

Early Cultural Developments on the Eastern Rim of the Tibetan Plateau: Establishing a New Chronological Scheme for southwest Sichuan

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Abstract

Research on the eastern rim of the Tibetan Plateau is generally hampered by the lack of established chronologies. The mountains of southwest China in particular are not very well explored. As a point of intersection of various culture-geographic regions and of long-distance exchange networks, the Liangshan region in southwest Sichuan deserves special attention. Unfortunately, this area is usually excluded from studies into the prehistory of southwest China, chiefly because the archaeological material is remarkably heterogeneous and the local prehistoric cultural sequence therefore has long remained obscure. Based on the results of excavations and survey work conducted during recent decades, this paper represents a first attempt to suggest a chronological scheme for southwest China and neighboring parts of Yunnan from the earliest evidence of human occupation around 3000 BC to the onset of large-scale Han influence around AD 100. Additionally, the paper reconstructs processes of early cultural developments and human occupation of the southeastern rim of the Tibetan Plateau that can serve as a point of departure for future research on the prehistory of western China.

Keywords: Tibetan Plateau, prehistory, chronology, Sichuan, Yunnan, Liangshan, cultural history

Introduction

Knowledge of the prehistory of southwest China has long been hampered by a lack of established chronologies and cultural sequences for many of its sub-regions. While relatively flat regions such as the Chengdu Basin in Sichuan and the area around Lake Dian in Yunnan are relatively well-researched (Flad and Chen 2013; Li 1998; Pirazzoli-t'Serstevens 1974; Psarras 2015; Yao 2008; Sun 2000), the mountains on the eastern rim of the Tibetan Plateau are comparatively under-explored. Located at the intersection of the Qinghai-Tibet and the Yunnan-Guizhou Plateaus, and bordering on the Sichuan Basin, the Liangshan 凉山 region in southwest Sichuan (Figure 1) has long been an important transit point between various culture-geographic regions. The known archaeological evidence clearly shows that this region has been crucial to connections between the far southwest and northwest China and the Central Plains (Hein 2014a). The local archaeological material is regularly cited as evidence for the existence of long-distance exchange networks between southwest China and Southeast Asia on the one hand and Central Asia and Central China on the other (Liu 2009; Hein 2014a, 2014b, and 2014c).

Despite this, the region is rarely included in studies of the prehistory of Sichuan or Yunnan. The main reason for this puzzling omission is the nature of the local archaeological material: it is quite heterogeneous and the chronological positions of many finds made during the 1980s and 1990s are unclear due to a lack of stratigraphic evidence and/or radiocarbon dates. Intensification of archaeological work in the Liangshan region since the early 2000s has led to numerous new discoveries that help resolve the chronological questions and clarify the cultural heterogeneity.

Based on this new evidence, the present paper for the first time suggests a chronological scheme for southwest Sichuan and paints a picture of local cultural developments from the earliest evidence of human occupation around 3000 BC to the onset of large-scale Han-cultural influence around AD 100. This new chronology is meant to serve as a reference and point of departure for future research on early human movements on the Tibetan Plateau and the neighboring regions of southwest China.

Geographic Background

This study centers on the Liangshan Yi Autonomous Prefecture 涼山彝族自治州 in southwest Sichuan and neighboring parts of northwest Yunnan. The research area is circumscribed by the high Shaluli 沙魯里 Mountains in the northwest, the Dadu River in the northeast, and the Jinsha River in the South, circumscribing a well-defined geographic entity of about 81,434 km², i.e., a little smaller than South Carolina (82,931. km²) or Austria (83,855 km²). It is largely covered by the present-day Liangshan Prefecture and also includes Panzhihua and adjacent parts of northwest Yunnan, specifically Ninglang 寧郎, Huaping 華坪, and Yongsheng 永勝 Counties (Figures 1, 2). This area comprises a number of physiogeographic sub-regions with widely differing characteristics: (1) the Anning River 安寧河 Valley in the center with its temperate climate; (2) the mountains of the Northeast with their continental climate; (3) the high-altitude Northwest with its alpine-steppe climate; (4) the high-altitude mountains, plateaus, and valleys of the Southwest; and (5) the temperate-subtropical Southeast. The climate throughout the research area has marked dry and wet seasons influenced by the southwest Asian Monsoon with ample annual rainfall distributed unevenly throughout the region. The Northwest is rather dry and the Northeast suffers from water runoff from the eroded mountains during the monsoon. The average temperatures mostly range around 14-18°C, but in winter the North experiences temperatures well below freezing and Panzhihua in the South is dominated by extremely hot summers and warm winters (Chengdu 2010).

Paleoecological research on the region is still at a very early stage, but recent research suggests that the conditions for agriculture may have been even less ideal in the past than they are at present (D'Alpoim Guedes 2013 and 2015; D'Alpoim Guedes and Butler 2015). Nevertheless, the relative differences between the regions would probably have been similar in the past and at the current state of research the present-day climate conditions may serve as a proxy. The Anning River Valley (Figure 2, Area 1; Xichang City, Dechang, Mianning, and Miyi Counties) in the center of the research area is the most attractive for agricultural purposes with a mild climate, ample rainfalls, and fertile soil on largely flat terrain. The Northeast (Figure 2, Area 2) with Zhaojue 昭覺縣 and Yuexi 越西縣 in its center has a temperate climate that brings cold winters and the sparse amount of flat land is not particularly fertile, but some of the river valleys allow for settled lifestyles with crop production and animal rearing. Additionally, the Northeast is an important thoroughfare from the Chengdu Plain toward Yunnan and Southeast Asia.

The Southeast (Figure 2, Area 3: Huili, Huidong, and Ningnan Counties) has a few wide and fertile river valleys with even warmer weather, but is surrounded by high mountains that isolate it from other parts of Sichuan. However, an extensive river network connects the Southeast with places further west and north and the terrain gently slopes down toward Northern Yunnan. The area is made even more attractive by its ample resources, most importantly copper and tin, that were much coveted by metal-producing groups throughout western China.

In the west, the contrast between valleys and mountains is even more pronounced: flat areas such the Yanyuan 鹽原 Basin in western Sichuan and the lake depressions of Lugu 魯固湖 and Chenghai 程海 in Yunnan are rare among the towering peaks of the Hengduan Mountain Range 橫斷山脈. Also, all of these flat areas are located at high elevations prone to frost, making them not ideal for agriculture. While the valleys in northwest Yunnan are still relatively warm, the Yanyuan Basin is very dry and has cold winter nights. Nevertheless, high sun intensity and an extensive river network as well as important salt resources make Yanyuan an attractive place. Muli County 木里縣 in the Northwest (Figure 2, Area 4) is dominated by even higher mountains only sparsely inhabited and even less-well explored archaeologically. The Southwest (Figure 2, Area 5) encompassing Yongsheng and Yanbian Counties 鹽邊縣 encompasses a wide range of elevations including the high mountain ridges running down from the Northwest as well as river basins and wide valleys below 1000 m asl. The Southwest is notably warmer and more humid than the North but has a similarly high sunshine intensity as Yanyuan. Additionally, the local soils are rather fertile, making the Southwest an attractive place to settle in.

Archaeological Material and Analytical Approach

The local archaeological material is as varied as the environment, encompassing different types of grave forms, settlement sites and object deposits. The material basis for the present study comprises 107 settlement sites, 1059 burials from 213 grave sites, and 15 object deposits and single finds, compiled from excavation reports, material collections in local research institutes, and personal excavation participation and survey work (Appendix).

The majority of settlement sites was observed in the Anning River Valley while the Northeast and the Southwest are represented nearly exclusively by burial material, and from the Northwest so far only two settlement sites are known. Throughout the whole region, settlement sites are usually very small, often single-phased, and characterized by thin cultural layers. All sites hold a number of refuse pits and a few small buildings, most of them semi-subterranean houses or wattle-and-daub structures with the sole exception of one stone house discovered in Muli in the Northwest. A few kilns have been reported from sites in the Center and in the Southeast.

The grave sites encompass single graves, small grave groups, and a few large cemeteries of sometimes over a hundred graves. Earth-pit graves (most of them with single interments) have been reported from the Center, the Southeast, and the Southwest. Various forms of stone-construction graves are known from the Northeast (mostly multiple secondary interments), Southeast (mostly single primary interments), and Southwest (single as well as multiple interments, mostly primary). The Anning River Valley is furthermore known for its megalithic graves containing multiple primary interments of sometimes over a hundred individuals. The grave assemblages vary greatly between sub-regions and time periods.

The material available for analysis includes ceramics, stone tools, metal objects (mostly bronze, some iron, gold, silver, and composite items) in the form of personal ornaments, weapons/tool, and a few vessels, coins, armor, horse harness, as well as potential ritual objects such as staff heads, stands, bells, and drums. The assemblages combine local particularities with clear signs of outside contacts (Hein 2014a). These connections allow for cross-dating of finds which are otherwise difficult to place in time. Radiocarbon dates are only available for a limited number of sites; furthermore, in many cases these dates are of limited reliability as they are based

on only a single sample per site or layer. The present paper therefore relies mostly on traditional methods of stratigraphy and typology to establish a chronological scheme for this region.

Typology and classification have been at the core of archaeological work since its beginning as a discipline as both a way of sorting the large amounts of objects that come out of the ground and a way of “making sense” of what we see in the archaeological record. Ceramics are chronologically sensitive due to the high frequency of breakage, the plasticity of the medium, and ubiquity in the archaeological record. Slight, incremental changes in ceramic form and/or decoration can reflect changes in stylistic preferences as they occur over time within one and the same cultural tradition; larger and/or sudden changes may indicate foreign influence and/or major changes in cooking or eating customs. Being a reflection of subsistence systems, stone and bone tools reflect differences between various prehistoric groups as well as major changes in economic activities within one group or region, sometimes necessitated by population growth, human movement, and/or climate change. Tools are therefore very useful for identifying and distinguishing various subsistence communities, but they can also be indicators of temporal changes in subsistence systems and inter-group relations. While ceramics and stone tools are mostly discarded when broken, metal objects tend to be melted down and the raw material reused when the objects themselves have become unusable. Metal objects therefore mainly occur in graves; in such contexts metal ornaments, weapons, and tools can be used for typological comparison with the aim of establishing the relative chronological position of one grave to another. Burial forms and mortuary traditions likewise can be compared and placed in relative chronological position to each other, and grave forms may even show gradual changes over time that allow for establishing a temporal sequence.

Comparative work with the aim of establishing a chronological sequence of features, layers, and sites requires detailed typological work on all object and feature types, an undertaking that goes far beyond the capacity of a single article. The study at hand therefore is based on classifications established in a detailed study of all material from the Liangshan region (Hein 2013: esp. 97-108 and 110-265). The material was first grouped by raw material, describing the material characteristics and functional constraints to establish function. Function is a very complex matter that may be split up in the aspects of *technofunction* (i.e., the utilitarian aspect), *sociofunction*, and *ideofunction*, all of which influence the artifact's overall form and design (Sackett 1977:370). As technofunction can most easily be inferred based on object form, this was the starting point for my analysis. In this previous study, I focused on questions of identity and culture contact as reflected in similarities and differences in production techniques and object form and decoration as well as object usage (Hein 2014a). On the basis of this work, the present study describes object assemblages and features at first separately by site and then sets the sites into spatial and chronological relationship to each other based on stratigraphic evidence, typological comparison of objects and grave types, and radiocarbon dates where available. The study thus starts on the micro-level of local analysis and then step-by-step widens the gaze to include increasingly larger portions of the research era into the picture. In this fashion, the paper establishes the cultural sequences in the various sub-regions from the earliest known settlements to the 1st c. AD as well as general trends observable throughout the research area.

Current State of Research

The most important basis for developing a chronology for southwest Sichuan are multi-phase sites with thick cultural deposits combined with radiocarbon dates and typological comparison with material from well-dated sites in nearby regions. Nearly all known stratified sites in the Liangshan region are located in the central Anning River Valley (Xichang Dayangdui, Yingpanshan, Ma'anshan, and Mianning Sanfentun).¹ Several cultural phases have also been observed at Xichang Henglanshan, Lizhou, Mimilang, Qimugou, and Yongsheng Duizi in Northwest Yunnan. Most of the existing radiocarbon dates are samples taken from the Anning River Valley as well. On this basis, Jiang Zhanghua (2007) proposed a widely-accepted three-phase chronology for the Anning River Valley consisting of: 1. the Henglanshan phase; 2. a transition phase represented by Xichang Lizhou, Dayangdui, and Mimilang; and 3. a third phase dominated by megalithic graves. The fine-chronological division, however, is still a topic of much debate.

For the megalithic graves, for instance, various chronological schemes have been suggested, some based on grave form, some on ceramic types, others on both. Among the megalithic-grave assemblages, Jiang Zhanghua (2007) distinguished two types of ceramic objects, but as stratigraphic evidence is lacking, he did not claim that they belonged to two different time periods. Song Zhimin (1991) proposed a scheme of four construction types which he assigned to different chronological periods from the 5th to the 1st c. BC. Tong Enzheng (1978) developed a similar scheme but with three instead of four grave types and phases. Based on object comparisons with other regions, the summary publication on the megalithic graves in the Anning River Valley provides a chronological scheme consisting of three phases (Sichuansheng et al., 2006a). The main problem here lies in the nature of the megalithic graves themselves: some had a long use-life and contain objects from a variety of time periods, while others had shorter use lives. Furthermore, the assemblages differ greatly from grave to grave, making it difficult to compare the assemblages. Therefore, most chronologies suggested so far only apply to a limited number of graves and none of them has been universally accepted.

As far as absolute dates are concerned, it is generally agreed that the earliest megalithic graves were built during the 5th c. BC, whereas Han coins found in the latest graves securely date them to the early 1st c. AD. In a recent publication on the "Stone-Cist Graves in the Ethnic Corridor between Sichuan, Yunnan, and the Qinghai-Tibet Plateau," Luo Erhu (2012) boldly proposed a chronological framework encompassing all graves with stone installations in southwest China, excluding only the megalithic graves. The grave forms and their content differ vastly between various locations, however, suggesting a uniform developmental sequence and chronology for all of them is therefore highly problematic. Indeed, Luo's characterization of his five phases remains vague, and the graves from the Liangshan region do not fit his scheme.

Previous research suggests that the developments of stone-cist graves in the upper Minjiang River Valley followed a common sequence (He 2009; Smith 2001; Xie and Jiang 2002). For northern Yunnan, however, the case is more problematic as there is much regional variability in grave construction and content. Intensive excavation work in recent years has allowed researchers to make considerable strides toward a relative and absolute chronology of prehistoric sites in Yunnan (Fan 2009; Xu 1999; Yao 2010). These can be used for comparison with material from southwest Sichuan. The same applies to recent discoveries from Yunnan. Excavations at multi-phased sites with particularly thick deposits and rich assemblages at Jianchuan Haimenkou (Yunnansheng 1958; Yunnansheng et. al. 2009a) and Dali Yinsuodao (Yunnansheng Wenwu et

al. 2009b), provide important stratigraphic evidence. For later-period sites, comparisons with the Han material from Sichuan and other places provides important evidence. Here, the vessel typology and chronology proposed recently by Psarras (2015) provides a particularly important reference.

Developing a New Chronological Framework

Traditional methods of object typology combined with evidence on changes in burial custom and settlement patterns as well as hard evidence in the form of site stratigraphies provide the basic evidence for establishing a relative-chronological framework. Considering the small number of radiocarbon dates available for the research area, object comparison with finds from more reliably dated sites in other regions are the only way to suggest absolute dates for these relative chronological periods. A major difficulty inherent in this comparative approach is that the span of object usage might differ significantly between regions. An object type that reached its peak of popularity in the Chengdu Basin during the 2nd c. BC, for instance, may have been adopted in the western mountains only several decades later and continued to be used there for several centuries after falling out of fashion in its place of origin. For comparanda from places as far away as the northern steppe or the Central Plains, the potential delay and/or difference in usage or interpretation of specific object forms or decoration motives becomes even more likely. Additionally, Southwest China is characterized by a wide variety of object forms that have no parallels elsewhere, making cross-dating difficult. All suggestions for absolute and also some of the assessments for relative dates provided below are therefore only suggestions based on the material currently available. The chronology developed here thus will have to be amended and changed as new evidence becomes available.

Another major difficulty in developing a chronological framework for southwest Sichuan is the great diversity of the archaeological material between different sub-regions and the uneven state of research between the population centers in the central Anning River Valley and the river valleys of the Southeast and the high western and northeastern mountains (Hein 2013: esp. 14-17). While present-day Xichang, Dechang, and Mianning Counties are relatively well-explored, from Muli hardly any sites are known. In the following, I therefore introduce the archaeological finds by sub-region, starting from the well-researched Anning River Valley and then expanding the view until also the remote mountains in the Northwest are included.

The Anning River Valley and the Adjacent Mountains

Early Settlement Finds and Earth-Pit Graves

The Anning River Valley falls into three sub-sections – Dechang and Miyi Counties in the South, Mianning County in the North, and Xichang in the center. The early assemblages differ somewhat between each sub-section but become increasingly similar over time. To show this development and suggest dates for the known sites, I describe the most important assemblages in some detail and connect them to absolute dates where possible. The resulting chronology in comparison to the other regions discussed in this paper is provided in Table 4.

The Central Anning River Valley

Developments in the central Anning River Valley around Xichang are fairly well-understood and can be grouped into five phases: 1. Early Henglangshan, 2. Late Henglangshan, 3. an early earth-pit grave phase (Middle Lizhou, Early Dayangdui, Yangjiashan), 4. a pre-megalithic phase (Late Lizhou, Middle Dayangdui, Mimilang). and 5. the megalithic phase.

Early Henglangshan is represented by the type site Xichang Henglangshan, Layer 3 dating to 2112 ± 62 cal. BC and Layer 4 to 2545 ± 47 cal. BC with hardly any differences between the assemblages.² The material is characterized by coarse sand-tempered low-fired red-brown ceramics accompanied by polished stone woodworking tools, arrowheads, and some perforated stone-knives (Figure 3.1-9). Late Henglangshan is represented by Xichang Ma'anshan, Lower Qimugou, and Lower Yingpanshan, sites holding ceramics largely identical with each other and very similar to those at Henglangshan but with somewhat different decoration and entailing leaf-shaped vessel bottoms and double-perforated knives as they occur only in surface finds at Henglangshan. Early Lizhou, a site not well documented but said to have held similar finds, likely belongs to Late Henglangshan as well.

The settlement material of Early Xichang Lizhou is superimposed by earth-pit graves with rich ceramic assemblages that fall into two types: one consisting of vases and ewers whose whole surface is covered with geometric decoration patterns (in graves AM2, AM6, AM10, BM4); the other comprised of double-handled jars and large numbers of bowls but no spouted or decorated vessels (AM9, BM3, BM8) (Figure 3.41-46). As BM4 is cut by BM3, it is likely that the second assemblage type dates later than the first. The second type also encompasses a stout jar with horn-shaped handle nearly identical with a vessel from a Han grave observed at Lizhou (Lizhou Yizhi 1980: *Fig. 6.5*), thus confirming a later date.

The ceramics from the pre-Han graves at Xichang Lizhou are all sand-tempered, low-fired, red-brown in color, and of low quality. By contrast, the ceramics from the earth-pit graves of early Dayangdui are of high-fired black-brown fine ware and have a black slip without decoration (Figure 3.47-83). Their handles are thin and long, reaching from the high collar to the low belly of the round-bottom ovoid vessels; by contrast, at Lizhou thick ring-handles are attached to the upper part of squat jars sometimes decorated with net pattern. Both in ceramic quality and execution, the Early Dayangdui ceramics strongly resemble finds from Qijia Culture sites in Gansu and Qinghai (e.g., Zhongguo 1975: *Fig. 16 and 18*; Debaine-Francfort 1995: *Fig. 19, 28, 98, and 116*). If the earth-pit graves at Dayangdui were indeed built by a group with Qijia connections, this would suggest a date between ca. 2200 and 1750 BC, i.e., postdating Lower Yingpanshan and Early Lizhou, and either contemporaneous with or slightly later than Middle Lizhou.

Double-handled vessels were found at Xichang Mimilang as well, but their handles are small, ring-shaped, and attached to straight necks of wide-bodied vessels very different from Lizhou or Dayangdui finds but more similar to objects from megalithic graves (Figure 3.26-32). At Mimilang, two radiocarbon dates were taken, one from Layer 5 (89 ± 41 cal. AD) and one from Layer 4 (1008 ± 60 cal. BC), but as the date from Layer 4 is earlier than the one from Layer 5 instead of the other way around, and the dates rely on only one charcoal sample each (Jiang, 2007:10), this late date is likely faulty. Stylistic evidence indicates a date contemporaneous with middle Lizhou and Early Dayangdui.

The site of Dayangdui has three phases, an early one characterized by the graves with high-fired ceramics described above, a middle one characterized by object pits, and a late one consisting of megalithic graves. The ceramic pits of Middle Dayangdui hold double-handled jars similar in

form to those from Early Dayangdui, but they consist of red or brown sand-tempered ceramic material rather than high-fired black fine ware (Figure 3.47-83). They are thus rather different from objects from Gansu but instead resemble ceramics from stone-cist graves at Wenchuan Zhaodiancun in Northwest Sichuan (Shi 1999: *Fig. 3*). Zhaodiancun dates around the 8-7th c. BC, as might Middle Dayangdui.

Overlaying Early Henglanshan-phase settlement remains, the ceramic deposits of upper Yingpanshan hold very large urns with or without application bands and double-handled vessels similar to those at Dayangdui. At Yingpanshan, these vessels are accompanied by net-weights as seen in the lower layers at the same site, and vessels with net-pattern similar to ceramics at Xichang Mimilang, Dechang Dongjiapo, and Wangjiaping. The high stems of upper Yingpanshan are reminiscent of objects from Dayangdui and Xichang Qimugou, which are in turn related to material from megalithic graves. Upper Yingpanshan therefore likely postdates middle and maybe even late Dayangdui.

The South Anning River Valley

In the South, we can see three early phases. The first phase is represented by Dechang Maojiakan, a site characterized by microliths and coarse ware, the second by Early Dechang Dongjiapo and Wangjiaping whose ceramics are similar to those from Henglanshan both in quality and form but not in decoration (net- and cross pattern instead of simple line incisions), and the third by Late Dongjiapo which shows close similarities to Xichang Mimilang. The microliths at Maojiakan suggest a way of life different from that common around Xichang; similarly, Wangjiaping holds coarse woodworking and processing tools very different from the fine perforated knives found around Xichang, indicating a general difference in subsistence between the two regions. Nevertheless, the ceramics from Wangjiaping are similar to those from Henglanshan both in quality and form types though not decoration. The radiocarbon dates confirm that Wangjiaping Layer 3 (2360 ± 69 cal. BC) is contemporary with Early Henglanshan but Maojiakan may be of an earlier date.

The ceramics and stone tools from Early Dongjiapo are similar to objects from Wangjiaping (Figure 3.33-40); however, they are accompanied by a large number of net-weights largely identical to those from Xichang Yingpanshan indicating parallels in subsistence practices but not ceramic traditions. Nevertheless, incised net pattern, zigzag decoration, single-handled vessels, and fine-polished stone-tools resembling objects from Mimilang and from megalithic graves, are particularly numerous with Late Dongjiapo. Both sites also share wide outward-flaring vessels with net pattern. Early Dongjiapo thus likely post-dates Wangjiaping whereas Late Dongjiapo might be contemporaneous with Mimilang.

The North Anning River Valley

From the North, hardly any sites predating megalithic graves are known. The only properly excavated sites are Mianning Gaopo and Zhaojiawan whose assemblages are largely identical but very different from anything found in other parts of the Anning River Valley. The Mianning finds consist of red-brown and grey sand-tempered wheel-thrown pottery, mainly in the form of carinated *wan* bowls, large urns and jars, mostly with a row of lug handles around the shoulder, leaf-vein impressed ring-footed bottoms, a few high stems, and conical spindle whorls. Zhaojiawan

additionally holds some narrow band-handles, and Gaopo yields many coil-built duck-beak shaped objects usually interpreted as spouts. Single lug handles have been found at Middle Xichang Dayangdui and Dechang Dongjiapo but otherwise no close comparanda can be found. Instead, the finds from Mianning are more similar to objects from Ludian Yeshishan in northeastern Yunnan (Yunnansheng et al. 2009c), which in turn shares some traits with Weining Jigongshan in Guizhou (Guizhousheng et al. 2006; Liu and Sun 2009). The excavators date Yeshishan to 1300-1900 cal BC but these dates are based on two problematic dates with wide error ranges, 1217 ± 121 cal. BC and 1347 ± 130 cal. BC. Based on five radiocarbon dates with less wide error margins, Jigongshan is dated more securely to ca. 1400-1100 cal. BC.

The radiocarbon dates from Gaopo are 1379 ± 39 cal. BC for Layer 3, 1316 ± 47 cal. BC for Layer 2, and 1179 ± 47 cal. BC for Layer 1. The radiocarbon dates from Zhaojiawan are 1316 ± 47 cal. BC for Layer 2 and 972 ± 53 cal. BC for Layer 3. If these dates are correct, then the ceramic form tradition shared by all four sites thus likely has its origin at Jigongshan and reached Mianning through Yeshishan; however, the relationship between Gaopo/Zhaojiawan and other sites in the Anning River Valley remains problematic. Chronologically, the lug handles of Dayangdui and Dongjiapo suggest that Gaopo predates middle Dayangdui; the band handles at Zhaojiawan and late Dongjiapo indicate Zhaojiawan might be slightly later than Gaopo.

In the Anning River Valley we thus see various local groups that are nevertheless interconnected and come in increasingly closer contact with each other as well as with people from other regions. This trend becomes even more apparent in the following phase characterized by so-called megalithic graves. At the same time, settlements and earth-pit graves in the neighboring mountains of Puge and Xide show very different assemblages surprisingly consisting of high-fired fine ware in the form of undecorated but crudely formed cups and stout jars without handles. Examples are observed at Puge Tianba, Zhongcun and in the early settlement layers of Xiaoxingchang. The plain jars found at the latter site resemble finds from Xichang Yangjiashan (albeit executed in different ceramic material), and they are overlain by megalithic graves, so they can be dated to the pre-megalithic phase. Assigning an absolute date is more difficult, though, and might require further fieldwork and scientific dating. The stone tool assemblages at these as well as at later sites are characterized by a considerable number of arrowheads and coarse grinding tools indicating a mixed form of subsistence dominated by hunting and thus very different from the agricultural assemblages of the Anning River Valley. The same kind of tool assemblages and high-fired plain jars have also been reported from Puge Wadaluo, but some of the cups and stout jars resemble material from the megalithic graves of Miyi Wanqiu, albeit of a finer ceramic quality. Handled or spouted jars or incised and impressed decoration motifs as they are known from megalithic-grave assemblages in the Anning River Valley are not common at Wadaluo. The absolute date of Wadaluo is therefore not entirely clear but the site likely postdates Tianba and Zhongcun and may predate the megalithic graves of Xiaoxingchang.

Anning River Valley Megalithic Graves and Related Sites

The megalithic graves reflect a complex set of burial rituals common throughout the whole Anning River Valley and the immediately adjacent mountains of Puge and Xide; however, grave form, mode of interment, and object assemblages differ between sites and also change over time. Based on a comparison of ceramic forms, ceramic quality, presence/absence and type of other

burial goods, grave size, interment type, and associated rituals, I am suggesting to distinguish between four main phases and four sub-phases (Table 1).

One major difficulty with comparing and dating the megalithic graves is that many of them have been used for several instances of interment over extended periods of time. To address this problem, I begin by relying on: 1. graves used for a single instance of interment; 2. stratified sites containing megalithic graves (Puge Xiaoxingchang, Xichang Dayangdui, Lizhou, Maliucun, Mimilang, and Qimugou); 3. comparison with material known from well-dated sites; and 4. radiocarbon dates. In a second step, I then integrate material from graves with a longer use-life.

The earliest megalithic graves (Xichang Dayangdui and Tianwangshan) were used for single instances of probably secondary interment of a small number of people. The majority of ceramic vessels associated with these graves were found in close-by pits and neither graves nor pits contained weapons, tools, or personal ornaments. The associated ceramic assemblages consist of drinking and pouring vessels reflecting communal rituals at the graves. The ceramic quality resembles the Middle Dayangdui finds but the forms differ – footed beakers and plain jars with high outward-flaring collars instead of large storage jars. Based on these differences and the stratigraphy, Phase I of the megalithic graves thus may be dated to the late 8th to 6th c. BC.

These earliest megalithic graves are found exclusively in the central Anning River Valley around Xichang, but from Phase II onward the custom extends further south and in the eastern mountains of Puge and Xide. In fact, the only radiocarbon dates from megalithic graves were taken from human bones in Puge Xiaoxingchang AM1 and BM2, both dating to 601 ± 127 cal. BC. Graves AM1 and AM2 at Xiaoxingchang are relatively small with a limited number of interments similar to those at Dayangdui and Tianwangshan, while graves BM1-3 are medium-sized and hold up to 125 skeletons. The assemblages combine a few ceramic vessels of the high-fired undecorated quality typical for Puge and a considerable number of knives, arrowheads, and personal ornaments. During the second phase, many graves in Xichang such as Bahe Baozi M4 and M6 or Lianghuan combine a few ceramic vessels (mainly spouted jars) with a few knives and spindle whorls similar to finds from Puge and Xide.

Besides megalithic structures, there are the earth-pit graves of Xichang Qimugou M1 and M2 and the ceramic pits of Maliucun and Upper Yingpanshan furnishing a large number of ceramic vessels; these comprise goblets, ewers, and jars made of the same high-fired black-brown fine material as the ceramics from the megalithic graves of Dayangdui indicating a shared ceramic tradition. The Qimugou earth-pit graves superimpose the settlement remains of Lower Qimugou discussed above and are in turn superimposed by settlement Layer 3, whose coarse sand-tempered handled vessels resemble finds from the megalithic graves of Miyi Wanqiu and Dechang Arong (Figure 4.1-12). One earth-pit grave with three chopper stones (M3) and one round pit with one large urn and one smaller jar (W1) cut into Qimugou Layer 3. The urn resembles objects from the Yingpanshan deposits, which are superimposed by Han material and the jar resembles Han-style ceramics indicating a Western Han date (206 BC – AD 9). The chronological sequence is therefore Xichang Mimilang (pre-megalithic) – Upper Yingpanshan (early Phase IIa) – Qimugou M1 and M2 (late Phase IIa) – Qimugou W1 (Phase IV).

During Phase IIb (around the 5th c. BC), we thus see a shift from the fine ware of Phase I and Phase IIa to the red low-fired coarse ware of Phases III and IV. In Phase III, such ceramics come to dominate in the form of globular jars with short band handles that appear for the first time at Qimugou Layer 3 and then in increasing number at settlement sites (Xichang Wangjiatian,

Mianning Sanfentun) and in megalithic graves (Miyi Wanqiu, Dechang Arong) throughout the whole Anning River Valley. Such jars are characteristic of stone-cist graves in the upper Minjiang River Valley dating to the 3rd c. BC (He, 2009). Similar vessels occur in megalithic graves holding iron objects (e.g., Miyi Wanqiu) but they are never found next to ceramics resembling those from Qimugou M1 and M2. Phase III thus dates approximately to the 4th-3rd c. BC. This third phase also sees the appearance of hair combs (Figure 4.22-40), small bronze bells, and in the case of Puge perforated animal teeth reflecting changes in personal attire. At the same time, the grave size increases and the number of interments increases. These trends start already in the latter part of Phase II and continue into Phase IV, culminating in very large graves such as Xichang Wanao. Only in Puge do the megalithic graves stay small, possibly because of lack of space in the narrow mountain valleys. The Phase IV graves are often dated by the presence of Han-style iron knives with ring-handles or the presence of *daqian wushi* 大泉五十 (~AD 9-14) or *wuzhu* 五銖 (~AD 25) coins suggesting a date of AD 1st or 2nd c. at least as *terminus post quem*.

As many megalithic graves have been reopened several times, any dates suggested by means of object typology can only help to determine one point during the use life of the grave. Xide Lake Sihe M1, for instance, contains both a goblet similar to objects from Xichang Qimugou M1 and M2 and Han objects (coins and a Han-style *fu* vessel), showing that the grave was likely in use from the 4th to the 2nd c. BC at least. A large number of objects and skeletons like those observed at Puge Xiaoxingchang BM1 and BM4, or Xide Guluqiao M1 may indicate a long use-life. If the objects all closely resemble each other, however, the large assemblage was more likely the outcome of intensive usage over a shorter period of time (e.g., Dechang Arong). By contrast, at Miyi Wanqiu, the same basic vessel forms occur in a variety of types, suggesting extended use.

Based on these comparisons, for the megalithic graves it is possible to distinguish four main phases with several sub-phases. Phase I dates to the 8-6th c. BC, Phase II to the early 5th c. BC, Phase III to the 4-3rd c. BC, and Phase IV to the 2nd to early 1st c. BC. Given the long use-life of some of these graves, Phases II and III might overlap, as might Phases III and IV. The general development, however, is clear: the first graves were small and held single interments with few objects; over time, they grew in size, number of interred, and complexity of associated rituals. The urn pits of upper Yingpanshan and Qimugou are likely connected with megalithic graves, dating to Phases IIa and IV respectively. The earth-pit graves at Qimugou are contemporaneous with the megalithic graves of Phase IIb, as is the ceramic deposit of Maliucun. When incorporating this with the earlier earth-pit graves of Lizhou and early Dayangdui as well as the ceramic deposits from middle Lizhou, based on ceramic forms we can distinguish between five phases with several subphases, the early Dayangdui assemblages falling in a pre-megalithic Phase 1, the Lizhou graves and middle Dayangdui ceramics into Phase 2a, and the megalithic graves appearing in Phase 2b (Figure 5).

The Northeast: Zhaojue, Yuexi, and their Neighbors

While Xide and to a lesser extent Puge are closely linked with developments in the Anning River Valley, groups in other parts of the northeastern mountains do not adopt the custom of erecting megalithic graves; instead, various types of smaller stone graves are typical for the area around Zhaojue and Yuexi Counties. Zhaojue is characterized by many different grave forms existing next to each other, all of them containing multiple secondary burials and a limited number of – often unique – objects or sometimes none at all. Assessing their date is therefore difficult. The

only graves that have at least a clear *terminus post quem* are those containing Han-style objects. The brick-wall-like stone-construction graves at Zhaojue Chike Boxixian clearly imitate Han graves; they contain unique ornaments of semi-precious stone and metal next to typical Han ceramics and coins suggesting a date around the 1-2nd c. AD (Figure 6).

Zhaojue Eba Buji M1 held a bronze basin virtually identical to object from Han graves at Guizhou Weining and Mancheng (Zhongguo 1980: 58; Guizhousheng 1981: *Fig. 11*). The finely-worked bronze axe found in grave M3 has a form common in both Western and Eastern Han sites, indicating a similar date. A single nephrite pendant in M2 is not sufficient for assigning a date, but as the grave structure of all three graves is the same, they are likely contemporaneous. The metal-basin fragment found in Erba Keku M4 is low quality and does not resemble any known Han objects. It was accompanied by finely polished arrowheads similar to those from grave M5 at the same site and a stone axe similar to an object from M9. All of these stone items closely resemble finds from the settlement layers of Puge Xiaoxingchang, indicating a similar date.

The ceramics from the stone graves of Zhaojue Fuchengqu show a strong resemblance to finds from Puge but also Xichang. The flat-bottomed jars are nearly identical to objects from the settlement layers of Wadaluo and Xiaoxingchang; the footed bowls, on the other hand, are of the same form as those in the early earth-pit graves at Xichang Dayangdui. The graves at Fuchengqu are therefore likely roughly contemporaneous with those at Wadaluo and thus considerably earlier than those at Erba Keku. The plain ceramic vessels found in the graves at Pusu Bohuang are again different; they closely resemble ceramics from the stone-construction graves at Huili Xiaotianshan and Xiaoyingpan, and Luquan Yingpanbao, which date to the late Neolithic (see below). Interestingly, the graves of Pusu Bohuang and those of Eba Buji are located on the same hill, but the former are considerably earlier in date.

Yuexi is even less well-researched than Zhaojue, but the few earth-pit graves known from Huayang and Liaojiashan are largely identical in content with some of the stone-cist graves along the upper Minjiang (e.g., Sichuansheng and Maowenxian, 1987: *Fig. 12-13*). They contain a large number of bronze vessels, bronze and composite swords, knives, double-handled ceramic jars, and bronze ornaments that date them to the Western Han.

The Southeast: Panzhihua, Huili, and their Neighbors

The southern part of the research area went through a development of its own independent from the Anning River Valley but closely connected to northern Yunnan. After an early phase with cave and open-air sites dominated by microlithic assemblages similar to finds from Yunnan, we see the emergence of settlement communities relying increasingly more on agriculture and burying their dead in earth-pit graves with or without stone-construction accompanied mostly by ceramic vessels whose forms change over time. Furthermore, there are locational differences (North vs South) and sites showing strong outside connections (Huili Guojiabao, Guoyuan, Luoluochong, Zhuanchanba).

There are numerous cave sites in northern Yunnan (Zhongguo 2009) but Panzhihua is the only place in Sichuan with known cave sites: Xiqu Yanwan, Renhe Huilongwa and Xicaoping. The latter two sites hold microlithic assemblages and considerable amounts of faunal remains but are devoid of ceramics, as is the open-air site Huili Yangjia Wuji. Xiqu Yanwan, a cave site with open-air parts, contains flaked stone-tools and ceramics but no microliths. It is therefore

conventionally dated to the early Neolithic while the other cave sites are assigned a late Paleolithic date; however, at the current juncture this is only an assessment of mode of subsistence rather than an actual date.

Nevertheless, the differences between the ceramics at sites characterized by coarse stone-tools and sites containing polished stone-tools indicate a difference in date. Huili Houzidong and neighboring sites hold peculiar coarsely flaked shouldered axes and adzes (Sichuansheng et al., 2009: *Fig. 3-5*). The associated ceramics (black-slipped, low-fired, sand-tempered small- medium-sized wide-mouthed jars) resemble finds from Dechang Maojiakan, indicating a similar date (mid 3rd mill. BC).

Huili Dongzui falls into two phases: the first phase is characterized by jars with moderately outward-flaring rims, some of them with finger-tip impressed appliqué bands, others with incised decoration reminiscent of Dechang Wangjiaping (compare Chengdu et al., 2008a: *Fig. 13* to Chengdu et al., 2007: *Fig. 5, 10-15*). The later layers contain rims with corded-ware design similar to finds from Yongren Caiyuanzi and Mopandi in Yunnan (Yunnansheng et al. 2003; Yunnansheng 1985), and handles with a middle-ridge reminding of objects from Jianchuan Haimenkou (Yunnansheng 1995; Yunnansheng et al. 2009a). Based on these comparisons, Dongzui dates to 1500-1100 BC.

The ceramics at Dongzui and Huili Washitian are very similar in quality: low-fired, hand-thrown, yellow coarse ware, but the forms are very different. Instead of handled jars with corded-ware design, the earth-pit graves and settlement layers at Washitian contain open bowls, plain flat-bottomed jars, and stemmed goblets with net pattern. They are associated with needles, arrowheads, and axes made of stone, bone, or bronze, and several stone molds for metal tools, pointing to local metal working and a later date. The spearhead form of one of the molds is largely identical with finds from Yongsheng Longze dating to the 5th c. BC (Yang et al. 2009: 207-211); the *ge* 戈 dagger-axe mold is of typical Shu style dating between the 6th and 5th c. BC (Tao 1981), providing an overall date of 5th c. BC for Washitian.

The large cemetery of Huili Fenjiwan with its over 150 graves furnished mainly ceramic objects, all of a quality similar to Dongzui and Washitian and the forms and decoration show parallels with the Anning River Valley (large urns and jars resemble: Xichang Qimugou and Yingpangshan; goblet forms: Dechang Dayangdui and Xichang Tianwangshan; net patterns, double-handled vessels, spouted ewers: Xichang Lizhou) (Figure 7.1-16). A few graves held *yue* 鉞 axes largely identical with the axe from Washitian as well as with objects from Yunnan (Xi 1991: *Fig. 3 and 6*; Li 1983: *Fig. 5*). A decorated spear-head likewise has comparanda in northern Yunnan (Yunnansheng 1983). All of these parallels allow for assigning a date around the 5-4th c. BC.

The variation in assemblages suggests internal variation within Fenjiwan. Based on number and type of ceramic vessels and other objects, I suggest distinguishing between three main groups and six sub-groups (Table 2; Figure 5). The question remains if these groups are chronologically or socially defined. Handled and spouted forms and stemmed bowls are uncommon in early settlement finds in the Southeast and at Fenjiwan all three forms occur together and in association with metal weapons suggesting a relatively late date for the Group III assemblages. Large urn forms (Groups I and II) are hardly ever associated with any of these objects. It is therefore likely that groups I-III represent chronological phases, and the difference between the sub-groups may reflect social differentiations. Based on the above parallels with objects from neighboring regions,

Phases I can be dated to the early to mid-5th, Phase II to the late 5th, and Phase III to the early 4th c. BC.

Moving south, Huili Xiaoyingpan and Xiaotuanshan, and Luquan Yingpanbao are characterized by small near-empty slate graves; a few contain large jars similar to finds from Yongdingzhen in Yunnan (Chuxiong and Yunnansheng, 1986: *Fig. 6*), as is Fenjiwan Phase I (Figure 7.38-42). Narrow-necked vases are known from all three sites and from Yongdingzhen but not from Fenjiwan, indicating an early local tradition.

The ceramics of Huili Leijiashan M1 show even more unique traits. They are high-fired fine-paste wares with surface decoration very different from the low-fired coarse ceramics with limited decoration typical for the Southeast (Figure 7.17-30). Some of the vessel forms (moderately decorated single-handled jars, vases, and goblets) resemble objects from Fenjiwan, and both sites share the custom of placing flat river cobbles into the graves. The jars with ear-shaped handles seen at Leijiashan resemble objects from Yuanmou Dadunzi and other late Neolithic to early Bronze Age sites in southern Yunnan (Yunnansheng 1977: *Fig. 17.6*), but similar forms have been reported from Fenjiwan as well. The goblet forms resemble objects from megalithic graves of Phase IIa, and the stout single-handled jars with leaf-vein impression on the bottom are not unlike objects from Phase IIb. Leijiashan M1 therefore likely dates around the 3rd c. BC, as does Huili Miaozi Laobao, whose ceramics are nearly identically with the finds from Leijiashan.

The graves of Huili Guojiabao contain high-fired fine ware as well, but forms and decoration differ substantially from those at Leijiashan (Figure 8.1-39). Guojiabao is characterized by single- and double-handled vessels, accompanied by turquoise beads, bronze buttons, and other ornaments similar from the megalithic graves of Dechang Arong, as well as large numbers of bronze weapons and ornaments virtually identical with finds from the Yanyuan Basin in the West. The bronze bracelets and some of the weapon types seen at Guojiabao and in Yanyuan are common in stone-construction graves throughout southwest China. Belt hooks and scabbard tips at Guojiabao and Yanyuan remind of finds from stone-cist graves in northwest Sichuan (Aba and Lixian 1987; Sichuansheng et al. 1999). Rabbit-head-shaped bronze ornaments appear also in earth-pit graves with or without stone installations in Yunnan (Yunnansheng, 2005). All of these comparanda date between the 4th and the 1st c. BC, as does Dechang Arong and therefore Guojiabao and the finds from the Yanyuan Basin.

The deposits of Huili Guoyuan, Luoluochong, and Zhuanchanba likewise contain objects completely different from any other finds in the Southeast (Huixian, 1977; Tao, 1982). Guoyuan and Luoluochong furnished one Shizhaishan-type bronze drum each whose form, quality, and material composition identifies them as imports from Yunnan dating to the 3-2nd c. BC (Zhongguo 1988: 37-47). The set of six *bianzhong* 編鐘 bells found at Zhuanchanba have no exact parallels anywhere else, and their mode of deposition is unique, too. Sets of bells are found in graves in many parts of China, but separate deposits are uncommon. Within the research area, only Yanyuan Laolongtou M4 contained a *bianzhong* bell and it did not come in a set; the use of sets of bells as musical instrument common to the Central Plains was therefore likely unknown here. Bells of similar form have been found in great numbers throughout Yunnan, Guangxi, Guangdong, and northern Vietnam (Falkenhausen 1988: 561-563) but the decoration and metal composition of the Zhuanchanba bells identifies the object as a local product (Hein 2013: 497-500). Overall, the bells from Zhuanchanba thus likely date to the 1st c. AD.

Going further west to Panzhihua, the available evidence is so sparse that it is difficult to decide if the area is culturally connected to the Southeast, to the West, or to the Center. Most available evidence comes from trapezoidal stone-construction graves arranged in neat rows in large cemeteries similar to graves in the upper Minjing River Valley. Only one single object from a grave at Yanyuan Yumen Wanxiao has been illustrated: a stout jar with a high-narrow neck, wide shoulders, and ring-handles that strongly remind of objects from Xichang Mimilang (Dukoushi, 1986: *Fig. 2*). Based on the parallels with Mimilang and the upper Minjiang, the graves at Yuman Wanxiao can be dated tentatively between the 7th and the 3rd c. BC.

The Northwest: Muli, Ninglang, and Yanyuan

In the Northwest, we can distinguish between two major subsections: the high-altitude mountains of Muli and the Yanyuan Basin and its surrounding mountains including Ninglang. The whole area is not very well-researched, however, and our understanding of all of these subsections is therefore patchy. The only sites reported from the utmost northwest are Muli Qingrenbao and Shaoxiang Liangzi (Sichuansheng et al. 2012). The stone building observed at Qingrenbao is unique to the research area, but similar structures have been found at a small number of sites in Yunnan, northwest, Sichuan, and Tibet (Aba et al., 2005; Sichuansheng and Ganze, 1998; Sichuansheng et al., 2004; Sichuan Daxue et al., 2007; Xizang and Sichuan 1985; Ya'an 1992; Yunnansheng et al. 2009a). These buildings range widely in date from around 2000 BC to 100 AD, but the foundations at Qingrenbao are most similar to features at Dingdong Juzhu in western Tibet which dates to the 5-2nd c. BC. The ceramics found at Qingrenbao and Shaoxiang Liangzi are largely identical in quality, forms, and decoration, comprising jars with small band-handles, vessels with flat horizontal grips, and jars with outward-flaring opening (Sichuansheng et al., 2012: *Fig. 6*). The handled vessels resemble finds from Yanyuan as well as Deqin in Northern Yunnan dating to the 4th – 1st c. BC, suggesting a similar date for the sites in Muli.

Settlement finds as this are rare, though, and the majority of objects known from the western mountains were retrieved from the art market. A comparison with provenienced finds has shown that most of them came from local graves, but some items of foreign origin were present both among the art-market finds and in local graves (Hein 2014b). The finds from Yanyuan in particular show an astonishing combination of various outside connections and local particularities. The elongated double-handled jars and small single-handled cups from Ninglang Daxingzhen are similar to objects found at Dechang Arong and other sites belonging to Phase IIb of the megalithic graves (Yunnansheng Bowuguan, 1983b: *Fig. 5-6*). On the other hand, the combinations of metal object (swords with three-pronged and torqued hilt, axes, ring-shaped pommel knives, spear heads with side-loops, mirrors) is virtually identical with grave assemblages from Deqin Yongzhi in Yunnan (Yunnansheng 1975). The sword types and mirrors in particular are common in stone-cist graves on the upper Minjiang but occur even more often in northern Yunnan, particularly Deqin and Chuxiong (Aba and Chengdu 2009). All of the comparanda date between the 5th and 1st c. BC, but considering the parallels with Arong and the lack of composite weapons or Han-type vessels, Ninglang Daxingzhen may fall into a narrower window of 4-3rd c. BC.

Various types of double-handled vessels with double-spiral motif occur at Daxingzhen, in grave M4 at Yanyuan Laolongtou (Figure 8.40), at Deqin Yongzhi (Yunnansheng 1975: *Fig. 4-5*), and in stone-cist graves along the upper Minjiang River Valley. The sub-type most similar to the

vessels from Laolongtou M4 dates to the 2nd – 1st c. BC. The drum and bell in Laolongtou M4 are similar to objects from Shizhaishan (3rd – 2nd c. BC), but the iron spearheads resemble objects from Kunming Yangfutou Phase IV, suggesting a slightly later date (Yunnansheng et al. 2005). Yanyuan Maojiaba M1 and M2 both held Shizhaishan-style drums, but in M2 the drum was associated with a composite weapon and an iron spear similar to the one in Laolongtou M4, and Maojiaba M1 was devoid of iron objects. Maojiaba M2 is therefore likely contemporaneous with Laolongtou M4, and Maojiaba M1 dates earlier.

The surface finds from Yanyuan Caojiawan are very similar to the Laolongtou M4 assemblage as well, suggesting a similar date. Laolongtou M11 furnished a different type of spearhead accompanied by a dagger with fish-tail handle. This dagger type has parallels in Laolongtou M7 and Deqin Nagu in Yunnan (Yunnansheng 1983) but also at several sites in Northwest Sichuan (Baoxingxian 1982). Laolongtou M7 and M11 therefore date between the 2nd and early 1st c. BC. The rich assemblages of Laolongtou M6 and M9 are very similar to each other, suggesting closeness in date. They both contain stout double-handled vessels very different from those in M4 but similar to objects from megalithic graves of Phase III. Furthermore, there are similarities with objects from Maojiaba M1, suggesting that Laolongtou M6 and M9 date to the early 2nd c. BC.

The Southwest: Yongsheng and its Surroundings

The only extensively excavated but unfortunately unpublished site in the Southwest is Yongsheng Duizi, a site located in the utmost southwest of the research area, has thick cultural layers with settlement finds and various types of graves that the excavators have assigned to four separate phases. The earliest phase is represented by the settlement remains of Layer 4, the second by earth-pit graves and house remains, the third by the settlement remains of Layer 3, and the fourth by various kinds of stone-construction graves, cremation burials in urns, and earth-pit graves.³ Based on comparisons with finds from other sites, it can be assessed that Duizi was occupied over a long time period from around 2000 BC to 200 BC or later but the internal chronology shows some gaps.

The grey sand-tempered ceramic vessels with wide openings and fine corded ware, net pattern, or sometimes finger-tip impressed appliqué bands of Phase I are accompanied by stone woodworking tools and bone needles. These assemblages resemble finds from Yunnan such as Yongping Xinguang (Yunnansheng et al. 2002) and Yuanmou Dadunzi (Yunnansheng 1977) dating to 2000-1700 BC. The ceramics in the Phase II earth-pit graves (grey polished and black-slipped fine ware with fish-bone pattern or incised lines, mostly stout jars, some with handles, carinated bowls, and wide-bellied vases) are very similar to objects from the early Bronze Age (1200-900 BC) layers of Yinsuodao, likewise in Dali (Yunnansheng et al. 2009a). Duizi Phase II therefore likely dates to the same period, as does Phase III. Phase III is characterized by undecorated sand-tempered pottery jars, basins, stemmed bowls, and a considerable number of crescent-shaped double-perforated knives. Such knives are common in early Bronze Age sites in Yunnan such as Jianchuan Haimenkou (Yunnansheng 1958) and Yinsuodao. The Phase IV earth-pit graves contain stemmed bowls resembling objects from Kunming Yangfutou (Yunnansheng et al. 2005) and other cemeteries around Lake Dian. The stone-construction graves furnished double-handled jars with middle ribs in the handles similar to ceramics from Yanyuan Laolongtou M4 but in a more elongated form. Other object forms that the Phase IV graves share with the graves in

Yanyuan are composite weapons, ring-pommel knives, mirrors, *ling* bells, cowrie shells, turquoise beads, and specific arrowhead forms. Based on these parallels, Phase IV can be dated to the late 2nd or early 1st c. BC. The gap between Phases III and IV is puzzling, but as the material from Duizi still awaits publication, the internal chronology is difficult to assess.

Apart from Yongsheng Duizi, settlement sites in the Southwest are only known through surface finds that are insufficiently published and can therefore not be securely dated. Much further field research is needed before secure dates can be assigned.

Discussion: Prehistoric Cultural Developments in Southwest Sichuan

Based on the evidence from stratigraphy, typology, and radiocarbon dates described above, it becomes finally possible to compile a comprehensive chronological table for southwest Sichuan and adjacent parts of Yunnan (Table 3), an area that has so far been disregarded precisely for this lack of an established chronological framework and its overall patchy data. This table can then serve as a basis for sketching the past cultural developments in this region (Table 4).

Earliest Habitations and Local Particularities: The Southeast

The earliest traces of human occupation in southwest Sichuan have been identified in the caves and early open-air sites in Huili and Panzhihua. Judging by the stone-tool assemblages, their makers practiced a hunter-gatherer lifestyle, using caves and open-air sites as seasonal stations or hunting camps. Non-agricultural forms of subsistence may have continued among later groups who already produced ceramics. The local environment likely contributed to the emergence – and potentially persistence – of these groups of hunter-gatherers: Panzhihua specifically is dominated by mountainous terrain not ideal for agriculture but extremely rich in plant and animal species, while the subtropical climate allows for practicing this form of subsistence all year around (Hein 2015).

By contrast, places in the fertile valleys of Huili such as Yangjia Wuji and Houzidong became home to early agriculturalists (Hein 2015). The ceramics of these sites show strong local particularities but the stone tools resemble finds from Yunnan. This connection with places further south continues throughout later periods. Assemblages similar to finds from Houzidong were reported from numerous other sites in Huili, reflecting the existence of a local cultural group practicing incipient agriculture. The somewhat coarser assemblage from Houzidong likely reflects an earlier phase of this development.

Ceramics belonging to the same tradition also appear in the slightly later stone graves at Huili Guantianshan/Yingpanshan, Xiaotuanshan, Xiaoyingpan, and Luquan Yingpanbao. Stone installations in graves are common throughout all of southwest China, but the specific form of stone-cist grave construction and associated burial rituals observed at these sites are a local particularity. Limited amount of stone installations remain common in the Southeast up to the time of Huili Fenjiwan. What happens during the phase between the early stone-construction graves and the later earth-pit graves with or without stone installations found at Fenjiwan and other sites is not quite clear. The settlement site of Huili Dongzui is the only known site falling into this time period. Mode of subsistence, stone-tool assemblages, and ceramic quality at Dongzui continue earlier local traditions, but some of the ceramic forms bear resemblance to objects from Dechang

Wangjiaping in the Anning River Valley. From this point onward, the Southeast is thus integrated into the developments in other parts of the research area.

The ceramic assemblage of the large cemetery and settlement site of Huili Fenjiwan clearly developed from local traditions, but connections with Xichang can also be observed (Hein 2014a). All graves at Fenjiwan are small and sparingly equipped with very few ceramics and rarely a single weapon, tool or ornament made of stone or metal. The local burial customs are therefore very different from the megalithic-grave tradition of the Anning River Valley but show some continuity with earlier local traditions. The form and content of all the graves are very similar, indicating that at least in death differences between various sub-groups of the population seem to have played no significant role. The large number of objects found in the single grave of Leijiashan M1, however, indicates that this changed in post-Fenjiwan times.

Nevertheless, the ceramic forms at Leijiashan and Miaozi Laobao mostly hail back to Fenjiwan. By contrast, the nearly contemporaneous graves of Huili Guojiabao furnished a completely different assemblage of few ceramics and a large number of metal objects largely identical with finds from Yanyuan. These graves therefore likely held the remains of a small group of people who had come from Yanyuan, potentially to facilitate trade between the two places (Hein 2014b). Otherwise, metal objects remain rare in graves in the Southeast. The stone molds found at Huili Washitian show that the rich local metal resources were exploited, but metal production techniques remained rudimentary and high-quality foreign objects such as the drums deposited at Huili Guoyuan and Luoluochong were not emulated or at least not deposited in the ground.

Although the drums were apparently highly valued, metal does not seem to have played a significant role in the definition of cultural and/or personal identity in the grave context. In this as in many other aspects, the Southeast remained remarkably resistant to outside influence but went through its own course of development. The reason for this probably lies in geographic preconditions. The Southeast is highly fertile and has ample natural resources that attracted early inhabitants from Yunnan to move north. Later Xichang influences on local ceramic traditions show that people from the Anning River came to the Southeast, too. The Center is an attractive place to settle, but metal resources are scarce. It is therefore not unlikely that this uneven distribution of natural resources was a decisive factor that linked the various sub-regions closer together.

Center of Developments and Thoroughfare: The Anning River Valley

The major developments in the Anning River Valley seem to originate from its central area during the mid-3rd millennium BC. Early sites with microlithic assemblages and coarse ceramics were mainly observed in the South, i.e., close to Huili. Otherwise, early settlements are dominated by similar coarse stone-tools reflecting a mixed economy, and the shallow single layers of the settlements indicate shifting habitation. The slight differences in tool assemblages between various sites in the Xichang area reflect slightly different modes of subsistence, some groups relying heavily on fishing, others on agriculture or hunting (Hein 2015). Differences in ceramic decoration between center (Xichang), north (Mianning), and south (Dechang, Miyi, and Yanbian) reflect the existence of at least three separate production traditions, presumably associated with distinct groups. The differences in tool assemblages furthermore indicate that the communities in the South maintained a mixed form of economy but adopted most of the ceramic assemblage common in the center from where it spread both north and south. In Mianning, only the inhabitants of Gaopo and Zhaojiawan produced a completely different ceramic assemblage indicating their separate and

possibly foreign identity. Their descendants either left the area or were assimilated into local groups without their own ceramic tradition leaving considerable traces in the later local material.

As similarities in ceramic assemblages between Hanyuan in northern Sichuan and Yuanmou in northern Yunnan show, the Anning River Valley served as a transit corridor between North and South (Hein 2013). Within this corridor itself, outside influence can be seen from the time of Xichang Lizhou onward, when double-handled vessels reminding of Qijia cultural traditions become common. Xichang Qimugou even revealed high-fired ceramic vessels and metal objects so similar to objects from Gansu and Qinghai that a direct intense connection is very likely. Over time, the local ceramic production techniques resulting in unevenly fired reddish-brown ware dominated, but the foreign double-handled forms remained.

The various groups inhabiting the Anning River Valley became increasingly integrated with the emergence of megalithic graves. Before, single primary interments with limited numbers of ceramic vessels in earth-pit graves had been the norm. Then the first small above-ground stone graves used in single instances of interment were built in Xichang. Although they were not reopened, post-burial rituals must have taken place around them as pits containing sets of drinking vessels and ewers show. Over time, these graves grew in size and came to be reopened several times for successive instances of primary interment. Some graves were entered to sort the bones or conduct other rituals; drinking rituals also took place in or around the grave as the sets of ceramics at the grave entrances show. Processions between these graves, which were arranged in clusters and highly visible in the landscape, may have taken place as well (Hein, forthcoming).

This conspicuous custom of erecting and using megalithic graves in increasingly elaborate rituals spread from the center to the North and South and even to the eastern mountains of Puge and Xide, reaching northernmost Mianning only in Phase III. At the same time, the ceramic material at local settlement sites such as Mianning Sanfentun changed drastically, becoming identical to what is known from megalithic graves at Xichang. The same applies to the South where local forms are replaced by ceramics identical to those in Xichang. In Puge, however, the graves differ somewhat in form and associated rituals: they are smaller – potentially in reaction to the lack of flat ground in the eastern mountains – and they contain ceramics following local form traditions and bovine teeth as ornaments and arrowheads as weapons instead of the bracelets, earrings, knives, and sharpening stones known from megalithic graves in the Anning River Valley. The earlier finds from Puge show distinct local particularities in ceramic quality and form. The stone-tool assemblages observed at settlement sites reflect a strong reliance on hunting and to a lesser extent fishing, i.e., subsistence patterns that are sensible adaptations to the densely forested local mountains. The difference in ceramic material furthermore shows that the inhabitants of Puge likely were culturally different from the inhabitants of the Anning River Valley. This difference continues into later phases, in spite of the shared custom of erecting megalithic graves.

Both men and women of all ages were buried in megalithic graves both in the Anning River Valley and the eastern mountains but infants were missing. The urn pits at Xichang Yingpanshan and Qimugou may thus have been child burials conducted by the same people who built the megalithic graves. The earth-pit graves Xichang Qimugou M1 and M2 are equipped with assemblages exceedingly like those in megalithic graves of Phase IIa, so part of the adult population was likewise buried separately for unknown reasons. As far daily life is concerned, the tool assemblages from megalithic graves and related settlements in the Center show an agricultural and probably settled mode of living involving agriculture supplemented by hunting and in some places fishing. Only the sites in Puge show a continued primary reliance on hunting. Metal seems

to have mainly been used for personal ornaments and only secondarily weapons or tools. So far, no traces of local metal working have been found, but the coarse quality and considerable number of metal ornaments indicate that they were locally produced. Copper could have been mined locally, but at least the tin must have come from Huili or places further south in Yunnan or even further afield in Southeast Asia. The same applies to other parts of the research area where no tin sources have been reported.

A Place in Between: The Remote Mountains of the Northeast

Although technically located in the northeastern mountains, Puge and Xide with their moderate climate and less forbidding elevation had a stronger connection to the Anning River Valley than to the remote and cold mountains of Zhaojue, Meigu, and Yuexi. The few known settlement remains and the small number of tools found in graves show that here hunting was an important subsistence practice, but woodworking tools and teeth of domesticated pigs found in graves show that mixed forms of economy were common (Hein 2015). What is most striking about the graves in the Northeast is the great diversity of grave forms that occur in close vicinity to each other, with assemblages combining objects from different traditions. Some imitate Han brick graves, others resemble small megalithic graves, but all contain calcinated ropes (a particular local custom) next to Han imports and ceramics reminding of finds from Puge or even Huili. In spite of these noticeable continuities visible in some graves, the slight spatial separation between graves of different construction indicates that they were built for and by people belonging to different groups that were probably culturally defined. The considerable number of objects showing foreign influence or import identifies the Northeast as a meeting point of goods and people of different origin. Who they were and why they came still remains to be investigated. The sizable number of Han objects in later graves in Zhaojue and Meigu and the appearance of Han brick graves are considerably easier to explain. The Han were trying to find a way into and through the Liangshan region toward Yunnan, and they seem to have settled the area in increasingly large groups, thus leaving their trace in the form of burial monuments of their own and influence on the local customs.

The case of Yuexi is less clear, simply because the area is only known through preliminary survey work. Various kinds of stone-construction graves, earth-pit graves, and even megalithic graves have been reported, and the objects found so far are very similar to finds from Han-period stone-cist graves in the upper Minjiang Valley. The whole Northeast was therefore a transit region and meeting place of people from many different places; how exactly they interacted with each other and with the local population can only be established through further fieldwork.

A Different World: The High-Altitude Mountains, Plateaus, and Valleys of the West

In the western mountains, three different culture-geographic entities can be distinguished: the wide and fertile high-altitude valleys of Yongsheng with their deeply layered settlement sites; the high-altitude Yanyuan basin and the surrounding mountains of Yanyuan and Ninglang that are dominated by various types of graves with stone installations and weapon-rich assemblages; and Muli with its remarkable stone-built houses on high mountain tops.

Some of the settlement sites in Yongsheng were used over a considerable time by a population relying mainly on agriculture for their subsistence (Hein 2015). The burial customs were varied and changed over time. The assemblages of the inhumation graves are dominated by

ceramics combined with a few simple personal ornaments, tools, and very rarely knives or arrowheads. Ceramics from all periods show strong connections to central Yunnan but connections toward the north are likewise visible, but its connection with the Anning River Valley is remote at the most.

The same applies to Yanyuan and Ninglang. It is uncertain when this area was first inhabited, but the few small single-layered settlement sites and the stone-tool and animal-bone assemblages observed in graves and settlements alike may suggest that up to the Han period agriculture played only a minor role and settlement locations shifted frequently. The grave forms and object assemblages reflect close connections with Northwest Sichuan, but overall local particularities prevail. The graves are dominated by weapons accompanied by some personal ornaments and one or two ceramic vessels each, so quite the opposite of the assemblages from Yongsheng. A few graves in the Yanyuan Basin are particularly rich, containing large numbers of imports next to particular local forms. As argued elsewhere, this unevenness in material wealth likely reflects dominance of an elite over a particular resource (likely salt) that allowed them to trade widely and be buried in 'grand style' (Hein 2014b).

How Yanyuan and Ninglang developed over time is difficult to say as all known finds cover only a period of about 200 years. The same applies to Muli, from where to date only two prehistoric sites have been reported. The stone houses observed here show a very close connection with developments in eastern Tibet and Northwest Sichuan, likewise high-altitude locations in a harsh environment. Remarkable are also the animal-bone assemblages which are dominated by deer and other wild species while domesticated pig and cattle are rare. Bones of domesticated horses have also been found (Sichuansheng et al. 2012). Here we can interestingly see a connection with Yanyuan, where horse heads and long bones accompanied by horse gear were interred in some of the richest graves, reflecting the local importance of horses and horse riding. It remains to be seen if settlements similar to those in Muli will be found further south as well and if graves similar to those in Yanyuan and Ninglang appear in Muli, too, or if the two places only share subsistence systems and emphasis on horse riding but are otherwise culturally distinct.

Conclusion

As the comparative analysis of material from the different kinds of sites has shown, there are remarkable discrepancies in archaeological assemblages between the various sub-regions. Especially the subsistence systems are clearly influenced by the particular environmental preconditions in these different sub-regions. Nevertheless, in spite of these local particularities – some economical others culturally defined – the various sub-regions of southwest Sichuan and neighboring regions of Yunnan were in constant contact and become increasingly closely connected over time. Especially the conspicuous custom of building megalithic graves and conducting complex rituals in and around them seems to have attracted a considerable number of people from various cultural backgrounds throughout the Anning River Valley and beyond. The more remote mountains of the Northeast were not integrated in this development, but they received various influences from further south and further east, so many, in fact, that it is currently difficult to say what the specific local developments may have looked like. Here, further field research is badly needed before a long-term developmental sequence can be established.

The Southeast is considerably better understood than the Northeast and undergoes a development of its own quite independent from what occurs in the Anning River Valley. Even

though some elements of the stone-tool and ceramic assemblages show close connections with neighboring parts of Northeast Yunnan, the overall tradition is quite distinct, as are the burial customs. Later ceramics from at least the 7th c. BC onward show that the Southeast was in no way completely isolated from the Anning River Valley and the ceramics in the Northeast show that interaction in this direction commenced even earlier. The graves of Huili Guojiabao show that people from the Southwest even relocated to the Southeast, but local object production and burial customs seem to have remained remarkably unchanged by these outer influences.

The western mountains are a very different case and not unified in their development either. The Yongsheng area is more closely integrated into broader cultural developments in Yunnan, but the rich variety of grave and interment forms next to each other practiced by apparently flourishing settled agricultural communities are so far unique even in Northwest Yunnan. Here, again, further field research is needed to understand if what we see at Yongsheng Duizi is a localized phenomenon limited to the area around Chenghai Lake remains to be seen.

The rich graves of the “horse-riding warriors” of Yanyuan and Ninglang are a rather short-lived but complex phenomenon that shows the integration of the southwestern mountains into a wide-ranging exchange network. Nevertheless, the combination of various foreign elements and local particularities is rather unique; however, further fieldwork is needed before we can claim to understand the local origins of some of these peculiar later developments. The Northwest, in turn seems to be part of a cultural sphere spanning the southern rim of the Tibetan Plateau. That these phenomena expanded so far east is surprising, but further surveys and excavations will hopefully show if the two sites discovered so far are exceptions or representative examples of a wider local tradition.

Overall, it has thus become clear that the Liangshan region is a meeting place of people from various parts of western China and beyond and a transit region between vastly different cultural phenomena. It is therefore important to integrate the local archaeological material into future studies on the prehistory of Sichuan, Yunnan, or Western China in general. At the same time, the various ecological niches characterizing the region have led to the development of peculiar local cultural phenomena that are well-worth to be studied in their own right. The chronological scheme and outline of a developmental sequence has provided a basis for such studies. In the future, this scheme will have to be amended with the help of newly excavated material and sequences of radiocarbon dates that desperately need to be taken over all known sites in a systematic manner. Even in the absence of such dates obtained through archaeometric research, this study has shown that traditional methods of typology and comparison combined with an awareness of the importance of the natural environment and the wide variety of mechanisms of inter-group exchange can be powerful tools in establishing prehistoric cultural developments within their temporal framework and natural environment. Furthermore, it has become clear that the Liangshan Region is not the remote backwater but rather a crucial intersection point between the northern steppe and the fertile plains of Yunnan and Sichuan that is crucial for establishing the chronology of Southwest China and writing the cultural history of the prehistoric Chinese border regions.

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Tables

Table 1. Characteristics of main phases and sub-phases of megalithic graves in the Anning River Valley containing ceramics and other objects.

Phase	Ceramics	Other Objects	Graves	Examples
I	<i>forms</i> : few ceramics, urns, jars, goblets, cups <i>quality</i> : high-fired, slipped, fine ware	no other objects	small graves, single instance of interment	Xichang Dayangdui DM1 and DM2, Xichang Tianwangshan M10
IIa	<i>forms</i> : spouted jars, high-stemmed goblets, round-bodied goblets <i>quality</i> : high-fired, slipped, fine ware	perforated knives, spindle whorls, stone arrowheads, metal bracelets, grinding tools	small and medium-sized graves, group interments, reopening	Xichang Qimugou M1 and M2, Maliucun H1 Bahe Baozi M4 and M6 Yanjiashan M3
IIb	<i>forms</i> : spouted jars with foot and knob-handles, round-bodied goblets, small vessels with thin double-handles <i>quality</i> : high-fired, fine and sand-tempered ware	spindle whorls, arrowheads, bronze knives, bracelets, bone rings	medium-sized graves, group interments, reopening	Xide Lake Sihe M6, Xichang Lianghuan
IIIa	<i>forms</i> : single- and double-handled round-bodied vessels, often with water-ripple application, spouted vessels with high trumpet-shaped neck and handle <i>quality</i> : coarse sand-tempered, low-fired, red-brown ceramics	stone and metal arrowheads, grinding rods, adzes, chisels, spindle whorls, metal bracelets, beads, earrings, hair combs	medium-sized or large graves (only Puge grave small), group interments, reopening, entering	Upper Qimugou, Dechang Wangjiatian, Mianning Sanfentun, Miyi Wanqiu M1-2, Puge Xiaoxingchang BM1
IIIb	<i>forms</i> : single- and double-handled vessels with elongated body, often elaborate handle decoration, spouted vessels with high straight neck <i>quality</i> : coarse sand-tempered, low-fired, red-brown ceramics	beads, metal knives, arrowheads, metal bracelets, perforated animal teeth (Puge only)	medium-sized or large graves (only Puge grave small), group interments, reopening, entering	Puge Xiaoxingchang AM1, Dechang Arong M1, M3, and M4
IV	<i>forms</i> : single and double-handled undecorated small vessels with long-narrow handles, spouted jars with high neck, small footed beakers <i>quality</i> : high-polished, high-fired, red fine ware	bronze knives, iron swords, large metal hair combs, clothing applications, <i>ling</i> bells, metal bracelets, rings, earrings, beads, grinding rods	large or very large, multiple interments, re-entering of grave	Xichang Xijiao M1, Xichang Hexi M3, Xide Lake Sihe M8, Xichang Huangshuitang M1, Xide Guluqiao M1, Xichang Wanao M1

Table 2. Grave groups at Huili Fenjiwan.

Group	Urn/Jar	Other Ceramics	Tools	Metal
<i>Ia</i>	1-3 urns and/or jars	no other ceramics	no tools	no metal

<i>Ib</i>	0-1 jar	no other ceramics	1 stone axe	no metal
<i>Ic</i>	1-2 jars	no other ceramics	1-2 spindle whorls	no metal
<i>II</i>	1-5 urns and/or jars	bowls, goblets, ewers, vases, type C single- or type D or E double-handled jar, cups; up to 12 vessels	0-2 stone ornaments and/or spindle whorls	no metal
<i>IIIa</i>	0-1 jar	no other ceramics	no tools	1-2 bronze bracelets, finger rings, or other metal ornaments
<i>IIIb</i>	0-3 urns or jars	1-2 goblets, ewers, type I single-handled jars, <i>dou</i> , or bowls	0-1 stone arrows	1-5 bronze objects (bracelets, ornaments, swords, spears, <i>yue</i> axes)
<i>IIIc</i>	1-2 urns or jars	1 <i>dou</i> or single-handled jar of type I	0-1 spindle whorls	no metal

Table 3. Chronological table. ¹

Date	Anning River Valley	Northeast	Southeast	Northwest	Southwest
pre 2500 BC (<i>Paleolithic to early Neolithic</i>)			Renhe Huilongwa, Xicaoping Huili Yangjia Wuji		
2500-1600 BC (<i>Neolithic to early Bronze Age</i>)			Huili Houzidong Xiqu Yanwan, Renhe Gonghe		
	Dechang Maojiakan		Huili Hewanwan, Liantang, Tangjiaba, Tianbacun Renhe Yangjiashan		
	Dechang Wangjiaping (2360 ± 69 cal. BC) Xichang Henglanshan 4 (2545 ± 47 cal. BC)		Huili Guantianshan/ Yingpanshan		

¹ The terminology used in the Chinese literature on this topic is based on the chronology of the Central Plains, speaking of Late Spring and Autumn (771-476 BC) to Early Warring States (475-222 BC) as the earliest dates and early Eastern Han (AD 24-220) for the end point of this burial tradition (e.g., Sichuansheng et al., 2006a, Jiang Zhanghua 2009). This table therefore lists both absolute and conventional historical dates for easy reference.

	Xichang Henglanshan 3 (2112 ± 62 cal. BC)				
	Xichang Ma'anshan Xichang Qimugou I Lower Yingpanshan (Xichang) Early Dongjiapo (Dechang)	Zhaojue Pusu Bohuang M3-4, M8-9, M11	Huili Xiaoyingpan Huili Xiaotuanshan Luquan Yingpanbao		Yongsheng Duizi I
	Early Lizhou (Xichang)	Puge Tianba Puge Zhongcun	Huili Dongzui I		Yongsheng Jiaodingshan
1600-1046 BC (Shang)	Early Dayangdui (Xichang) Middle Lizhou graves (Xichang) Xichang Yangjiashan Mianning Gaopo Layer 3 (1379 ± 39 cal. BC) Mianning Zhaojiawan Layer 2 (1316 ± 47 cal. BC) Mianning Gaopo Layer 1 (1179 ± 47 cal. BC)	Puge Xiaoxingchang settlement	Huili Dongzui II		Yongsheng Duizi II
1046-771 BC (Western Zhou)	Late Lizhou (Xichang) Mianning Zhaojiawan Layer 3 (972 ± 53 cal. BC) Early Dongjiapo (Dechang)				Yongsheng Duizi III
	Middle Dayangdui (Xichang) Xichang Mimilang Late Dongjiapo (Dechang)	Puge Wadaluo Zhaojue Fuchengqu M1-3	Yanbian Yumen Wanxiao?		
771-476 BC (Spring and Autumn)	Megalithic Graves I Late Dayangdui (Xichang) Tianwangshan M10				
	Megalithic Graves IIa Upper Yingpanshan (Xichang) Xichang Qimugou M1 and M2 Xichang Maliucun H1	Puge Xiaoxingchang AM1-2 Xide Lake Sihe Zhaojue Erba Keku M2, M4, M9	Huili Fenjiwan I		

		Puge Xiaoxingchang BM1-3 (601 ± 127 cal. BC)			
475-222 BC (Warring States)	Megalithic Graves IIb Dechang Guoyuan M2		Huili Fenjiwan II		
	Megalithic Graves IIIa Xichang Qimugou Layer 3 Dechang Wangjiatian		Huili Washitian Huili Fenjiwan III	Muli Qingrenbao Muli Shaoxiang Liangzi	
	Mianning Sanfentun Miyi Wanqiu M1-2		Huili Leijiashan M1 Huili Miaozi Laobao	Ninglang Daxingzhen Muli Qingrenbao Muli Shaoxiang Liangzi	
221-206 BC (Qin)	Megalithic Graves IIIb Dechang Arong M1, M3, M4		Huili Guojiabao	Muli Qingrenbao Muli Shaoxiang Liangzi	
206 BC - AD 9 (Western Han)	Megalithic Graves IV Xichang Qimugou M3 and W1		Huili Guoyuan and Luoluochong	Yanyuan Laolongtou M6, M9 Yanyuan Maojiaba M1 Muli Qingrenbao Muli Shaoxiang Liangzi	
			Huili Zhuanchangba	Yanyuan Caojiawan Yanyuan Laolongtou M4 Maojiaba M2	Yongsheng Duizi IV
		Yuexi Liaojiashan Yuexi Huayang		Yanyuan Laolongtou M7 and M11	
AD 9-23 (Wang Mang)	Megalithic Graves IV	Zhaojue Eba Buji M1-2			

		Eba Buji M3			
AD 24-220 <i>(Eastern Han)</i>	Megalithic Graves IV	Zhaojue Pusu Bohuang M1, Zhaojue Chike Boxixian M1-6			

Figures

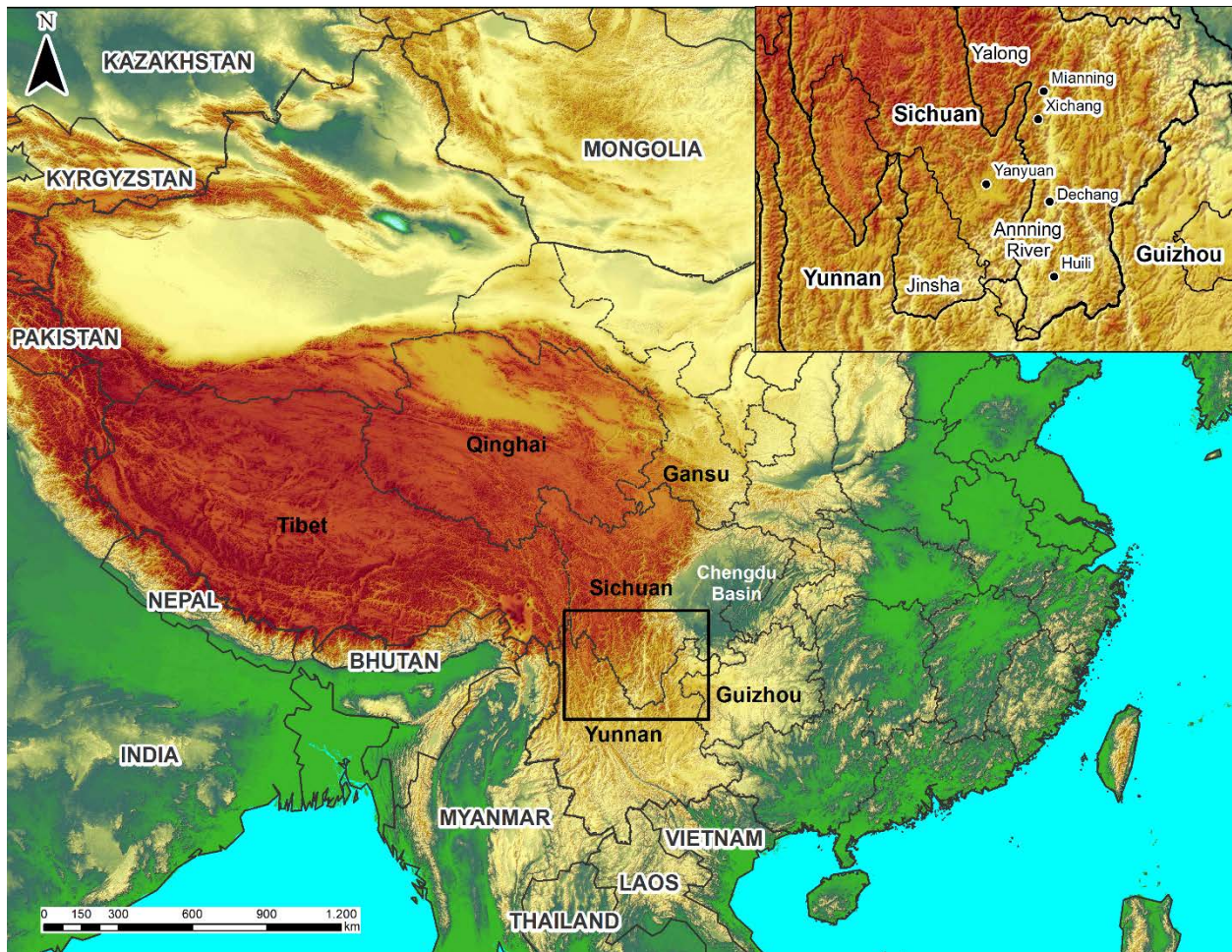


Figure 1. Geographic location of the research area.

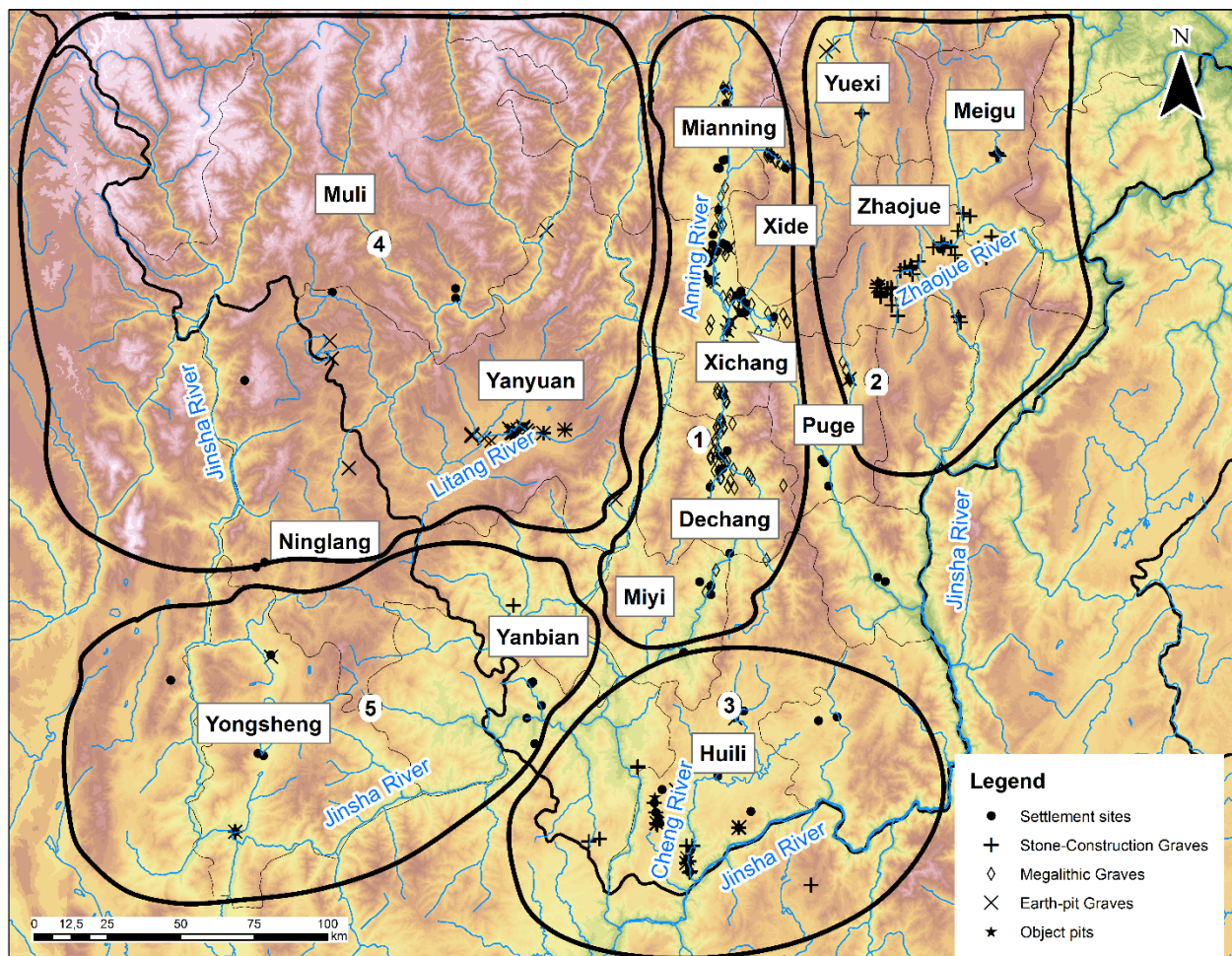


Figure 2. Sub-regions and archaeological sites in Southwest Sichuan: 1. Anning River Valley; 2. Northeast; 3. Southeast; 4. Northwest; 5. Northeast.

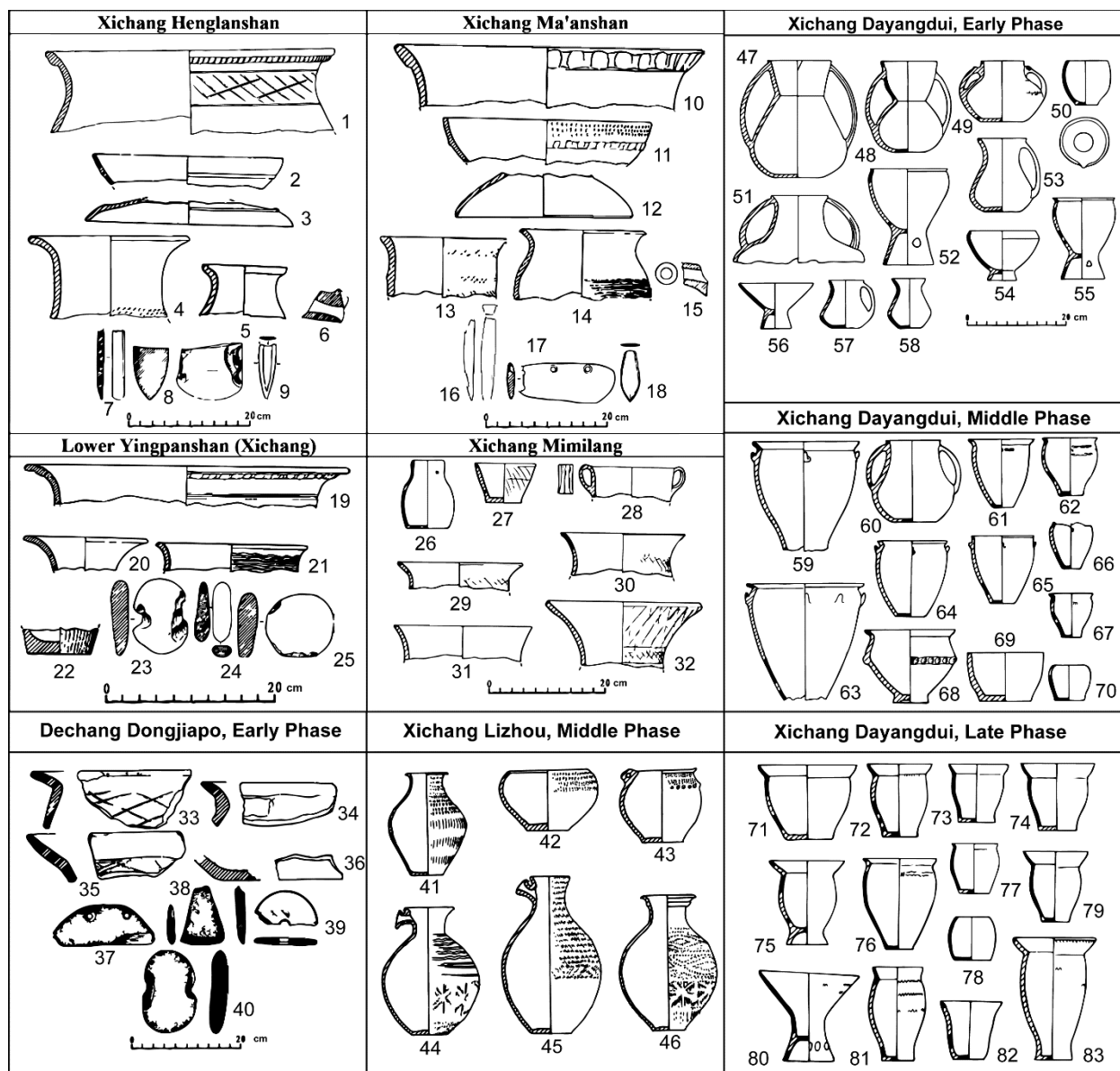


Figure 3. Ceramics and stone tools from: 1-9. Xichang Henglanshan (Early Henglanshan) (after Chengdu et al., 2006: Fig. 8-11); 10-18. Xichang Ma'anshan (after Chengdu et al., 2006: Fig. 17-22); 19-25. Lower Yingpanshan (after Chengdu et al. 2007b: Fig. 4-6); 26-32. Xichang Mimilang (after Liangshan et al., 2006: Fig. 10-11 and Jiang Zhanghua 2007: Fig. 4); 33-40. Dechang Dongjiapo, Early Phase (after Zhou, 2011: Fig. 6-7, 13, 14, 19, 20); 41-46. Xichang Lizhou, Middle Phase (after Jiang, 2007: Fig. 2-3); 47-83. Xichang Dayangdui (after Xichangshi et al., 2004: Fig. 7, 18, and 25).

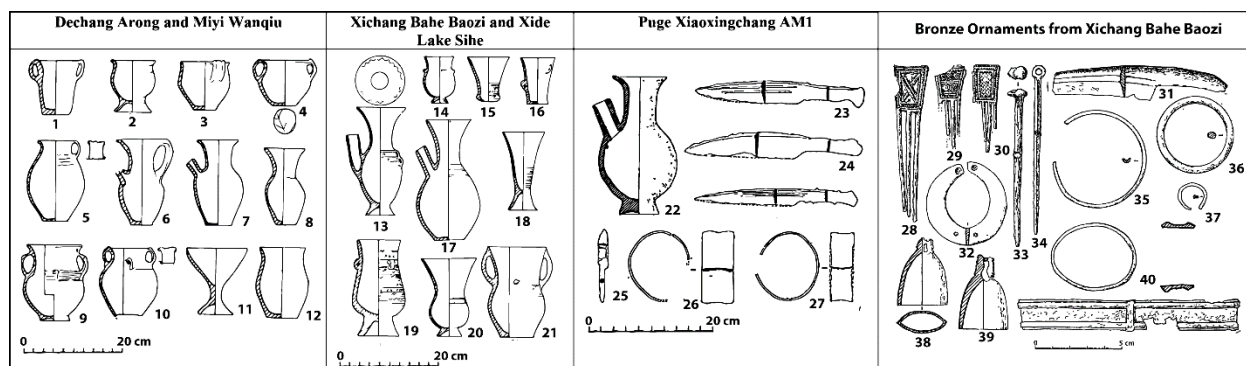


Figure 4. Finds from megalithic graves: ceramics from 1.-4., 6., 8., 9., 11., 12. Miyi Wanqiu; 5., 7., 10. Dechang Arong; 13., 14., 16.-19. Xichang Bahe Baozi; 15. and 20. Xide Lake Gongshe (after Jiang, 2007: Fig. 6-7); 22.-28. Xiaoxingchang AM1 (Liangshan and Pugexian, 1987: Fig. 8-9); 29.-40. bronze ornaments from Xichang Bahe Baozi (after Sichuansheng and Anninghe, 1976: Fig. 2).

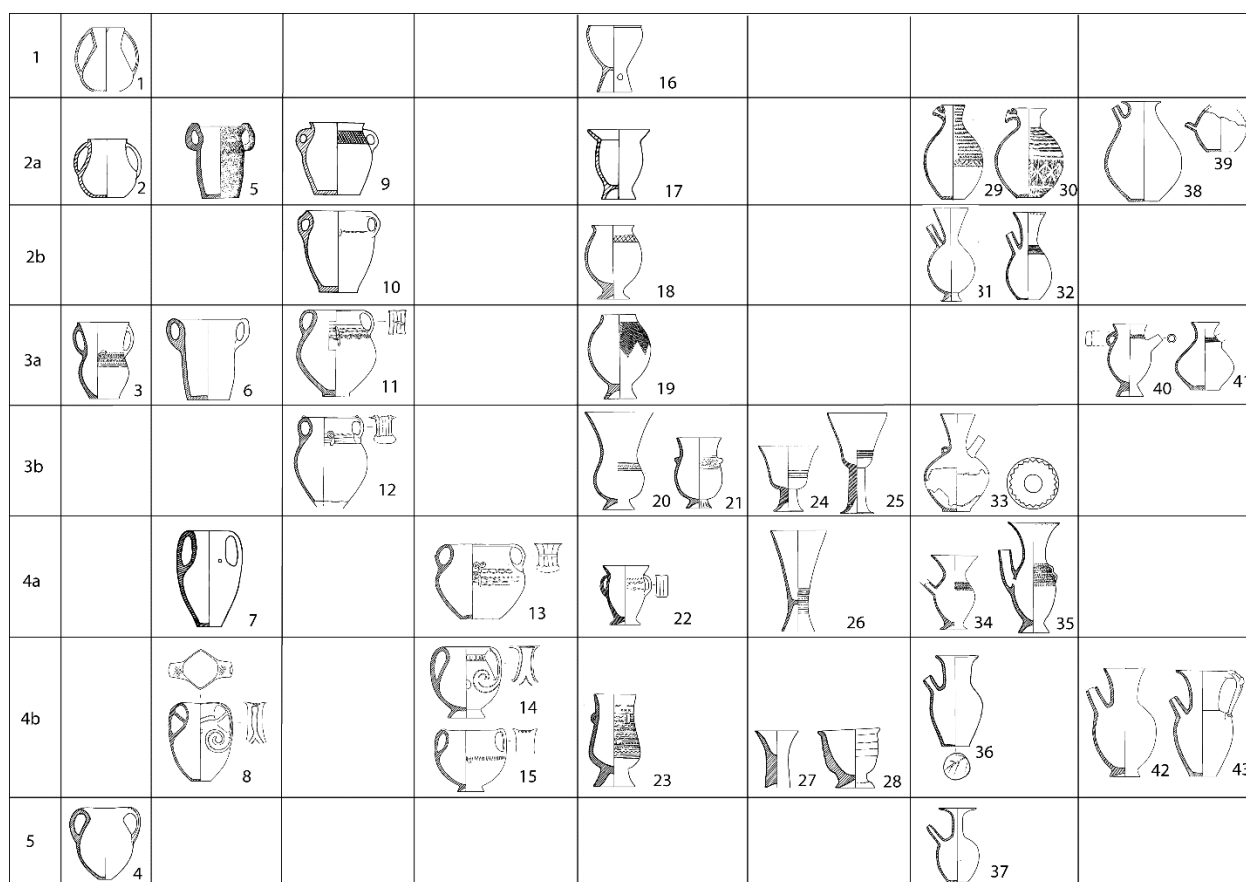


Figure 5. Typological development of double-handled jars (columns 1-4), goblets (column 5), small-footed cups (column 6), and spouted jars (column 7) found throughout the Liangshan Region [objects from Dechang Arong (12., 42.), Huili Fenjiwan (9., 18., 38.-39.), Huili Guojiabao (10.), Huili Leijishan (19.), Miyi Wanqiu (6., 11., 43.), Ninglang Daxingzhen (7.), Puge Xiaoxingchang (36.), Xichang Bahe Baozi (20.-21., 28., 32.), Xichang Dayangdui (1.-2., 16.-17.), Xichang Hexi (27.), Xichang Lianghuan (22., 34.), Xichang

Lizhou (5., 29.-30.), Xichang Maliucun (33., 40.-41.), Xichang Qimugou (24.-26., 31.), Xichang Xijiao (4., 37.), Xide Lake Sihe (3., 23., 35.), Yanyuan Laolongtou (8., 13.-15.)].

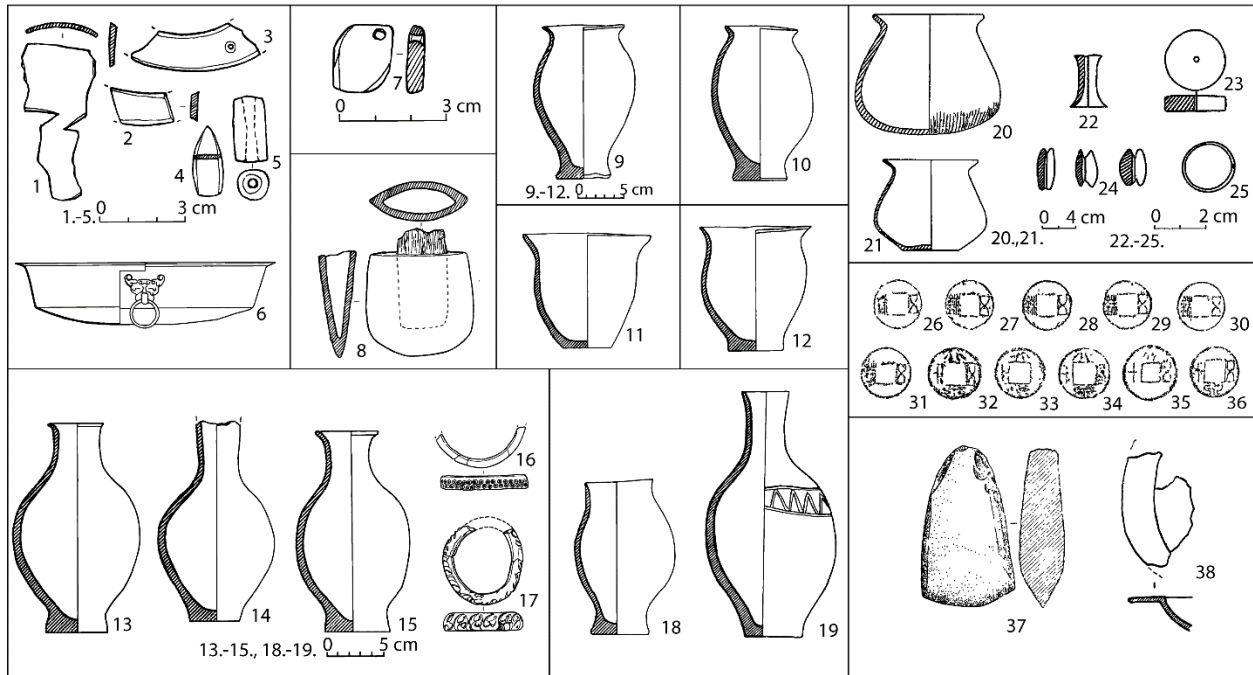


Figure 6. Objects from stone-construction graves in: 1.-19. Zhaojue Eba Buji M1 (1.-6.), M2 (7.), and M3 (8.), from Pusu Bohuang M2 (10.), M3 (13.-17.), M4 (18.-19.), M8 (12.), M9 (13.-15.), M11 (11.) (after Liangshan, Sichuan, and Zhaojuexian 2009); 20.-36. Zhaojue Chike Boxixian (after Liangshan, Sichuan, Zhaojuexian 2010: Fig. 8-9); 37.-38. Erba Keku M4 (after Liangshan Yizu 1981: Fig. 7-8).

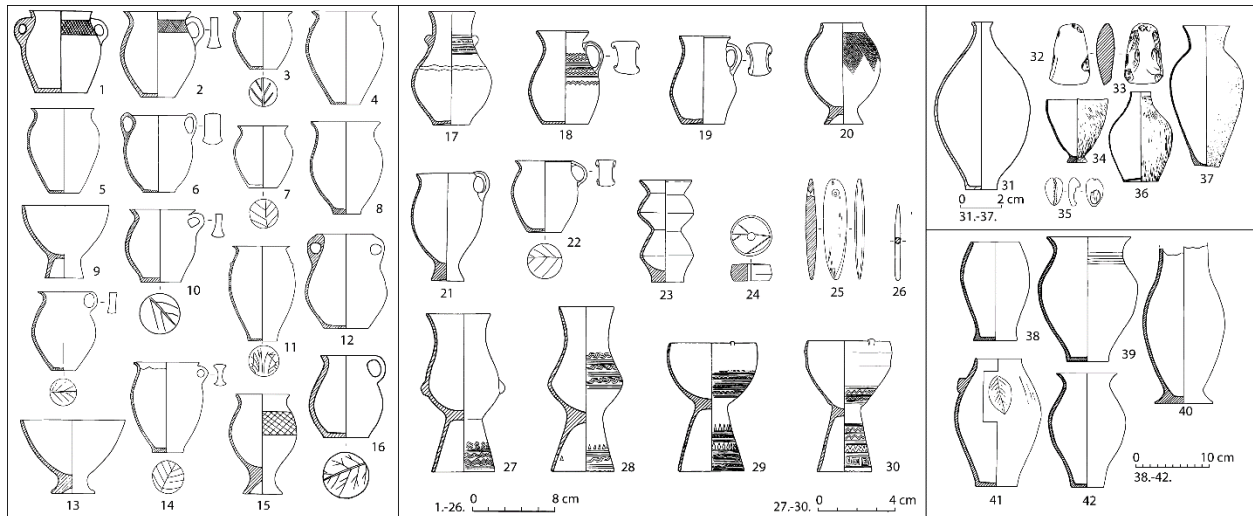


Figure 7. Objects from Huili: 1.-16. Huili Fenjiwan (after Huilixian et al., 2004: Fig. 11); 17.-30. Huili Leijiashan M1 (after Chengdu et al., 2009a: Fig. 3-5); 31.-37. Luquan Yingpanbao; 38.-42. Huili Xiaoyingpan (after Kunmingshi et al., 2007: Fig. 8 and 18; Sichuansheng et al., 2009: Fig. 7-9).

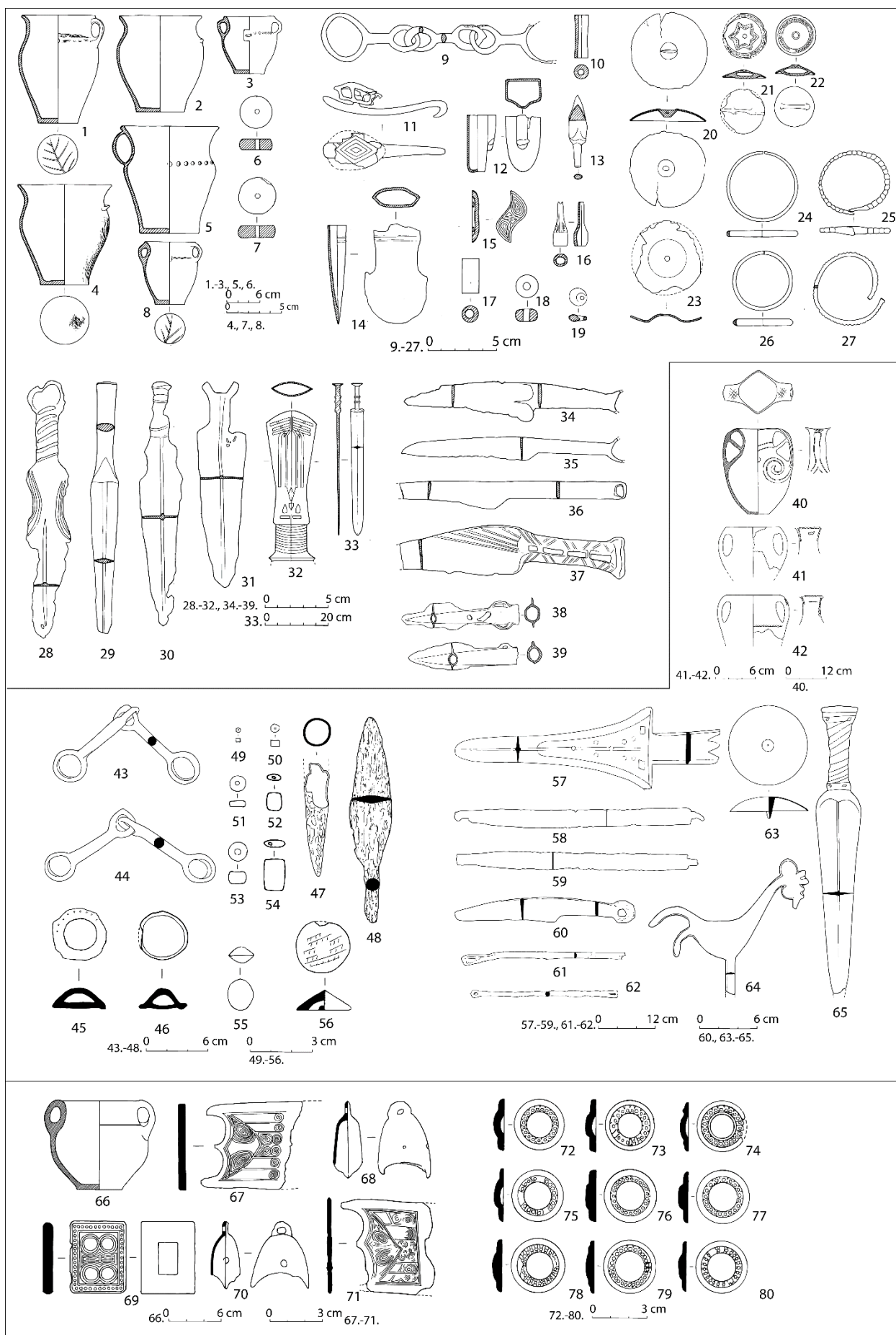


Figure 8. Ceramics and bronze objects from Huili Guojiabao (1.-39.) and Yanyuan Laolongtou:
1.-39. Huili Guojiabao (after Chengdu, 2010: Fig. 4-10); 40.-65. Yanyuan Laolongtou M4
(after Liangshan and Chengdu 2009: 4-6); 66.-80. Yanyuan Laolongtou M9 (after
Liangshan and Chengdu 2009: Fig. 18-19).

Appendix: Overview of source material for information on sites in Southwest Sichuan.²

Name	Characters	Source
Liangshan Yi Autonomous Prefecture, Sichuan Province 四川省凉山彝族自治州		
Dechang Arong	德昌阿榮	Sichuansheng et al., 2006a and 2006d; Zhongguo, 2009; data collection
Dechang Ayong	德昌阿雍	Zhongguo, 2009
Dechang Ayue	德昌阿月	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Cizhuiping	德昌茨竹坪	Zhongguo, 2009
Dechang Daba	德昌大壩	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Dachangba	德昌大廠壩	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Dashipai	德昌大石排	Sichuansheng et al., 2006a; Zhongguo, 2009, Liu, 2009; data collection
Dechang Dianma	德昌點馬	Zhongguo, 2009
Dechang Dongjiapo	德昌董家坡	Zhou, 2011; data collection
Dechang Fangjiacun	德昌方家村	Zhongguo, 2009; data collection
Dechang Ganhai	德昌干海	Sichuansheng, 2006a; Zhongguo, 2009
Dechang Guadi	德昌瓜地	data collection
Dechang Guoyuan	德昌果園	Xichang, 1978b; Sichuansheng et al., 2006a; Zhongguo, 2009; data collection
Dechang Hejia Fenshan	德昌何家墳山	Sichuansheng et al., 2006a
Dechang Hejiashan	德昌何傢山	Zhongguo, 2009
Dechang Hezui	德昌何嘴	Liu Hong 2009
Dechang Hongmiao	德昌紅廟	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Hongmiaocun	德昌紅廟村	Zhongguo, 2009
Dechang Huangjiaba	德昌黃家壩	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Liangsanpo	德昌涼傘坡	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Luojiaba	德昌囉家堡	Sichuansheng et al., 2006a; Zhongguo, 2009; material collection
Dechang Ma'anzi	德昌馬鞍子	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Maliliang Zhanbei	德昌麻栗糧站北	Zhongguo, 2009
Dechang Maliliang Zhannan	德昌麻栗糧站南	Sichuansheng et al., 2006a; Zhongguo, 2009; material collection
Dechang Maojiaba	德昌毛傢壩	Zhongguo, 2009
Dechang Maojiakan	德昌毛傢坎	Sichuansheng and Liangshan, 2007; data collection
Dechang Minzhucun	德昌民主村	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Nanhua Baobao	德昌南華包包	Sichuansheng et al., 2006a

² The words “data collection” indicates for which sites I had access to original material.

Dechang Nanhuagong	德昌南華宮	Zhongguo, 2009
Dechang Shaba	德昌沙坝	Sichuansheng et al., 2006a
Dechang Shaorenba	德昌燒人坝	Sichuansheng et al., 2006a; material collection
Dechang Shengli	德昌勝利	Sichuansheng et al., 2006a
Dechang Shuijingwan	德昌水井灣	Sichuansheng et al., 2006a
Dechang Shuitangcun	德昌水塘村	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Wangjiaping	德昌汪傢坪	Chengdushi et al., 2009
Dechang Wangjiatian	德昌王家田	Sichuansheng and Liangshan, 2006; data collection
Dechang Wujia	德昌吳傢	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Xiaogao	德昌小高	Sichuansheng et al., 2006a
Dechang Xiaoliusuo	德昌小六所	Sichuansheng et al., 2006a; data collection
Dechang Xiaomiaoshan	德昌小廟山	Sichuansheng et al., 2006a; Zhongguo, 2009; data collection
Dechang Xinmin Wujia	德昌新民吳	Sichuansheng et al., 2006a
Dechang Yingzipo	德昌銀子坡	Zhongguo, 2009
Dechang Yongxing	德昌永興	Zhongguo, 2009; data collection
Dechang Yuejin	德昌躍進	Sichuansheng et al., 2006a; Zhongguo, 2009
Dechang Zhangjiaba	德昌張家坝	Sichuansheng et al., 2006a; Zhongguo, 2009
Huidong Dashanba	會東大山包	Zhongguo, 2009; data collection
Huidong Liujiawan	會東劉傢灣	Zhongguo, 2009
Huili Dachonggou	會理大冲溝	Zhongguo, 2009
Huili Dazhaizi	會理大寨子	Personal communication Liu Hong
Huili Dongzui	會理東咀	Chengdu et al., 2008a; data collection
Huili Fenjiwan	會理樊箕灣	Tang, 1992; Huilixian et al., 2004, Zhongguo, 2009, Sichuansheng et al., 2009; data collection
Huili Gong'anju (Huili94)	會理公安局	Tang, 1996
Huili Guantianshan/ Yingpanshan	會理觀田山	Sichuansheng et al., 2009; data collection
Huili Guojiabao	會理郭傢堡	Sichuansheng et al., 2009; Zhongguo, 2009; data collection
Huili Hedongtian	會理河東田	data collection
Huili Hekoucun	會理河口村	Tang, 1993
Huili Hewanwan	會理河灣灣	Tang, 1992
Huili Houzidong	會理猴子洞	Sichuansheng et al., 2009; Zhongguo, 2009; data collection
Huili Jinmei	會理金梅	Zhongguo, 2009
Huili Kangzipo	會理康芋坡	Data collection

Huili Leijiashan	會理雷傢山	Chengdu et al., 2009a; Zhou et al., 2010; data collection
Huili Liantang	會理蓮塘	Tang, 1992; data collection
Huili Miaozi Laobao	會理廟子老堡	Sichuansheng et al., 2009; data collection
Huili Puling	會理普隆	Tang, 1992; Zhongguo, 2009
Huili Qiaoba	會理喬坝	Personal communication Liu Hong
Huili Raojiadi	會理饒家地	Data collection
Huili Shenjiafen	會理沈傢墳	Zhongguo, 2009
Huili Tangjiaba	會理唐傢坝	Tang, 1992
Huili Tangjiapo	會理唐傢坡	Tang, 1992; Zhongguo, 2009
Huili Tianbacun	會理田坝村	Sichuansheng et al., 2009
Huili Washitian	會理瓦石田	Tao, 1981; Zhongguo, 2009; Sichuansheng et al., 2009; data collection
Huili Wuhuangqing	會理吳黃箐	Tang, 1999; Zhongguo, 2009
Huili Xiao'aozi	會理小凹子	Zhongguo, 2009; data collection
Huili Xiaotuanshan	會理小團山	Tang, 1999; Zhongguo, 2009
Huili Xiaoyingpan	會理小營盤	Kunmingshi et al., 2007; Sichuansheng et al., 2009
Huili Xicaodi	會理蓆草地	Zhongguo, 2009
Huili Yangjia Wuji	會理楊傢屋基	Zhongguo, 2009
Huili Yimen Xiacunxiang	會理益門下村鄉	Tang, 1999
Huili Yingpanshan	會理營盤山	Zhongguo, 2009
Huili Yuanbaoshan	會理元寶山	Zhongguo, 2009; data collection
Huili Yunshancun	會理云山村	Zhongguo, 2009
Meigu Azu Bugu	美姑阿足	Sichuansheng et al., 2006a
Meigu Jiukou Jiaogu	美姑九口腳谷	Sichuansheng et al., 2006a
Meigu Shengdu Wage	美姑聖都瓦各	personal communication Liu Hong 12/2010
Meigu Wajujue Cunnan	美姑瓦姑覺村南	Sichuansheng et al., 2006a
Meigu Wajujue Dongbei	美姑瓦姑覺東北	Sichuansheng et al., 2006a
Meigu Wajujue Dongnan	美姑瓦姑覺東南	Sichuansheng et al., 2006a
Mianning Beishanba	冕寧北山坝	Sichuansheng et al., 2006a; Zhongguo, 2009
Mianning Chengguan	冕寧城關	Yang, 2001
Mianning Gaopo	冕寧高坡	Data collection
Mianning Gaopo Wanwan	冕寧高坡灣灣	Liu, 2009; Zhongguo, 2009; data collection
Mianning Hujiacui	冕寧胡家嘴	Liu, 2009; data collection
Mianning Manshuiwan	冕寧漫水灣	Zhongguo, 2009

Mianning Miaoshan	冕寧廟山	Liu, 2009; Zhongguo, 2009; data collection
Mianning Ruoshuicun	冕寧若水村	Sichuansheng et al., 2006a; Zhongguo, 2009
Mianning Sanfentun	冕寧三分屯	Liangshan and Mianningxian, 2006; data collection
Mianning Sankuaishi	冕寧三塊石	Sichuansheng et al., 2006a; Zhongguo, 2009
Mianning Songlin Laojie	冕寧松林老街	Sichuansheng et al., 2006a
Mianning Wenjiatun	冕寧文家屯	Liu, 2009
Mianning Xiangshi	冕寧响石	Sichuansheng et al., 2006a; Zhongguo, 2009
Mianning Xiaogoudi	冕寧小溝地	Zhongguo, 2009
Mianning Zhaojiawan	冕寧趙家灣	Chengdushi et al., 2012; data collection
Ningnan Heinigou	寧南黑泥溝	Zhongguo, 2009
Ningnan Tangjiawan	寧南唐家灣	Zhongguo, 2009
Puge Amucun	普格阿木村	Zhongguo, 2009
Puge Heping	普格和平	Zhongguo, 2009
Puge Kangli	普格康利	Data collection
Puge Tianba	普格田坝	Liangshan and Pugexian, 1982
Puge Tuantian	普格團田	Liangshan and Pugexian, 1982
Puge Wadaluo	普格瓦打洛	Liangshan, 1983a; Zhongguo, 2009, data collection
Puge Xiaoxingchang	普格小興場	Liangshan and Pugexian, 1982 and 1987; Liangshan et al., 1982; Sichuansheng et al., 2006a; Zhongguo, 2009; data collection
Puge Zhongcun	普格中村	Liangshan and Pugexian 1982
Xichang Bahe Baozi	西昌坝河堡子	Sichuansheng and Anninghe 1976; Xichang et al. 1978; Sichuansheng et al., 2006a; Liu, 2009; Zhongguo, 2009; data collection
Xichang Baijiazhai	西昌白家寨	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Beishan	西昌北山	Sichuansheng et al., 2006a; Zhongguo, 2009; Liangshan, 1990
Xichang Bengtukan	西昌崩土坎	Zhongguo, 2009
Xichang Changcun	西昌長村	Zhongguo, 2009
Xichang Chenyuancun	西昌陳遠村	Zhao, 1981; Huang, 2000; Liu and Wang, 2007
Xichang Dabaobao	西昌大包包	Zhongguo, 2009
Xichang Dabaozi	西昌大堡子	Sichuansheng et al., 2006a; Zhongguo, 2009; data collection
Xichang Dacoba	西昌大草坝	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Damaliu	西昌大麻柳	Zhongguo, 2009
Xichang Daniba	西昌大泥坝	Liu, 2009
Xichang Dashiban	西昌大石板	Sichuansheng et al., 2006a; Zhongguo, 2009; data collection

Xichang Dayangdui	西昌大洋堆	Xichangshi et al., 2004; Sichuansheng et al., 2006a; Zhongguo, 2009; material collection
Xichang Dongping	西昌東坪	Jiang Xianjie 1994; Sichuansheng et al., 2006
Xichang Dongyuemiao	西昌東嶽廟	Zhongguo, 2009
Xichang Guanjiashan	西昌官家山	Zhongguo, 2009
Xichang Guanshan	西昌關山	Liangshan, 1983a; Sichuansheng et al., 2006a; Zhongguo, 2009; Liu, 2009
Xichang Guihuacun	西昌桂花村	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Henglanshan	西昌橫欄山	Xichangshi 1998; Chengdu et al., 2006; data collection
Xichang Hexi Gongshe	西昌河西公社	Xichang, 1978c; Sichuansheng et al., 2006a; Zhongguo, 2009, data collection
Xichang Hongqi	西昌紅旗	Sichuansheng et al., 2006a
Xichang Huangshuitang	西昌黃水塘	Liangshan, 1990; Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Jiangjiabao	西昌蔣傢包	Zhongguo, 2009
Xichang Jianxin	西昌建新	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Liguoshan	西昌李果山	Sichuansheng et al., 2006a
Xichang Lijiagou cun	西昌李傢溝村	Zhongguo, 2009
Xichang Lizhou	西昌禮州	Zhao, 1981; Huang, 2000; Liu and Wang, 2007
Xichang Luzhuishan	西昌盧嘴山	Sichuansheng et al., 2006a, Zhongguo, 2009
Xichang Ma'anshan	西昌馬鞍山	Chengdu et al., 2007b; data collection
Xichang Mahuangkan	西昌螞蟥坎	Liu, 2009
Xichang Maliucun	西昌麻柳村	Sichuansheng et al., 2006a and 2006b; data collection
Xichang Maomaoshan	西昌帽帽山	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Mimilang	西昌咪咪啞	Liangshan et al., 2006; Sichuansheng et al., 2006a; data collection
Xichang Qimugou	西昌棲木溝	Chengdu et al., 2008a and 2009c; Sichuansheng et al., 2006a and 2006c; Chengdu et al., 2009b; data collection
Xichang Qujia Laokan	西昌瞿家老坎	Liu, 2009
Xichang Reshuitang	西昌熱水塘西	Zhongguo, 2009
Xichang Sanhe	西昌三和	Liu, 2009
Xichang Shajiapo	西昌沙家坡	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Shangxiang	西昌上香	Zhongguo, 2009
Xichang Shantou	西昌山頭	Liu, 2009
Xichang Shaojia Gaokan	西昌肖傢高坎	Liu, 2009
Xichang Shijia Baozi	西昌施傢堡子	Zhongguo, 2009; data collection

Xichang Shizuizi	西昌石嘴子	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Shuanggudui	西昌雙谷堆	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Tanshan	西昌潭山	Zhongguo, 2009
Xichang Tianbacun	西昌田坝村	Sichuansheng et al., 2006a
Xichang Tianwangshan	西昌天王山	Liangshan, 1984; Zhongguo Wenwu 2009; data collection
Xichang Tuanbao	西昌團堡	data collection
Xichang Tuanshanbao	西昌團山包	Liu Hong 2009; Zhongguo, 2009
Xichang Tu'ershan	西昌兔兒山	Liu Hong 2009
Xichang Wanao	西昌窪壩	Sichuansheng et al., 2006a and 2006d; Zhongguo, 2009; data collection
Xichang Wuguishan	西昌烏龜山	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Xiaohuashan	西昌小華山	Liangshan, 1990; Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Xiaojia Gaokan	西昌肖傢高坎	Xichang, 1978d; Liangshan, 1983b; Sichuansheng et al., 2006a; data collection
Xichang Xijiao Gongshe	西昌西郊公社	Xichang, 1978d, Liangshan, 1983b, Sichuansheng et al., 2006a, data collection
Xichang Xingsuo	西昌星宿	Sichuansheng et al., 2006a
Xichang Xinxingcun	西昌新興村	Zhongguo, 2009
Xichang Xinying	西昌新營	Sichuansheng et al., 2006a; Zhongguo, 2009
Xichang Xixicun	西昌西溪村	Sichuansheng et al., 2006a
Xichang Yangjiashan	西昌楊傢山	Liu, 1981; Liangshan, 1987a; Zhongguo, 2009
Xichang Yanjiashan	西昌羊山坡	Liangshan, 1983a; Sichuansheng et al., 2006a; data collection
Xichang Yezhugou	西昌野豬溝	Sichuansheng et al., 2006a
Xichang Yingpanshan	西昌營盤山	Chengdu et al., 2007a; data collection
Xichang Yuanjiashan	西昌袁家山	Liangshan, 1983a; Sichuansheng et al., 2006a; Zhongguo, 2009; data collection
Xichang Yunduanshan	西昌云斷山	Zhongguo, 2009
Xichang Zengjiabao	西昌曾傢堡	Zhongguo, 2009
Xichang Zhengjiafen	西昌鄭傢墳	Zhongguo, 2009
Xichang Zhongguanpo	西昌鍾官坡	Liu, 2009
Xichang Zhongjia Shanzui	西昌鍾傢山嘴	Zhongguo, 2009
Xide Guluqiao	喜德轆轤橋	Liangshan, 1987b; Sichuansheng et al., 2006a; Zhongguo, 2009
Xide Guoyuancun	喜德果園村	Zhongguo, 2009
Xide Lake Sihe	喜德拉克公社四合	Liangshan, 1977 and 1978; Sichuansheng et al., 2006a; Zhongguo, 2009

Xide Lanfenba	喜德爛墳坝	Sichuansheng et al., 2006a; Zhongguo, 2009
Xide Laoniuchang	喜德老牛場	Zhongguo, 2009
Xide Qingli	喜德清理	Sichuansheng et al., 2006a; Zhongguo, 2009
Xide Wadegu	喜德瓦得姑	Wang, 1979; Zhongguo, 2009
Xide Wamu	喜德瓦木	Wang, 1979
Xide Wenjiaba	喜德溫傢坝	Zhongguo, 2009
Xide Wuhe	喜德伍合	Sichuansheng et al., 2006a; Zhongguo, 2009
Yanyuan Bei Ganhaixiang	鹽源北干海乡	Liangshan and Chengdu, 2009
Yanyuan Boshucun	鹽源博樹村	Zhongguo, 2009
Yanyuan Caojiawan	鹽源曹傢灣	Zhongguo, 2009; Li and Liu, 1992
Yanyuan Ganhai Sandadui	鹽源干海三大隊	Data collection
Yanyuan Gesa	鹽源格撒	Zhongguo, 2009; Huang, 1983
Yanyuan Gong'anju	鹽源公安局	Liangshan and Chengdu, 2009; data collection
Yanyuan Haimatang	鹽源海馬塘	Zhongguo, 2009
Yanyuan Jiaodingshan	鹽源轎頂山	Sichuan et al., 1984; Zhongguo, 2009
Yanyuan Jiejiafen	鹽源解傢墳	Zhongguo, 2009
Yanyuan Laolongtou	鹽源老龍頭	Liu and Li, 1991; Liu, 1998; Liu and Tang, 2006; Lang, 2006; Jiang, 2008 and 2009; Liangshan and Chengdu, 2009; Zhongguo, 2009; data collection
Yanyuan Luowa	鹽源洛瓦	Liangshan and Chengdu, 2009
Yanyuan Maojiaba	鹽源毛傢坝	Liu, 1991; Liu and Tang, 2001
Yanyuan Meiyu Bacun Sanzu	鹽源梅雨八村三組	personal communication Liu Hong 11/2011
Yanyuan Nanbianhe	鹽源南边河	Liangshan and Chengdu, 2009
Yanyuan Tangguan Liandi	鹽源唐光連地	Liangshan and Chengdu, 2009
Yanyuan Tangshidi	鹽源唐氏地	Zhongguo, 2009
Yanyuan Wuming Baobao	鹽源無名包包	Zhongguo, 2009
Yanyuan Wuqiu	鹽源烏丘	Xichang, 1978a
Yanyuan Wushidi	鹽源伍氏地	Zhongguo, 2009; Liangshan and Chengdu, 2009
Yanyuan Xiaoguan Liangzi	鹽源小官梁子	Zhongguo, 2009
Yanyuan Xiaohebian	鹽源小河邊	Zhongguo, 2009; Liangshan and Chengdu, 2009
Yanyuan Xifan	鹽源西藩	Zhongguo, 2009
Yanyuan Yingpanshan	鹽源鹽源公安局	Zhongguo, 2009; Liangshan and Chengdu, 2009
Yanyuan Yingpanshan	鹽源營盤山	Zhongguo, 2009
Yanyuan Zhushiba	鹽源豬屎坝	Liangshan and Chengdu, 2009

Yuexi Huayang	越西華陽	Zhongguo, 2009
Yuexi Liaojiashan	聊家山	Zhongguo, 2009; Mao and Zou, 1991
Yuexi Qu'ershan	越西雀兒山	Zhongguo, 2009
Yuexi Wajimu	越西瓦吉木	Zhongguo, 2009
Zhaojue Ada Bobu	昭覺阿打波補	Sichuansheng et al., 2006a
Zhaojue Bagu Erjue	昭覺巴古爾覺	Liangshan et al., 2009
Zhaojue Bakeku Cun	昭覺巴克苦村	Liangshan et al., 2009
Zhaojue Chike Boxixiang	昭覺齒可波西鄉	Liangshan et al., 2009
Zhaojue Daba Gongshe	昭覺大壩公社	Liangshan, 1977
Zhaojue Dabaozi Geze	昭覺大堡子格則	personal communication Zhao Deyun 04/2011
Zhaojue Da'edou Gezi	昭覺大俄都格則	personal communication Zhao Deyun 04/2011
Zhaojue Dawenquan	昭覺大溫泉	Liangshan, 1977
Zhaojue Dipo Cier	昭覺氏坡此爾	Zhongguo, 2009
Zhaojue Eba Buji	昭覺俄巴佈吉	Liangshan et al., 2009
Zhaojue Erba Keku	昭覺尔巴克苦	Liangshan, 1977 and 1981c; Liangshan et al., 2010 and 2011
Zhaojue Ergu Zege	昭覺尔姑	personal communication Zhao Deyun 04/2011
Zhaojue Erwu	昭覺二五	Zhongguo, 2009
Zhaojue Fuchengqu	昭覺附城區	Liangshan, 1977 and 1981c; Liangshan et al., 2010 and 2011
Zhaojue Geze Yangpeng	昭覺格則羊棚	personal communication Zhao Deyun 04/2011
Zhaojue Haba Qiehe	昭覺哈巴切合	personal communication Zhao Deyun 04/2011
Zhaojue Hangan Yide	昭覺汗干依德	personal communication Zhao Deyun 04/2011
Zhaojue Hebo	昭覺合波	Personal communication Liu Hong
Zhaojue Heiluo	昭覺黑洛	personal communication Zhao Deyun 04/2011
Zhaojue Jike Jiejue/ Layimu	昭覺吉克傑覺	Liangshan et al., 2009
Zhaojue Jinzi Niaobu	昭覺金子鳥佈	Liangshan et al., 2009
Zhaojue Keri Watuo	昭覺軍屯	Zhongguo, 2009
Zhaojue Kujia Ebu	昭覺克日瓦托	personal communication Zhao Deyun 04/2011
Zhaojue Machu Nawo	昭覺庫家俄佈	Zhongguo, 2009
Zhaojue Mucuo Naijie	昭覺馬处納窩	Liangshan et al., 2009
Zhaojue Muergguo	昭覺木措乃姐	Zhongguo, 2009
Zhaojue Mujueke	昭覺木爾果	Zhongguo, 2009
Zhaojue Naituo	昭覺莫覺柯	Zhongguo, 2009
Zhaojue Niaopo	昭覺乃托	Liangshan et al., 2009

Zhaojue Pusu Bohuang	昭覺烏坡	Liangshan et al., 2009
Zhaojue Qianjinshe	昭覺濮蘓波湟	Zhongguo, 2009
Zhaojue Sikaixiang	昭覺前進社	Zhongguo, 2009
Zhaojue Siyi Ergu	昭覺四開鄉	Zhongguo, 2009
Zhaojue Teluocun	昭覺司益爾古	Liangshan et al., 2009
Zhaojue Tiaowoba	昭覺特洛村	Zhongguo, 2009
Zhaojue Waluo Geci	昭覺跳窩坝	Zhongguo, 2009
Zhaojue Watuo	昭覺瓦洛格側	Zhongguo, 2009
Zhaojue Wazhaishan	昭覺瓦托	Liangshan, 1977 and 1981c; Liangshan et al., 2010 and 2011
Zhaojue Yibijia	昭覺瓦寨山	personal communication Zhao Deyun 04/2011
Zhaojue Yihe Geci	昭覺依合格側	Zhongguo, 2009
Panzhihua City, Sichuan Province		
Miyi Hejiaba	米易何傢坝	Zhongguo, 2009
Luquan Yingpanbao	祿勸營盤寶	Kunmingshi et al., 2007
Miyi Lianhua Gongshe	米易蓮花公社	Data collection
Miyi Sanjingxiang	米易三井巷	Sichuansheng et al., 2006a
Miyi Tianba	米易田坝	Sichuansheng et al., 2006a
Miyi Wanqiu	米易灣丘	Liangshan, 1981; Liu and Zou, 1995; Sichuansheng et al., 2006a
Miyi Yuanjiabao	米易袁傢寶	Zhongguo, 2009
Miyi Zhaizishan	米易寨子山	Liu, 2009
Renhe Baihushan	米易白虎山	Sichuansheng et al., 2006a
Renhe Gonghe	仁和共和	Zhongguo, 2009
Renhe Huilongwa Cave	仁和同龍灣洞穴	Zhongguo, 2009
Renhe Xiawan	仁和下灣	Zhongguo, 2009
Renhe Xicaoping	仁和席草坪	Zhongguo, 2009
Renhe Yangjiashan	仁和楊傢山	Zhongguo, 2009
Xiqu Yanwan	西區岩灣	Zhongguo, 2009
Yanbian Huimin	鹽源惠民	Zhongguo, 2009
Yanbian Pulongcun	鹽源普隆村	Zhongguo, 2009
Yanbian Xicaodi	鹽源席草地	Zhongguo, 2009
Yanbian Xinlin	鹽源新林	Zhongguo, 2009
Yanbian Yongxing	鹽源永興	Zhongguo, 2009
Yanbian Yumen Wanxiao	鹽源漁門完小	Zhongguo, 2009; Dukoushi, 1968

Yunnan Province		
Ninglang Cunyi	寧蒗翠依	Zhongguo and Yunnansheng, 2001
Ninglang Daxingzhen	寧蒗大興鎮	Yunnansheng Bowuguan, 1983b; Zhongguo and Yunnansheng, 2001
Ninglang Jinyangcun	寧蒗金錫村	Zhongguo and Yunnansheng, 2001
Ninglang Kaijicun	寧蒗開基村	Zhongguo and Yunnansheng, 2001
Ninglang Pijiangcun	寧蒗皮匠村	Zhongguo and Yunnansheng, 2001
Yongsheng Duizi	永勝堆子	Yunnansheng et al., 2012; data collection
Yongsheng Haiyancun	永勝海沿村	Zhongguo and Yunnansheng, 2001
Yongsheng Laoying	永勝老營箐	Zhongguo and Yunnansheng, 2001
Yongsheng Longtan	永勝龍澤銅器	Zhongguo and Yunnansheng, 2001
Yongsheng Lujiajie	永勝陸傢界	Zhongguo and Yunnansheng, 2001
Yongsheng Qiaodiping	永勝蕎地坪	Zhongguo and Yunnansheng, 2001
Yongsheng Sankuaishi	永勝三塊石	Zhongguo and Yunnansheng, 2001
Yongsheng Taoyingcun	永勝陶營村	Zhongguo and Yunnansheng, 2001
Yongsheng Yanjiaqing	永勝嚴傢箐銅鼓	Zhongguo and Yunnansheng, 2001

¹ The Chinese characters for all site names can be found in the appendix and are not repeated throughout the text.

² Here and in the following, the dates were calibrated using OxCal online radiocarbon calibration using IntCal13 with an error range of 2 σ (https://c14.arch.ox.ac.uk/oxcalhelp/hlp_curves.html).

³ As the material is unpublished, all descriptions on Yongsheng Duizi are based on personal handling of the excavated material during a short stay in Yunnan and a presentation given at a conference in 2010 (Yunnansheng, 2010). The author was not granted permission to use any images for publication, so here descriptions must suffice.