings, chains, pendants, and clothing ornaments such as buttons, belt ornaments, belt buckles, clothing applications, small bells and, more rarely, tools or weapons (mostly knives). In addition, there are ornaments and tools made of various types of stone or bone (grinding stones, knives, spindle whorls) (Figs. 20 and 21). Only a small number of graves contained Han coins.

Most of the personal ornaments, tools, and weapons were closely associated with the bones, suggesting that they were part of the attire of the deceased at the time of burial. In the few cases where Han coins were reported, they were found among the bones, suggesting they may have been kept in a bag attached to the clothes, as ornaments, or placed with the deceased in connection with the burial procedures. The graves in Puge in the northeast often additionally held arrowheads and boars' fangs, placed by the door rather than on the body of the deceased, suggesting a local tradition fitting for this thickly forested mountain region.

In the Anning River Valley, in a few cases, small heaps of items were found in a grave corner, probably deposited there as gifts for the interred. Larger ceramic vessels, presumably containing provisions for the dead, were placed at the rear or sides of the graves while pouring and drinking vessels were usually placed in the front part of the chamber, often crushed by the closing stones suggesting they were the last items to be placed in the graves after the burial rituals had been completed. Very few objects, both ceramics and personal ornaments, show evidence of burning but further details of the actions associated with the use of fire are unknown.

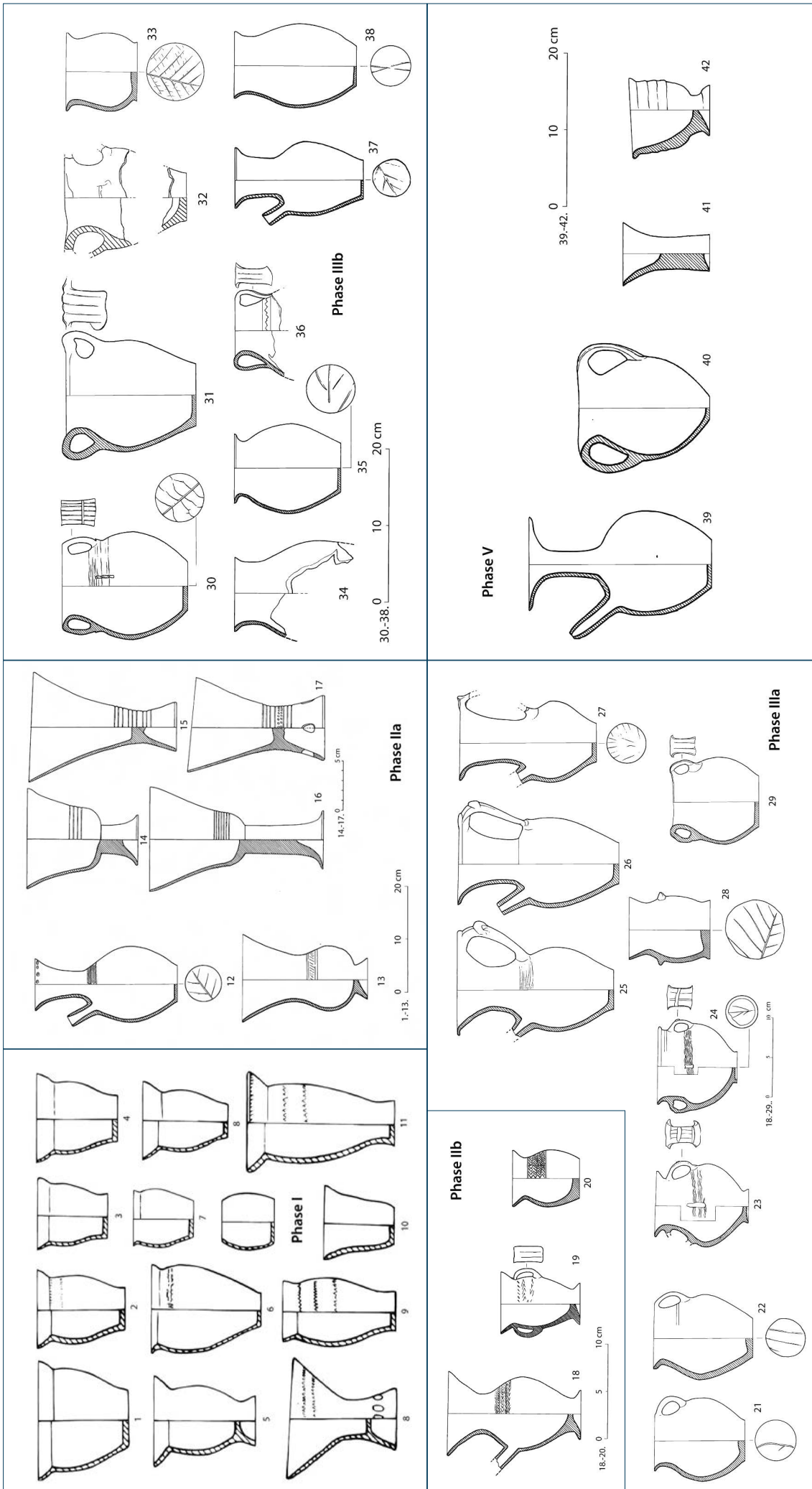
Based on the few graves for which exact object placement is recorded, it seems that many individuals had no objects at all while those with ornaments, tools or weapons usually had only one or two ornaments, weapons or tools each. In the rare cases where metal tools or weapons occur, they are often

associated with stone rods most likely used as sharpeners.

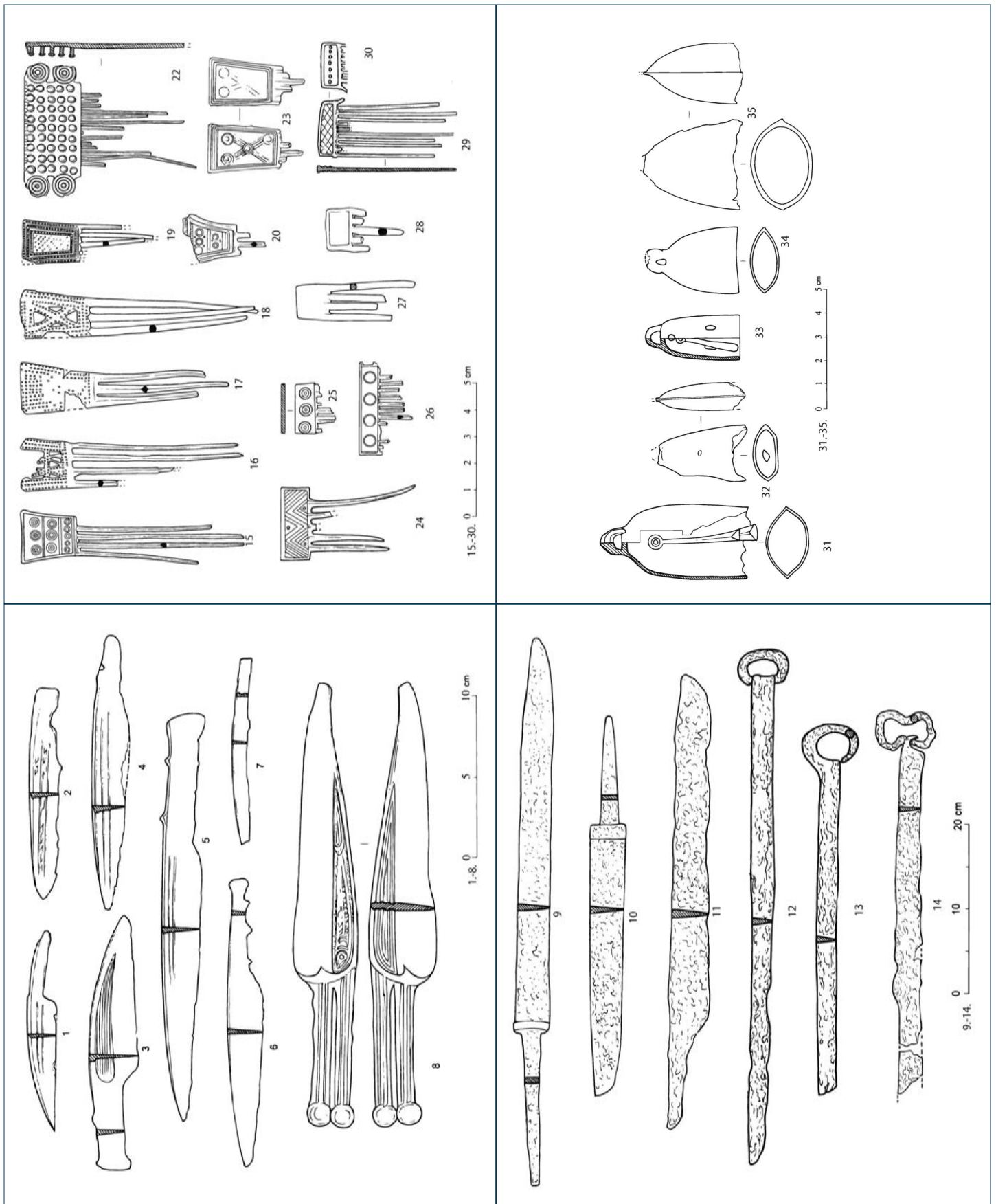
There are considerable differences in assemblages between graves at the same site suggesting either differences in chronology or in the identity of the deceased. All graves with particularly large assemblages were found next to graves with very few items even though all contained similar numbers of skeletons – in all cases both male and female – suggesting that different social subgroups were buried separately with different objects accompanying them.

There are considerable differences in contents between different sites and graves. Some graves held mostly weapons and tools, others mainly ornaments, others ceramics, and yet others included all types of items. Graves with ornaments often also contained swords or daggers, arrowheads and grinding rods, but not knives; graves without ornaments usually held knives and arrowheads as well as spindle whorls. As men and women were not buried separately, there was no clear division between warrior and craftsman, male and female, and ornaments could be associated with people bearing either weapons or spindle whorls. It is notable, however, that the only graves containing body armour also had a considerable number of swords and daggers, but also many clothing applications and hair ornaments in addition to the more ubiquitous knives, bracelets and finger rings. There may thus have been two groups of people buried separately, one carrying weapons and more elaborate hair-arrangements and decorated clothes, and a second with one or two tools and a few simple ornaments. The graves containing weapons and more elaborate clothing decorations and hair ornaments are also often associated with items of foreign origin, emphasizing the potentially special status of the people interred in these graves <sup>(4)</sup>. Overall, there is much variability in grave contents and individual attire, suggesting differentiation between various social groups but also chronological differences.

(4) For a discussion of culture contacts throughout and beyond the Liangshan region, consult Hein 2014a.



**Fig. 20** – Ceramic vessel types from megalithic graves: 1-11. late phase ceramics from Xichang Dayangdui (After Xichangshi et al. 2004: Fig. 25); 12-17. Xichang Bahe Baozi M4 (After Sichuansheng et al. 2006b: Figs. 67.5, 66.3, 66.5, 66.1, 65.8, 71.13) ; 18-20. Xichang Lianghuan (After Sichuansheng et al. 2006b: Figs. 63.7, 66.4, 68.2); 25-29. Miji Wangju M1 (After Liangshan 1981: Fig. 6-7); 30-38. Dechang Arong M4 (After Sichuansheng et al. 2006a: Fig. 15) ; 39-40. Xichang Xijiao M1; 41. Xichang Hexi M3; 42. Xichang Bahe Baozi M3 (After Sichuansheng et al. 2006: Figs. 67.4, 57.4, 66.7-8).



**Fig. 21** – Metal objects from megalithic graves: 1-8. bronze knives from Xide Lake Sihe M8, Xichang Bahe Baozi M1, Guoyuan M2, Lake Sihe M7, Xiaoxingchang AM2, AM1, Lake Sihe M6, M8, Hexi M2 (After Sichuansheng *et al.* 2006b: Fig. 88.8-16); 9-14. Iron weapons from Xichang Wanao M1, Guluqiao M1, Huangshuitang M1, Xiaohuashan M1, Dechang Arong M3 (After Sichuansheng *et al.* 2006b: Fig. 90.1-6 and 8); 15-30. Hair combs from Puge Xiaoxingchang BM4, Xichang Xiaohuashan M1, Bahe Baozi M1, Xijiao M1, Xide Guluqiao M1, Puge Xiaoxingchang BM4, BM2, BM4, Xijiao M1, Beishan M1, Xiaoxingchang BM2, Xichang Xijiao M1, Beishan M1 (After Sichuansheng *et al.* 2006b: Fig. 84.5); 30-35. Ling bells from Xichang Hexi M2, Xide Lake Sihe M8, Xichang Bahe Baozi M1, Xide Guluqiao M1, Xichang Beishan M1, Xijiao M1 (After Sichuansheng *et al.* 2006b: Fig. 82.1, 5, 7-10).

### 3.6 Chronology

Developing a chronological framework is problematic because of the long use-life of some of the graves, the large variability in grave goods, and the paucity of objects. By combining object typology, grave typology, and the combination of grave and artefact types it is, however, possible to suggest several phases and sub-phases of grave development for graves containing objects. Over time, there is a clear development from small graves with single instances of interment to increasingly large graves with increasing instances of interment and ceramics connected with drinking or libation rituals placed either inside or outside the grave, but there are also regional differences <sup>(5)</sup>.

The earliest megalithic graves of Phase I, which occur only in the central Anning River Valley, are small and were used for single instances of burial for one or several individuals as primary and/or secondary interments with a small number of ceramics. If placed inside the grave, the ceramics were large, possibly storage vessels for food provisions for the dead.

From Phase II onwards, megalithic graves start appearing further north, south, and east. In this phase the graves increase in size and are used for multiple instances of primary interment accompanied by increasing amounts of ceramics in various parts of the graves – mostly pouring and drinking vessels probably used in connection with burial rituals; the large jars and urns of Phase I are no longer used. All Phase II graves in the Anning River Valley also hold a few tools (knives, grinding implements, spindle whorls), and personal ornaments (bracelets, rings, beads), all found as part of the attire of the deceased, interred as primary extended supine burials. The number of ornaments increases substantially during the latter Phase IIb period, but this may be due to the increased number of interments per grave. At the same time, pits containing ceramics become common outside the megalithic graves, suggesting that ritual activities continued after the closure of the graves.

Phase II graves in the eastern mountains hold only a few bracelets but large numbers of arrowheads, bronze knives and perforated animal teeth – assemblages quite similar to the earlier local earth-pit graves – suggesting a focus on hunting also indicated by the assemblages of contemporary local settlement sites. In the northeastern graves, ceramics are rare and appear only in the form of simple food containers, while drinking equipment is entirely absent. The rituals connected with megalithic graves thus seem to have differed markedly between the Anning River Valley and the eastern mountains.

Phase III sees a major transition in ceramic quality from high-fired, dark fine ware to red coarse ware; at the same time, globular double-handled jars appear, soon becoming dominant in ceramic assemblages. These may be the result of increased contacts with Northwest Sichuan where such vessels first appear in stone-cist graves. The custom for the interred to wear a set of personal ornaments and tools or, more rarely, weapons, that started in Phase II continues and the number and variety of items increases over time. These include hair combs, small bells, and earrings during Phase III and iron swords and knives in Phase IV, suggesting developments in attire.

In Phase IIIb and especially in Phase IV, increasing numbers of people are interred successively in the same grave, and the graves become increasingly long, sometimes providing room for over a hundred individuals, making dating problematic. Graves from this period also show other signs of increasingly complex burial rituals such as the rearrangement of the bones of previous interments, the burning of offerings or lighting of fires inside the graves, and increasing numbers of ceramic sherds. Elaborate hair combs, an increasing variety of ornaments, clothing applications, and various objects of Han origin also appear in this phase.

Stratigraphic evidence from two sites, Xichang Dayangdui and Yingpanshan (Chengdu *et al.* 2007; Xichangshi *et al.* 2004), helps to place the megalithic graves within the local chronological framework, as do typological comparisons of ceramics and

(5) For an in-depth discussion of the local chronology consult Hein 2017a.

metal objects. The latter, combined with a very few radiocarbon dates and some Han coins, are the main source of evidence for absolute dates. Based on this evidence, Phase I can be dated to the 8th-6th centuries BC, Phase II to the early 5th century BC, Phase III to the 4th-3rd centuries BC, and Phase IV to the 2nd to early 1st century AD; however, as the use-lives of some of these graves are very long, there may be an overlap between Phases II and III and between Phases III and IV.

#### 4. Elements of synthesis

It is generally agreed that megalithic graves are a phenomenon limited to the Anning River Valley and the adjacent mountains of the northeast. So far, debates on the megalithic graves of Southwest China have revolved around typology, chronology, ethnic attribution, origins, and meaning. It has been speculated that the custom of using stones in grave construction came from northern China where small below-ground stone graves are found from the Neolithic period onwards (Xu 1958). This would not explain, however, why the inhabitants of the Anning River Valley suddenly decided to build large above-ground structures that required whole communities to invest many hours of labour over a considerable period. In the 1980s, several articles speculated that these and other types of stone graves indicated a '*religious veneration of stones*', but these naturally remain extremely speculative (Jing 1986). They mainly draw on ethnographic evidence as well as textual sources reporting on the customs of the population of Southwest China.

The same evidence is also cited in debates on the ethnic attribution of the builders of the various types of graves in prehistoric Southwest China. The megalithic graves have usually been associated with the Qiongzhusi Yi people mentioned in the *Hanshu*, but this attribution is highly problematic (Sichuansheng & Anninghe 1976: 330). The historical records postdate the archaeological material by centuries and were written by inhabitants of the

Central Plain who had never set foot into Southwest China <sup>(6)</sup>. Furthermore, assigning an ethnic label to a body of archaeological material does not improve our understanding of the past behaviours that created the objects and features in question. Such attempts should therefore be avoided. Indeed, over the last decade or so, debates on both meaning and ethnic attribution of the megalithic graves have fallen silent.

Discussion on issues of grave typology and chronology have been brought to a preliminary conclusion (Hein 2017a). The general development of the megalithic graves of Southwest China thus commences from small graves with single interments and a few ceramic objects in the first phase to large graves used in elaborate rituals and housing large numbers of interments in the final phase. In the interim, the interment of people in an attire involving personal ornaments and tools became customary, as did ceremonies involving communal drinking, both during burial ceremonies and after the final closing of the grave. The ceramics of Phase II show a connection with contemporary earth-pit graves, suggesting that part of the population may have been interred individually in less ostentatious graves. This seems to have been the case both in the Anning River Valley and in the northeastern mountains. The custom of erecting megalithic graves clearly emerged from the central Anning River Valley but was soon adopted throughout the whole valley and finally also in the northeastern mountains, where the early graves were considerably smaller and were connected with local burial rituals. Only the later period graves in the mountains are nearly identical in object assemblages to those from the Anning River Valley.

It is remarkable that this trend of erecting large burial monuments – that became the centre of increasingly complex rituals – reached the northeast but did not expand beyond this point. While the Anning River Valley is marked by wide, fertile plains and a pleasant climate allowing for several crops a year, the mountains are much cooler, thickly forested with steep slopes and few level areas

(6) The sources usually cited are the *Shiji Xinan Yi liechuan*, the *Hanshu Xinanzi liangyue chaoxian chuan*, the *Hou Hanshu Nanman xinyi liechuan*, and the *Huayang guozhi*. Although the *Shiji* incorporates earlier sources, it was written only in around 100 BC; the *Hanshu* and *Hou Hanshu* were compiled in the second half of the 1st century AD; the *Huayang guozhi* was composed around 350 AD (Loewe 1993).

allowing for agricultural exploitation. The object assemblages of the two areas differ markedly and the settlement finds suggest very different modes of subsistence. I thus argue that the megaliths and associated ritual practices suggest the emergence of a new form of supra-local group identity that nevertheless does not replace preexisting local identities. Why this did not expand beyond these two areas is not clear, as the finds from the Anning River Valley – including those from megalithic graves – clearly show outside connections, especially to Northwest Sichuan and Northwest China but also to areas further south and further east, even into Han realms (Hein 2014a; 2016). Nevertheless, these contacts seem to have been superficial and the Anning River Valley seems to have been largely self-contained economically and to a certain extent culturally, until at least the late 1st millennium BC. There may have been closer trade relations with the northeastern mountains whose inhabitants may have provided game, timber and other resources, while the inhabitants of the Anning River Valley could have provided agricultural products. This would explain how people from the northeast (but not from other regions) came to encounter and adopt the custom of erecting and using megalithic graves. At present these are only speculations but further research into subsistence practices and potential connections between the various parts of Southwest Sichuan will hopefully soon provide further insights.

## **5. Future Perspectives**

Beyond gaining insights into prehistoric developments in Southwest China, the megalithic graves of the Anning River Valley and the northeastern mountains can also provide a valuable case study for various common issues in archaeology. One is the methodological issue of how to approach a body of material so unevenly preserved and reported and so varied in expression as these graves. It has been shown that careful separate analysis of the various elements followed by a combined view is a very fruitful approach (Hein 2017b). Seen from a spatial and environmental perspective, a comparison between the megaliths of the Anning River Valley and those of the northeastern mountains is also a great case study showing how similar customs can be adapted to different geomorphologies and societies with different subsistence systems. At the same time, the graves in both regions warrant a detailed study of how the local environment shapes and is in turn shaped by ostentatious burial traditions leading to the development of ritual landscapes built and maintained with significant investment of labour. Further insights into labour investment and management, including raw material extraction and transportation, will require collaboration between archaeologists and geologists as well as an ethnoarchaeological and comparative approach considering material from past and living megalithic traditions worldwide. Such research, which is currently underway (Hein and d'Alpoim Guedes in preparation), also promises to provide insights into human behavioural patterns that might be useful in the interpretation of megalithic graves in other parts of the world.