Hongshan Regional Organization in the Upper Daling Valley

大凌河上游流域
红山文化区域性社会组织

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匹兹堡大学比较考古学中心
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2014

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In addition to the authors of this report, the people listed below carried out the fieldwork upon which this volume is based. Whatever advances we may have made in understanding the dynamics of Hongshan societies have been built on the effort and energy they put into collecting the data in the field and in the laboratory.

本书报告的大凌河上游流域考古研究项目是经过中国国家文物局批准，由中国辽宁省文物考古研究所、中国人民大学、美国夏威夷大学和匹兹堡大学合作完成。

2009、2010、2011 年，在辽宁省喀左县开展了田野工作。密歇根大学 Timothy J. Horsley 于 2011 年开展了磁法勘测工作。中国社会科学院考古研究所赵志军完成了浮选样本的分析工作。2012 年，在辽宁省文物考古研究所牛河梁工作站完成了资料分析工作。2013 年，在牛河梁工作站完成了本报告的撰写。辽宁省文物局、喀左县文化局和博物馆对本项研究工作给予了全方位的大力支持。本项目得到了美国国家科学基金会、美国国家地理学会、美国学术团体协会和亨利鲁斯基金会的经费支持。本报告的出版和网络数据库的建设得到了亨利鲁斯基金会和美国夏威夷大学的支持。

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Chapter 1

Introduction

Sedentary living, apparently with substantial commitment to cultivation, reaches back to ca. 7000 BCE in northeastern China. The early Neolithic is characterized by sometimes rather large villages of semi-subterranean wattle-and-daub houses (Neimenggu 2004; Zhongguo 1997a; Zhongguo 2004). These villages occurred in extremely small numbers, dispersed at quite large intervals across the landscape (Chifeng 2011; Linduff et al. 2004; Teng et al. 2003). Food-sharing and communal labor are suggested in these large villages, but there is only the slightest hint of social or economic differentiation dating to the very end of the early Neolithic (Shelach 2000, 2006; Shelach and Teng 2013). In general, the period between 7000 and 4500 BCE sees remarkable social and demographic stability.

The ensuing Hongshan period was not clearly defined until the 1970s (Guo 1995a, 2005). The monumental public architecture, elaborate burials, and jade carvings that were beginning to be excavated at that time immediately placed the Hongshan culture among the ranks of early complex societies (Childs-Johnson 1991; Guo 1995a; Nelson 1991, 1997; Su 1984, 1994). And the dates (4500–3000 BCE) were astonishingly early for such remains in this area and in China in general. A single polity was sometimes envisioned, encompassing the entire Hongshan culture area of some 250,000 km^2 (Guo 1995a; Lee and Zhu 2002; Li 2004:110; Nelson 1994:4, 1996; Su 1986; Yu et al. 1984).

An especially impressive concentration of Hongshan period monuments is found within a 10 km radius of Niuheliang (Fig. 1.1), in Liaoning Province (Barnes and Guo 1996; Chaoyang and Liaoning 2004; Li 1986; Liaoning 1986, 1997, 2012; Zhang, Bevan, and Guo 2013). The monumental remains at 16 localities have been investigated to varying degrees. About 30 km southeast of Niuheliang is another smaller complex of Hongshan public architecture at the site of Dongshanzui (Guo and Zhang 1984; Yu et al. 1984). Nearly 150 km northeast of Niuheliang and Dongshanzui, one Hongshan burial monument has been excavated at Hutougou (Fang and Liu 1984). Small-scale unsystematic survey in the upper Laohushan River valley documented more Hongshan public architecture: a three-tiered trapezoidal platform at Caomaoshan in Sijiazi (Shao 2004) and at least five platforms apparently similar to those at Niuheliang (Li 2004, 2008). At unexcavated Hongshan sites, public structures are recognizable as simple piles of earth and rock rubble, and such piles are reported for several locations in the upper Laohushan survey area and adjacent parts of Aohan Banner (Shao 1995). In sum, there is a "core" zone of the Hongshan culture area where remains of substantial public architecture occur at fairly frequent intervals across the landscape (Liaoning 2010; Peterson et al. 2010; Peterson and Lu 2013). The vast majority of known burials with elaborate jade carvings also derive from this core.

Quite naturally, these monumental remains have attracted the majority of archaeological attention paid to the Hongshan core zone. Residential remains are less well known. Two very small structures with stone foundations, at Dongshanzui and Niuheliang Locality 16, may have served residential functions, and Niuheliang Locality 13 had a small semi-subterranean house. Most of the limited information about Hongshan houses and domestic activities in the core zone, however, comes from excavations at residential sites without monuments, like Xitai (Yang and Lin 2010).

Much fuller information on Hongshan communities is available from outside the core zone where monumental construction is most conspicuous. We refer to this part of the Hongshan archaeological culture area as "peripheral" in the sense that the remains of monumental construction are much less impressive and much scarcer on the landscape than they are in the core zone (cf. Peterson 2006; Peterson and Lu 2013; Shelach 1996). A very small-scale unsystematic survey in the lower Bang River valley documented a number of residential sites (Li 2004, 2008). Prior to the work reported in this volume, the only systematic complete-coverage regional settlement study in the Hongshan culture area covered 1,234 km^2 near Chifeng in eastern Inner Mongolia and indicated that Hongshan villages were organized into supra-local communities or districts (Chifeng 2003, 2011; Drennan and Peterson 2005; Peterson and Drennan 2005). These districts are visible in the distribution of settlement across the landscape in the form of concentrations of occupation separated by open or more sparsely settled areas. Ranging from 2 to 5 km across, these districts were composed of as many as 10 small local communities (villages or hamlets), often with a larger one in the center. District populations seem not to have exceeded about 500 inhabitants. There is no indication of any larger or more central district that dominated others, so each is taken to be a small independent polity. Reported clusters of Hongshan sites in Aohan, including the lower Bang val-

第一章

导论

在中国东北地区，以大规模的农业生产为特征的定居生活方式可以追溯到大约公元前 7000 年。这一地区新石器时代早期考古学文化的特点是出现一些由半地穴木骨泥墙房屋组成的大型村庄（内蒙古 2004; 中国 1997a; 中国 2004)。这些村庄的数量很少，分布间隔很大（赤峰 2011; Linduff et al. 2004; 滕等 2003)。在这些大型的村庄里，应该存在食物共享和集体劳动生产的行为，仅有很少的线索表明在新石器时代早期的末段出现了社会或经济分化 (Shelach 2000, 2006; Shelach 和滕 2013)。总体而言，公元前 7000 年至公元前 4500 年这一时间段内的社会和人口相当稳定。

随后发展起来的红山文化直到 20 世纪 70 年代才被定义清楚（郭 1995a, 2005)。当那些礼仪性公共建筑、结构复杂的积石冢以及雕琢精美的玉器一被发掘出土，人们便将红山文化归入到早期复杂社会的行列 (Childs-Johnson 1991; 郭 1995a; Nelson 1991, 1997; 苏 1984, 1994)。就这些遗存而言，在公元前 4500 年到公元前 3000 年这个年代范围，在这一地区乃至整个中国都早得惊人。有学者认为，可以将红山文化大约 250000 平方公里的分布区看成是一个古国（郭 1995a; 李和朱 2002; 李 2004:110; Nelson 1994:4, 1996; 苏 1986; 俞等 1984)。

在辽宁省牛河梁遗址（图 1.1）方圆 10 公里的范围内，分布着密度相当惊人的红山文化的礼仪性建筑 (Barnes 和郭 1996; 朝阳和辽宁 2004; 李 1986; 辽宁 1986, 1997, 2012; 张、Bevan 和郭 2013)，已经在其中的 16 个地点开展了不同程度的考古工作。东山嘴遗址位于牛河梁遗址东南方向大约 30 公里处，是另外一个规模稍小的红山文化礼仪性建筑（郭和张 1984; 俞等 1984)。胡头沟遗址在牛河梁和东山嘴遗址东北约 150 公里，考古人员在此发掘了一处红山文化的积石冢（方和刘 1984)。在老虎山河上游进行的小规模、非系统性调查发现了更多的红山文化的礼仪建筑，包括在四家子草帽山发现的一个有三层台阶的梯形祭坛（邵 2004）和至少 5 个与牛河梁遗址相似的积石冢（李 2004, 2008)。在那些未经发掘的红山文化遗址，礼仪性建筑的识别通常依靠那些由土和石块混筑的堆积。在老虎山河上游的调查区域以及毗邻敖汉旗的地方，考古人员在多个地点发现了类似堆积（邵 1995)。总之，红山文化存在一个核心区，在此区域内，礼仪性建筑遗存的分布相当密集（辽宁 2010; Peterson 等 2010; Peterson 和吕 2013），绝大多数出土精美玉器的墓葬也发现于这个核心区。

在考古学家对红山文化核心区的关注中，那些礼仪性建筑理所当然地吸引了大部分注意力，而对居住遗迹的了解相对较少。在东山嘴和牛河梁第 16 地点发现的两处石砌基础的小型建筑可能曾经用于居住，牛河梁第 13 地点也发现了一个小型的半地穴式房屋。然而，关于红山文化核心区的房屋和家庭活动的有限了解，大多数都来自于对西台这类不含礼仪建筑的居住遗址的发掘（杨和林 2010)。

有关红山文化社区更加全面的信息来自于核心区之外，我们将红山文化的这一部分区域称之为“周边区”，因为与核心区相比，这里的礼仪建筑的规模要逊色很多、分布也很稀疏 (Peterson 2006; Peterson 和吕 2013; Shelach 1996)。在蚌河下游河谷进行的一个很小规模的非系统调查发现了一些居住遗址（李 2004, 2008)。在属于红山文化周边区的内蒙古东部的赤峰市附近进行了唯一的一次全覆盖式区域聚落研究，调查面积达到 1234 平方公里。这项研究表明，红山文化的村落已经形成了超地方性的大型社区或行政区（赤峰 2003, 2011; Drennan 和 Peterson 2005; Peterson 和 Drennan 2005)。从调查区的聚落分布图可以看出，这些行政区以聚集的居住遗址的形式分布在整个地区，彼此之间被空旷或人烟稀少的区域隔开。每个行政区的空间跨度大约为 2 到 5 公里，由多达 10 个小型地方性社区（村庄或小村落）组成，通常在中心位置是一个更大规模的地方性社区。行政区的人口规模似乎不超过 500 个居民。没有证据显示存

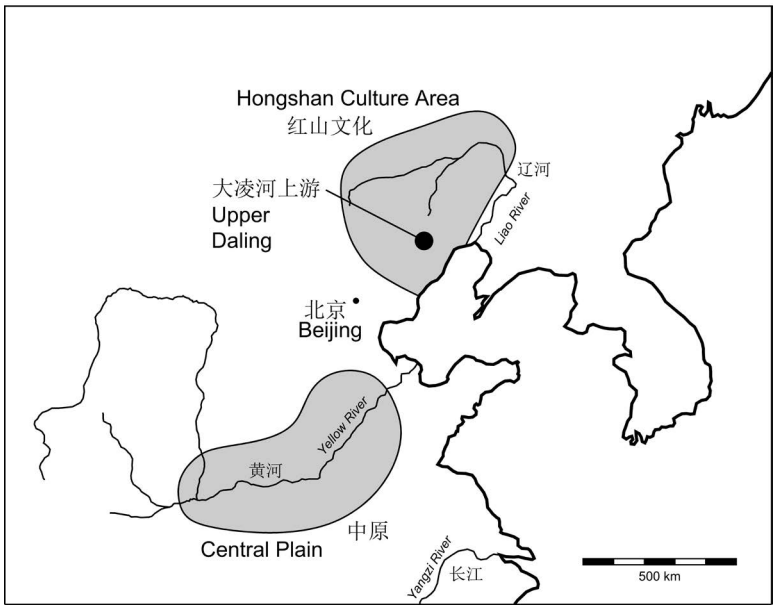


Figure 1.1. Location of the Hongshan culture area and the Upper Daling region in northeastern China.
图 1.1 红山文化分布区和大凌河上游调查区域的位置

ley, may be the remains of similar districts (Li 2004, 2008; Shao 1995).

A number of habitation sites from various parts of the Hongshan periphery, including Chifeng, have been excavated, among them Hongshanhou, Zhizhushan, Xishuiquan, Weijiawopu; Xinglonggou, Baiyinchanghan, Nantaizi, and Erdaoliang (Duan, Cheng, and Cao 2011; Hamada and Mizuno 1938; Neimenggu 1994a, 1994b, 1997, 2004; Zhongguo 2004; Zhongguo 1979, 1982). The houses at these sites are similar in construction to those in the smaller sample from within the core zone. They are also, on average, of similar size—less than about 20 m^2. A few, however, at Xishuiquan and Baiyinchanghan, are substantially larger, reaching up to 100 m^2, and so might have been the residences of higher status families. At Site 6384 in the lower Bang valley, individual houses were detectable on the surface as ashy circles 4 to 5 m in diameter; 52 of them were organized into multiple rows over an area of 0.5 ha. These small houses seem to be nuclear family residences, and rows or other groupings might represent supra-family kinship organization (Li 2008:83–84, Figure 5.9). Groups of residences are also present at Baiyinchanghan. Excavated artifacts and ecofacts indicate that Hongshan inhabitants practiced cereal-based agriculture, animal husbandry, hunting, gathering, and various kinds of craft production (Neimenggu 2004).

Intensive surface collection at Fushanzhuang, a 35 ha site that represents the central place in one of the Chifeng Hongshan districts, has provided more detailed information about this community (Peterson 2006; Peterson and Lu 2013). The middens encircling Hongshan households were clearly visible as separate, dense artifact concentrations, often associated with clear patches of dark ashy soil from burned midden debris. It was thus possible to locate individual households, and to compare the artifact assemblages recovered from each. These comparisons suggest a modest degree of economic specialization, with different households emphasizing different sets of activities. And they reveal similarly modest differences of wealth and of prestige associated with different households.

It is tempting to create a comprehensive model of what Hongshan social organization was like by imagining that the well investigated monuments of the core zone were at the heart of numerous independent small polities, perhaps more closely packed together than in peripheral regions like Chifeng. Each polity would have had a local community that served as its central place, the site of the ceremonies for which public structures were built. These well-known structures make it quite clear that rituals were prime among the activities that drew people to these central places, placing ideology at the heart of the centralizing forces of these early supra-local communities. The tendencies toward economic specialization might also have been strongest in households located in these central places, which would in some small way have made residents of outlying areas "consumers" of goods and/or services from the central community. If so, this might have stimulated the emergence of economic inequalities between the central village and the residents of outlying areas.

Various components of this model have been proposed by different scholars (Childs-Johnson 1991; Drennan and Peterson 2006; Guo 1995a, 1997a, 1997b, 2005; Hua and Yang 1998; Li 2008; Lu 2001; Nelson 1991, 1994, 1996, 1997, 2002; Peterson 2006; Shelach 1999). These social elements, however, are not all known to co-occur at any single place. A synthetic account of Hongshan society com-

在着凌驾于其它行政区之上的更大或集中程度更高的行政区，因此，每一个行政区都可以被看做是一个小型独立的政治单元。在敖汉旗，包括蚌河下游河谷地区发现的红山文化的遗址群可能就是类似于这种形式的行政区（李 2004, 2008; 邵 1995)。

在红山文化的周边区，考古人员对许多居住遗址进行了发掘，包括红山后、蜘蛛山、西水泉、魏家窝铺、兴隆沟、白音长汗、南台子和二道梁（段、程和曹 2011; Hamada 和 Mizuno 1938; 内蒙古 1994a, 1994b, 1997, 2004; 中国 2004; 中国 1979, 1982)。这些遗址中的房屋与红山文化核心区内发现的为数不多的房屋有着相似的结构。它们的大小也十分接近，平均都在 20 平方米以下。不过，在西水泉和白音长汗，发现了少数规模很大的房屋，面积可达 100 平方米，有可能是地位很高的家庭之居所。在蚌河下游河谷编号为 6384 的遗址中，根据地表直径约 4 到 5 米的灰土圈，可以判断出一个个独立的房址。其中的 52 个被规划为几排，分布在面积为 0.5 公顷的区域内。这些小型房屋似乎是核心家庭的居所，而成列或以其它聚集形式出现的分布模式则可能代表着超越家庭的组织关系（李 2008:83－84, 图 5.9)。在白音长汗遗址，也同样发现了房址群。出土的器物和生态证据表明红山文化的居民从事着谷类种植、动物驯养、狩猎、采集以及各种手工业生产活动（内蒙古 2004)。

富山庄遗址是赤峰调查区内一个红山文化行政区的中心地点，其面积大约为 35 公顷，在该遗址进行的密集性地表采集为了解这个行政区提供了更加详细的信息 (Peterson 2006; Peterson 和吕 2013)。围绕红山文化房屋分布的垃圾堆在地表清晰可见，单独分布且遗物密度很高，常常伴有由燃烧过的垃圾残骸形成的深色灰烬状土壤。因此，我们得以确定出每一个房屋的位置，并且可以将彼此出土的器物组合进行对比。这样的对比研究指出，当时存在中等程度的经济专业化，不同的家庭从事着不同的经济行为。同时，也发现在不同的家庭之间存在相似的财富和地位，彼此的差异并不大。

通过建立一个综合性的模型来了解红山文化社会组织的面貌，这是一件诱人的事情。即：假设核心区那些充分调查过的礼仪建筑位于众多独立的行政区的中心位置，与赤峰这样的周边区相比，这些行政区之间的联系可能更加密切、紧凑。每一个行政区可能拥有一个中心性的地方社区，那些为了仪式而建造的公共建筑正好位于此处。这些著名的礼仪建筑清晰地表明，在吸引人们到这些中心地点的行动中，仪式起着至关重要的作用，因此意识形态是聚集早期超地方性的大型社区的核心推动力。在位于中心地点的家庭中，经济专业化的趋势可能同样最为强烈，这多少使得居住在周边地区的居民成为中心社区物品或服务的消费者。如果是这样，可能导致中心村落和周边地区的居民之间在经济上出现不平等。

不同学者提出了这个模型的各种组成因素 (Childs-Johnson 1991; Drennan 和 Peterson 2006; 郭 1995a, 1997a, 1997b, 2005; 华和杨 1998; 李 2008; 吕 2001; Nelson 1991, 1994, 1996, 1997, 2002; Peterson 2006; Shelach 1999)。然而，这些社会因素并非总是会在一个地方同时出现。集合所有因素对红山文化进行综合性解释的做法，事实上是把来自红山文化核心区的礼仪性建筑的证据和来自周边区的家庭和社区的证据有风险地拼凑在一起。尽管红山文化周边区的一些礼仪性建筑看起来与核心区的很相似，但它们的数量更少，分布更加稀疏。由于没有进行过发掘工作，对这些礼仪性建筑的认识完全依据地表的遗存。而另一方面，关于红山文化的家庭、地方性社区以及行政区的证据绝大多数来自于周边区。对家庭活动和村落生活的社会性互动的了解严重依赖于富山庄遗址，这个遗址为我们提供了详尽的家庭遗物组合的数据，但它只是红山文化周边区的一个小型行政区的中心社区。

将周边区的行政区的活动和组织模式投射到核心区那些被认为是以更加令人印象深刻的礼仪性遗址为中心的行政区，这一做法实际是默认了核心区和周边区的行政区是相似的认识。然而，核心区的公共建筑丰富多变，纪念性质更加浓厚，显然有别于周边区。这就造成了一种印象，即核心区的行政区在某些方面比周边区的发达得多。有可能核心区的人口更多或面积更大，也有可能更加集中化。一个或多个核心区的行政区可能发展出比周边区更高的区域政治分层。数量更多的人口可以为建造纪念性建筑提供更多的劳动力，为仪式活动提供更多的参与者，并激励了更多的生产分化。数量更多、分布更加密集的人口同样会引发更加复杂的组织问题需要解决。然而，认为核心区的行政区一定比周边区的规模更大，则纯属猜测。有可能纪念性建筑代表的是朝拜的圣地，在那里并没有任何居住人口，这种情形下，这些地点根本不能被称之为中心地点，而只是重要的地方（或许是用来朝拜的），而建造和使用它们的人群则居住在很远的地点（郭 1995a, 2005; 李 2008;

bining them is actually a risky patchwork of monumental evidence from the Hongshan core and household and community evidence from more peripheral regions. While some monuments apparently similar to those of the core zone are located in the periphery, they are fewer, sparser, and known only from surface remains (as none have been excavated). The overwhelming majority of evidence concerning Hongshan households, local communities, and small polities, on the other hand, comes from peripheral regions. Accounts of household activities and the social interactions of village life depend heavily on Fushanzhuang, the modest center of one small peripheral district, from which detailed household assemblage data are available.

Projecting patterns of activities and organization documented in peripheral polities onto those assumed to be centered on the more impressive monumental sites of the core implicitly takes core polities to be like those of the periphery. The abundance, variety, and greater monumentality of public architecture in the core, however, is in obvious contrast with the periphery. This creates the impression that core polities were considerably more highly developed in some ways than were peripheral ones. Perhaps they were demographically and/or spatially larger. They might have been more strongly centralized. One or more of them might have developed a greater degree of regional political hierarchy than occurred in the periphery. Larger numbers of people would provide more labor for monument construction, more participants in ceremonial activities, and encourage greater productive differentiation. Larger, denser populations also pose more complicated organizational problems to solve. It is pure speculation to say, however, that core polities were any larger than those in the periphery. It might be that the monuments marked sacred places without residential populations, in which case they were not central places at all, but important sites, perhaps of pilgrimage, in locations distant from the living communities that created and used them (Guo 1995a, 2005; Li 2008; Liaoning 1997, 2012; Nelson 1997:63; Lee and Zhu 2002; Yu et al. 1984). Public buildings in the core zone do seem to have undergone a long sequence of remodeling and enlargement (Lu and Zhu 2002; Suo and Li 2007). They are, to some extent, a palimpsest that accumulated over the long Hongshan period, which might give the core zone the archaeological appearance of larger or more highly developed polities simply because of the greater accumulation of public architecture.

The objective of the research reported in this volume was to document the size, nature, and sequence of development of whatever human communities lived around core zone monuments. The research thus aimed to complement the knowledge of public architecture and ritual derived from previous research by collecting information of other kinds—information thus far not available for Hongshan core zone communities but which is essential for understanding the developmental trajectory of Hongshan societies.

The Upper Daling Survey Region

The area around the monumental site of Dongshanzui was selected as the focus of research. A regional survey area was delineated running roughly southwest to northeast along the course of the Daling River. Its limits included a large tract of what is today the most agriculturally productive land in the surrounding area, which proved in the Chifeng regional settlement study (Chifeng 2011) to be associated with ancient settlement as well. The survey region also extended far enough outside this apparently most attractive zone to make it possible to assess how the density of settlement changed at increasing distance from it. In particular, a part of the survey zone extended upward into the mountains to the northwest of the Daling River valley, since the Niuheliang zone of monuments lies some 30 km in this direction, and this provided an opportunity to see whether settlement extended in this direction in particular. Altogether the survey area included 200 km^2 (Fig. 1.2). An additional separate tract of 5 km^2 was also surveyed, but this is not included in the analyses reported in the chapters that follow because many of these analytical approaches require a single contiguous area without gaps. The area was made large enough so that several small polities of the sort delineated for Hongshan times in the Chifeng region would be included or larger polities, if present, would be detected.

The Upper Daling region is cold and dry in the winter, dry and very windy in the spring, and very hot during the summer, cooling rapidly with the onset of autumn (Kalaqin 1998). The flat valley floor in the Upper Daling survey area lies between about 250 and 300 m above sea level. Mean temperature ranges from -11°C in January to 24°C in July (Kalaqin 1998:119). The region averages 141 days without frost each year (Kalaqin 1998:124–125) and receives an average of 500 mm of precipitation per year (Kalaqin 1998:123). Rainfall is concentrated in June, July, and August; much of it arrives in the form of scattered summer thundershowers. Total precipitation varies substantially from year to year. Bedrock of several kinds from earlier geological epochs was covered during the Quaternary by loess blown from the eastern margins of the Gobi desert (Avni et al. 2010). Loess is extremely fertile; its potential for agriculture is limited only by availability of moisture.

The major staple crops today are maize and millet; wheat is also grown, but on a much smaller scale than maize or millet. Cultivation of these major staples, along with an enormous variety of vegetables and legumes, is extremely intensive on the flat alluvial valley floor which is widely irrigated both by canals and by pumping water from wells. The valley floodplain is in most places less than 2 km wide (Fig. 1.3). Crops on these valley floors are now protected from frequent flooding by dams and reservoirs as well as dikes along the river. More extensive, but still substantial, cultivation (especially of maize and millet) also occurs in adjacent rolling higher land, particularly to the northwest of the main river (Fig. 1.4). These fields are naturally pro-

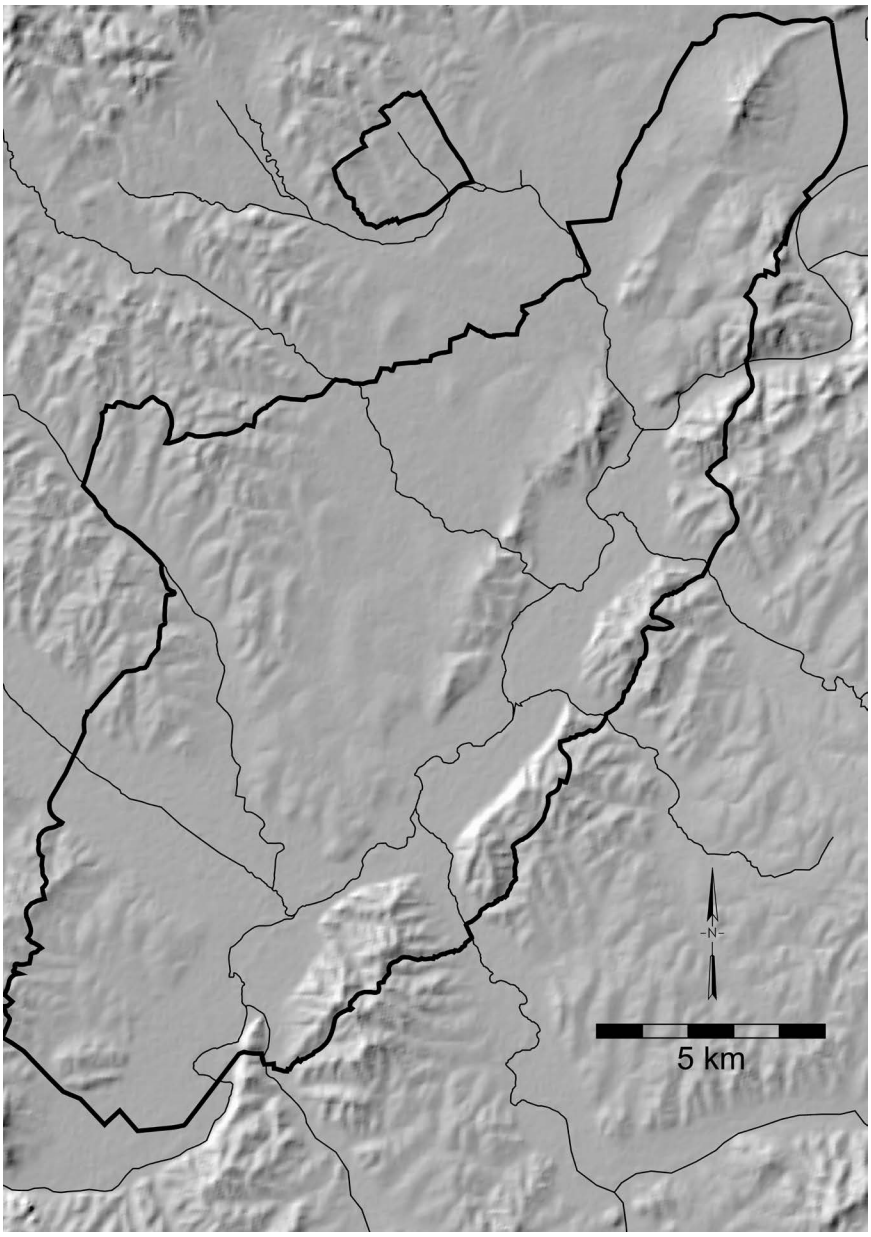


Figure 1.2. The Upper Daling survey region. A color version of this illustration is available online and the survey boundary, DEM, hydrology, and additional information are available online as a GIS dataset—see Appendix.

图 1.2 大凌河上游调查区域范围（本插图的彩色版本、调查边界、数字高程模型、水文图以及其它 GIS 数据信息可以从网络上获取，参见附录）

辽宁 1997, 2012; Nelson 1997:63; 李和朱 2002; 于等 1984)。核心区的公共建筑的确可能经历过一连串的重建和扩张（吕和朱 2002; 索和李 2007)。它们历经了红山文化这一很长的时期，在一定程度上，是不断被重写的结果。或许只是因为公共建筑的积累更多，让核心区在考古学证据上看起来似乎拥有规模更大或更加发达的政治单元。

本报告的研究目的是记录在核心区礼仪性建筑周边生活的人类社区的规模、性质和发展序列。因此，研究主要致力于收集各种信息，以补充关于礼仪建筑和仪式的已有认识。那些关于红山文化核心区的人类社区的信息目前仍然欠缺，但对我们理解红山文化社会的发展轨迹却至关重要。

tected from flooding, but are less productive than valley floor fields and more at risk of crop failure from drought, since for the most part they cannot be irrigated. Several varieties of fruit trees are cultivated, especially to make use of sectors of uplands where soils are thinner, stonier, and retain less water. Modern efforts at reforestation have been extensively applied to some of the highest, steepest, and least cultivable slopes. Very small herds of sheep and goats (often numbering 10 or fewer) are brought from villages on a daily basis to graze in uncultivated patches. Pigs, cattle, and chickens are raised in the villages.

The Dongshanzui Ceremonial Site

Discovery and Characteristics

The Dongshanzui site is located about 1 km from the west bank of the Daling River near Kazuo city in Liaoning Province. The site is situated atop a relatively flat hill 50 m above the river, and covers an area of about 2400 m^2. The view to the southeast is of the valley mouth flanked on either side by high mountains, and the Daling River meanders slowly through the floodplain below.

Dongshanzui was discovered during survey in May, 1979. It was first excavated in the autumn of that year (Guo and Zhang 1984). In 1982, additional excavation revealed Hongshan period monumental architecture, including a rectangular stone enclosure, four low circular platforms, a house foundation, and retaining walls (Fig. 1.5). Ceramic, stone and jade artifacts were also recovered.

The stone enclosure was found in the northern part of the site, and measured about 12 m east-west, and about 10 m north-south. The enclosure was built of four staggered courses of stone blocks, erected atop a flat, hard-packed area of yellow earth. Patches of this earthen surface show evidence of burning. Inside the enclosure were constructed three stone piles made of conically-shaped stones, the largest of which was nearly 1 m high. Two additional stone walls running perpendicular to the enclosure's long axis were also uncovered, placed 6 and 8 m away from its eastern and western edges, respectively. Although incomplete, these alignments clearly comprise a secondary enclosure enfolding the first. Sloping land to the east and west was artificially leveled with large stones, presumably to prevent erosion of the terrace and of the architecture built atop it.

The best preserved of the four low circular platforms was located 15 m to the south of the enclosure, still within the area of hard-packed yellow earth. Only about 2.5 m in diameter, the platform was built of tamped earth surfaced with pebbles and surrounded by a curb of white stone slabs. An overlapping concentration of three slightly larger roughly circular platforms is located about 4 m to the south of the first. These were less finely constructed than the first

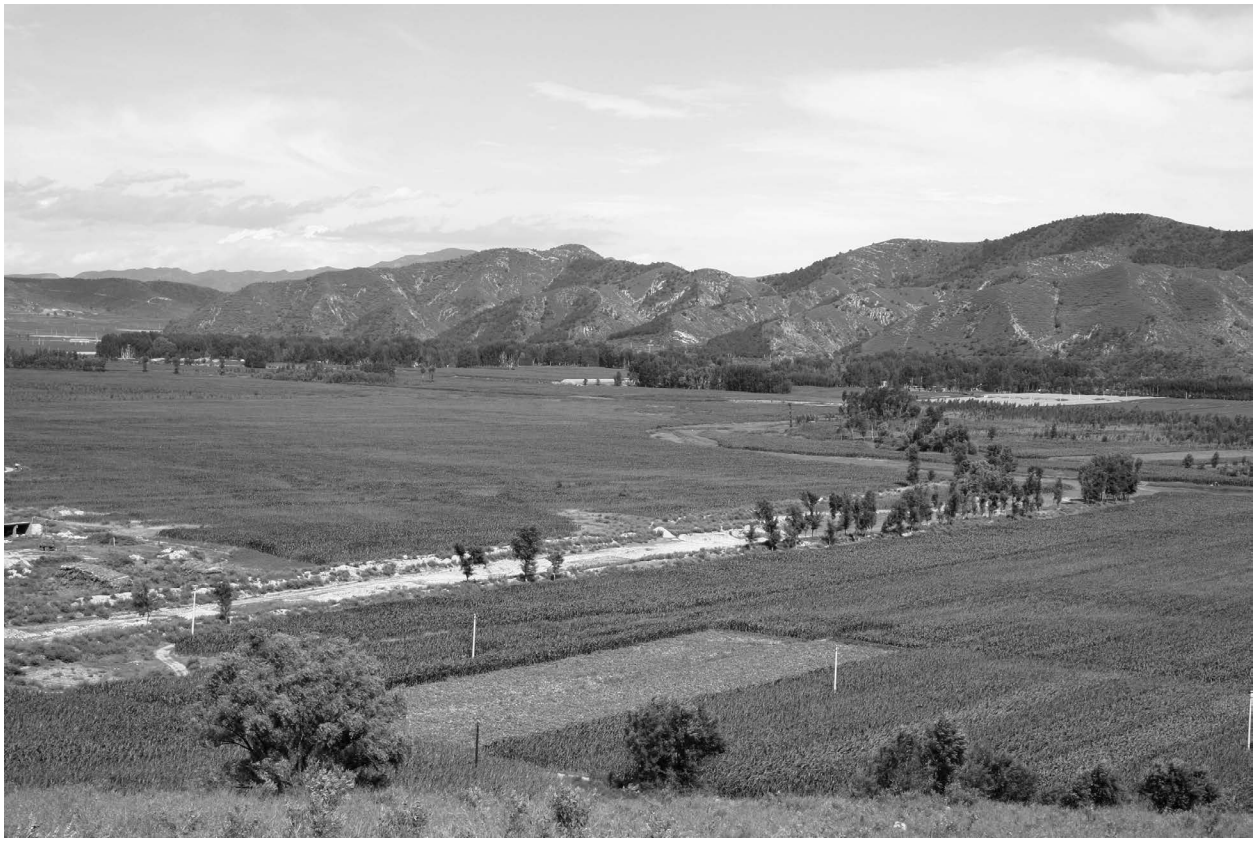


Figure 1.3. Level floodplain of the Daling River (available online in color—see Appendix).

图 1.3 大凌河流域的平坦冲积平原（彩色图片可以从网络上获取，参见附录）

大凌河上游调查区域

本研究重点关注东山嘴遗址及其周边地区。沿着大凌河的走向，我们确定了一个大致由西南向东北的调查范围。调查区域包括了一大片在今天看来是最肥沃高产的土地，与古代聚落有密切联系，这一点在赤峰地区的区域聚落研究中已经得到证实（赤峰 2011）。调查区域的范围延伸到这片显然最具吸引力的区域以外，便于我们判断聚落分布与逐渐增加的距离之间的关系。特别是，调查区域的一部分延伸到大凌河河谷西北方向的山脉上。分布着礼仪性建筑的牛河梁遗址就在沿此方向约 30 公里处，这将让我们有机会了解聚落是否向此方向延伸。调查区域的总面积 200 平方公里（图 1.2）。此外，我们还对一片约为 5 平方公里的区域进行了单独的调查，但由于许多分析方法的应用条件是一整片连续、无空缺的区域，因此，这个 5 平方公里的调查结果并未收录在本报告后续的章节中。调查区域的覆盖面积是足够大的，能保证那些与赤峰调查区中界定的红山文化的小型行政区相当的行政区能够被囊括进来，而且如果存在更大的行政区，也能够被发现和识别出来。

大凌河上游地区的冬天寒冷而干燥，春季则干燥多风，整个夏季非常炎热，入秋后则迅速凉爽下来（喀喇沁 1998）。大凌河上游调查区域内的平坦谷底的海拔为 250 米到 300 米。一月份和七月份的平均气温分别为 -11°C 和 24°C（喀喇沁 1998:119）。区域中年平均无霜期为 141 天（喀喇沁 1998:124–125），年平均降水量为 500 毫米（喀喇沁 1998:123）。降雨主要集中在六月、七月和八月，大多数时候是以夏季雷阵雨的形式出现。不同年份之间的总降水量差异很大。于早期地质时代形成的各种基岩在第四纪时期被来自戈壁沙漠东部边缘的黄土所覆盖（Avni 等 2010）。黄土极其肥沃，水分的多少是唯一限制其农业生产潜力的因素。

今天，这里主要的作物是玉米和小米，也种植小麦，但规模比玉米或小米要小得多。在平坦的冲积河谷底部，通过水渠或抽取井水充分灌溉，这些主要作物以及众多种类的蔬菜和豆类的耕种极其密集。河谷的冲积平原在许多地方仅有不到 2 公里的宽度（图 1.3）。这些河谷底部的作物如今被水坝、水库以及沿河分布的堤坝保护着，避免了频繁的洪水侵

Figure 1.4. Rolling terrain slightly higher than the Daling River floodplain. Available online in color—see Appendix.

图 1.4 比大凌河冲积平原地势稍高的起伏地区（彩色图片可以从网络上获取，参见附录）

platform, of river cobbles and small irregularly-shaped stones.

A house foundation partially buried beneath the westernmost stone alignment predates construction of the site's ceremonial architecture. A small stepped pit lined with a layer of fired mud and straw was dug into the floor of an apse-like feature in the eastern wall of this house. From inside the pit was excavated a polished stone axe.

To the northeast of the single round platform was excavated an adult human skeleton that could not be sexed. These remains were not interred in a pit, but rather placed directly upon the ground. A large stone was placed behind the head, another at the feet, and the individual's chest and abdomen covered with large sherds. Some of these sherds were later determined to come from a large bowl. As a final step the deceased was covered with a pile of earth. These remains have sometimes been interpreted as sacrificial.

A single radiocarbon sample dates the ceremonial architecture to 4895±75 BP (BK-82079). Calibration with a 1-sigma range (68% confidence) produces a corrected date of 3770–3630 BCE, placing this phase of construction squarely in the middle 500 years of the 1500-year-long Hongshan period.

Importance

The combination of stone architecture discovered at Dongshanzui is the first example of its kind excavated at a Neolithic site in China. The distribution of architectural remains is orderly but asymmetrical in plan; organized around a north-south axis, and bounded to the east and west by stone alignments, it is fronted by the four circular platforms and backstopped by the rectangular stone enclosure. In later Chinese history these two shapes are associated with the worship of Heaven and Earth. Consequently, the site is near universally taken to be a location where ritual activities of some sort were performed.

Two very small ceramic female figurines (each around 6 cm high), nude and clearly pregnant, but without heads, were excavated just to the northeast of the northernmost circular platform. These too are the very earliest examples of such representations unearthed in China. Their presence suggests that among the activities that took place at Dongshanzui were animistic rituals concerned with fertility and fecundity (Childs-Johnson 1991). The low circular platforms are therefore thought to be altars of some kind.

At the southeastern edge of the same platform beside which the small figurines were found, was excavated a larger, less complete statue in two parts. This one-half life-sized, hollow-bodied ceramic sculpture is seated cross-legged with hands crossed in front of the abdomen, one hand grasping the wrist of the other arm. The hands of many human sculptures excavated at other Hongshan sites (such as Niuheliang, Nasitai, and Xinglonggou) are posed in this same way (Anonymous 2012; Balinyou 1987; Niuheliang 2012). Another 20 or more fragments of statuary belonging to figures of different sizes, but identically posed, were scattered around the same circular platform.

From just inside the wall of the rectangular enclosure was recovered a small (4 cm long) horizontal jade pendant with a dragon head carved at either end. These motifs are very similar to the C-shaped jade dragon from Sanxingtala in Wengniute Banner, Inner Mongolia, which is therefore

Figure 1.5. Dongshanzui ceremonial site after excavation in 1982. Available online in color—see Appendix.

图 1.5 1982 年发掘之后的东山嘴祭祀遗址（彩色图片可以从网络上获取，参见附录）

袭。在附近的绵延起伏的高地上（尤其在主河流的西北方向），作物（尤其是玉米和小米）的种植更加粗放，但数量仍然很多（图 1.4)。这些农田因为地势高，所以不会受到洪水的侵害。但是因为大多数无法灌溉，产量要低于河谷底部的农田，并且更容易因干旱导致作物减产。高地上土壤稀薄、多石、保水性差的区域也得到了充分利用，种植了许多种类的果树。在海拔最高、最为陡峭和最不宜耕种的一些坡地上，广泛地开展了现代植树造林活动。很小数目的山羊和绵羊群（通常在 10 只以下）每天从村落被带到这里，在未耕种的小块土地上进行放养。猪、牛和鸡则在村落中养殖。

东山嘴祭祀遗址

发现过程及遗址特点

东山嘴遗址位于辽宁省喀左县大城子镇东南约 1 公里的大凌河西岸，坐落在一处平缓台地的南端，面积约 2400 平方米。遗址高出河床 50 余米，向东南方极目远眺，只见高山深谷，大凌河奔腾而来；俯首近观，水阔波平，良田沃野麦浪滚滚。

东山嘴遗址于 1979 年 5 月的一次调查中被发现，是年秋天经历了第一次发掘（郭和张 1984)。1982 年，开展了后续的发掘工作，揭露出来一处大型的红山文化礼仪性建筑，包括一个长方形的祭坛及侧翼的护墙、四个圆形祭坛、一座房址（图 1.5)。同时，也发现了陶器、石器和玉器。

遗址北部是一个长方形祭坛，东西长约 12 米，南北宽约 10 米。祭坛边框由四层石块错缝垒砌而成，底部是平坦、坚硬的黄色垫土层，表面有大片的火烧痕迹。建筑内部有三个由锥形条石组成的石堆，最大的接近一米高。与建筑长轴垂直的方向上，发现了另外两道石墙，分别距离东部和西部边框约 6 米和 8 米。尽管外围的石墙并不完整，但从布局上可以清楚地看出后者围绕着前者。石墙东西两侧的坡地用大石块铺砌，避免平台及其上建筑受到侵蚀。

四个圆形祭坛中，保存最好的一个坐落在长方形祭坛以南 15 米处，是在黄土堆积的台座上铺砌而成。这个祭坛的直径仅 2.5 米，表面铺河卵石，周围用白色的石板镶边。在这个圆坛以南约 4 米的地方，分布着另外三座稍大一些的近圆形祭坛，彼此之间有重叠。建造的稍微粗糙一些，边缘用大块河卵石砌成，石圈内铺较小的石块形成台面。

在长方形祭坛西部的石墙之下，发现了一座半地穴式房址，表明其建造时间要早于其上的祭祀性建筑。房址东墙中部向外凸出，做成一个十分规正的长方形坑，四壁抹草拌泥并经火烧烤，坑壁呈台阶状，坑底出一件精致的石斧。

在圆坛的东北侧，发现了一具成人的骨骸，性别无法确认。这具遗骸并非埋入墓坑中，而是直接放置在地面上。在尸骨头部上方以及足部下方，分别放置了一个大石块。在胸部以及腹部的位置，覆盖着一些大块的陶片，其中的一些陶片来自同一个大型陶钵。最后，死者被一堆泥土掩埋。上述现象有时被解释为献祭。

提取的一个碳十四样本测定的年代为距今 4895±75 年 (BK-82079)。校正后的年代为公元前 3770-3630 年（1 σ，置信度 68%），据此可以将东山嘴遗址的年代确定为红山文化中期偏晚阶段。

重要意义

东山嘴遗址的石砌建筑在中国的新石器时代遗址中是首次发现。从布局上看，建筑遗迹的分布非常规则，沿南北轴线分布，但又受到东西两翼建筑的约束。整个建筑的正面是四座圆形的祭坛，背后则是长方形的祭坛。在中国的历史中，圆形和方形被认为与天和地相关联。因此，研究者近乎一致地认为在该遗址上曾经进行过某种祭祀活动。

在最北的圆形祭坛的东北侧，出土了两个小型女性陶像（每个大约 6 厘米高），均为裸体，有明显的怀孕特征，头部残失。这两个陶质孕妇像也是中国目前出土的类似造型的最早实物。它们的出现表明，在东山嘴遗址进行的祭祀活动应当与强调丰产和生殖崇拜的泛灵信仰有关 (Childs-Johnson 1991)。

在圆形祭坛的东南端，发现了一个更大型、残缺的陶塑人像，已经破损为两部分。这个陶质雕塑有半个真人大小，胎体中空，双手交叉置于腹部，一只手抓着另一只手臂的腕部，呈盘腿坐姿。在其它红山文化遗址（例如牛河梁、那斯台和兴隆洼）发现的人形雕塑也是完全相同的手势 (Anonymous 2012; 巴林右 1987; 牛河梁 2012)。其余 20 多个雕像残件属于不同大小的陶人，分散在同一个圆形祭坛周围。

长方形祭坛内出土了一件片状的玉坠饰 (4 厘米长)，两端分别雕刻着一只龙头。其造型与内蒙古自治区翁牛特旗三星塔拉出土的 C 型玉龙十分相似，因此被判定为红山文化的遗物（孙 1984; 孙和

also thought to date to the Hongshan period (Sun 1984; Sun and Guo 1984). Many scholars now consider the dragon image to have originated at this time in northeastern China, rather than at a later date in the Central Plain (Shelach 2001b, 2001c).

More than 90% of the remains excavated at Dongshanzui were ceramic sherds, but only a small number were reconstructable into whole vessels. About 80% of all sherds consisted of fine-paste ceramics that are reddish-orange in color. Most of the remaining 20% were made of coarse paste that is reddish-orange or brown in color, but a very few black or gray fine-paste sherds were also recovered. These ceramics can be divided into both utilitarian and non-utilitarian types. The former include bowls, basins, jars, urns, plates, water jugs, stemmed platters, and vessel lids. The latter include *tongxingqi* cylinders, used to decorate ceremonial and funerary monuments excavated at other Hongshan sites, as well as tower-shaped "incense burners." Coarse-paste sherds were decorated with incised Z-motif rocker stamping and mat-impressed bases; fine-paste sherds were sometimes painted in geometric shapes. At Hongshan sites with ceremonial architecture that dates to a later part of the period than does that at Dongshanzui, utilitarian and non-utilitarian ceramics rarely co-occur. Because both are found together at Dongshanzui, the site represents an opportunity to study the early development of Hongshan ceremonialism.

Understanding the Dongshanzui Site

Unlike some Hongshan period ceremonial sites, no large platforms containing human interments were found at Dongshanzui. There are two parts to the ceremonial architecture at Dongshanzui: the rectangular enclosure in the north, and the cluster of low circular platforms in the south. The remains in one part are very different from those in the other. Therefore, the activities that took place in either may also have been very different. Some scholars think that the stone enclosure may have been involved in activities related to Earth worship (Yu et al. 1984). The structure of this monument is very similar to that described in ancient Chinese literature as *dashe*, an altar used by the most important people in society to worship Earth. Some claim that Dongshanzui may be the earliest example of this kind of altar yet discovered in China. Three of the four low circular platforms that overlap must have been in use at different times. Since the single northernmost of these platforms is the most intact, it may well have been the last in use. It was built on a prepared packed earthen surface and the materials used in its construction were carefully selected. The discovery of more than 20 fragments of statuary at Dongshanzui, including those of pregnant women and seated figures, is perhaps the most important feature of the site. It seems likely that these were placed atop the nearby low circular platform for use in rituals focused on natural fertility or human reproduction.

Dongshanzui, then, is an important example of the particularly elaborate and varied complexes of ceremonial architecture that characterize what we have above called the Hongshan core zone. Its characteristics, as documented by excavation, and the materials recovered in those excavations have contributed to archaeologists' confidence in identifying the function of such structures as ceremonial or ritual, and have provided vital evidence about the nature of ancient Hongshan religious beliefs and practices.

郭 1984)。今天，许多学者认为龙的形象应该起源于这一时期的中国东北地区，而不是在以后的中原地区 (Shelach 2001b, 2001c)。

遗址地层中出土了大量陶器，约占全部遗物的 90%，但可复原器物较少。泥质红陶数量最多，约占 80%，其余 20% 为夹砂褐陶和夹砂红陶，此外还有少量泥质黑陶和灰陶。陶器形式多样，可以分为生活用陶器和祭祀用陶器两大类。生活用陶器有钵、盆、罐、瓮、盘、壶、杯、豆、器盖等，祭祀用陶器有筒形器、塔形器等。夹砂陶的纹饰以压印的之字纹最常见，器底装饰席纹。泥质陶中彩陶很常见，全部为黑彩，以几何形纹饰为主。在含有祭祀性建筑但年代晚于东山嘴的红山文化遗址中，几乎很少发现生活用陶器和祭祀用陶器共存的现象。鉴于这两类器物共同出现在东山嘴遗址，这为我们研究红山文化的祭祀仪式的早期发展提供了机会。

对东山嘴遗址的解读

与一些红山文化的祭祀遗址不同，东山嘴遗址并没有发现任何埋葬死者的大型积石冢。东山嘴的祭祀性建筑的主体可分为两个部分，一是北部的方坛，二是南部的圆坛，它们的形制和出土遗物差别很大，应该具有不同的功能和祭祀对象。一些学者认为，长方形祭坛可能代表着与祭祀土地神有关的活动（俞和严 1984)。这座祭坛的结构与古代中国文献中描述的“大社”十分相似，有人提出东山嘴可能是中国境内发现此类祭坛的最早实例。四座低矮的圆形祭坛中，有三座出现了相互叠压的现象，说明这些祭坛在不同的时期被使用。其中最北端的保存状况最好，因此，可能是最后被使用的祭坛。这座祭坛建造在预先夯筑好的地面上，用于建筑的材料也经过精心的挑选。在其周围出土了超过 20 件陶质人像的残块，其中包括孕妇像和盘坐人像，这些发现或许是东山嘴遗址最重要的特点。有可能在以自然崇拜和丰产巫术为目的的祭祀活动中，这些陶质人像曾经被放置在祭坛上面。

因此，东山嘴遗址是一处非常重要的实例，其拥有的极其精致和多变的复杂祭祀建筑成为今天被称之为红山文化核心区的典型代表。考古发掘揭示的东山嘴遗址的特征以及出土遗物提高了考古学家判定类似具备祭祀或礼仪功能的建筑的信心，并为研究红山文化的宗教信仰和习俗提供了至关重要的信息。

Chapter 2

Chronological Frameworks

Ceramic Chronology

For the period before historic Zhanguo times (the Eastern Zhou or Warring States period) the basic western Liao archaeological ceramic sequence is well established. It consists of six periods: Xinglongwa, Zhaobaogou, Hongshan, Xiaoheyan, Lower Xiajiadian and Upper Xiajiadian. From Zhanguo times onward, the western Liao area was incorporated into expansive dynastic political and economic systems based in or modeled on those of the Central Plains. Ceramics manufactured during the early historic period are widely distributed over a very large area of northern China, and are extremely similar in terms of paste, decoration, and vessel form. At least two early historic period ceramic assemblages can be recognized archaeologically in surface collections—Zhanguo-Han and Liao. The spans of these two assemblages do not correspond at all well to a whole series of related and often short-lived states known from historical documents.

Our understandings of long-term social change at the regional scale are based on this chronological framework built from the study of archaeological ceramics. Ceramic sherds were the primary artifacts recovered in the Upper Daling regional survey. The characteristics of sherd color, texture, decoration, method of manufacture, vessel form, etc. used for the chronological identification of sherds from the Upper Daling survey are summarized here by archaeological period. In contrast to the Chifeng survey region (Chifeng 2011), the Upper Daling survey recovered no early Neolithic ceramics. The implications of this are discussed in Chapter 4, and the ceramic descriptions here begin with the middle Neolithic Hongshan period.

Hongshan Period Ceramics

Hongshan period pottery can be divided into two broad categories: coarse paste and fine paste. Coarse paste pottery is fired at low temperature and has a loose texture. A mix of sand and organic material was used to temper the clay. The inner surface of sherds is typically black and highly polished. The outer surface is roughened and mottled brown and red in color. Cylindrical jars (*tongxingguan*), basins (*pen*), and urns (*weng*) used for cooking and storage are the most abundant forms of coarse-paste pottery. Shallow rocker stamping consisting of short, thick lines creates a herringbone pattern or Z motif (*zhiziwen*) that is the primary form of decoration found on coarse-paste vessels (Fig. 2.1). Other forms of shallow incising (*kehuawen*) are also observed in smaller quantities.

Hongshan fine-paste pottery was fired at slightly higher temperatures than its coarse-paste counterparts, and has a finer, more uniform texture. Pottery of this type was typically finished with a clay slip before being burnished inside and out. Vessels might also be adorned with painted geometric designs. Most Hongshan fine-paste pottery is red in color, but small amounts of gray and black are also seen. The most common utilitarian vessel forms are serving wares such as bowls (*bo*), basins (*pen*), and pitchers (*hu*), although fine-paste jars (*guan*) occur in high frequencies as well. Strictly ceremonial vessels take the form of large bottomless painted pottery cylinders, or *tongxingqi*, found in association with Hongshan platform burials. These remains typically consist of large, well preserved sherds that are easily identifiable. Two chronological variants have been discerned. The rims of earlier *tongxingqi* are folded over on themselves (Fig. 2.2 left), whereas the rims of later ones curve outward or are rolled (Fig. 2.2 right). *Tongxingqi* are typically left undecorated, but a few are painted with black zig-zag (Fig. 2.3 left) or other patterns, and/or are incised with parallel concentric lines to create a neck below the rim (Fig. 2.3 right).

Most excavated Hongshan period pottery is easily identified as such, but some smaller body sherds of the sort often recovered during pedestrian survey are very small, undecorated and heavily worn, making them difficult to distinguish from the small sherds of some other periods unless characteristics of paste, temper, and surface treatment are emphasized. In contrast to the sherds of later periods, Hongshan coarse-paste pottery is highly friable, contains large voids resulting from complete combustion of the organic tempering materials used, and has a use-blackened and polished inner surface. Hongshan fine-paste pottery is very delicate, with a soft and chalky texture.

Xiaoheyan Period Ceramics

Most Xiaoheyan period coarse-paste pottery collected in the Upper Daling survey is harder and therefore fired at higher temperatures than its Hongshan equivalent, but it shares the same mottled reddish-brown surface seen on some Hongshan utilitarian vessels. The inner fabric can be slightly pink in color and typically contains shell or mica temper mixed with sand. The Xiaoheyan period pottery recovered by the Upper Daling project consists pri-

第二章

年代框架

陶器编年

辽宁西部地区战国以前的考古学文化谱系已经基本建立，即：兴隆洼文化—赵宝沟文化—红山文化—小河沿文化—夏家店下层文化—夏家店上层文化。自战国以降，这一地区纳入了基于或效仿中原地区的广阔的王朝政治经济系统之中。这一时期生产的陶器广泛地分布于中国北方的广大区域，并且在质地、纹饰和器形方面表现出高度的相似性。从地表采集的陶片中，至少可以鉴别出战国—汉代和辽代阶段的陶器组合模式。这两组模式的时间跨度与历史文献中记载的一系列相关且多为短暂存在的国家是不对应的。

我们对区域性长期社会变化的理解建立在陶器考古研究所确定的年代框架基础之上。大凌河上游流域考古调查的主要采集品是陶片，根据陶片的颜色、质地、纹饰、制作方法、器形等特点，归纳各考古学文化和不同时期的陶器特征，为考古学文化的分期和建立大凌河上游调查区域内的文化发展序列提供依据。与赤峰调查区域形成鲜明对比的是（赤峰 2011），大凌河上游的调查并未发现任何新石器时代早期的陶片。在第四章中，我们将对这一现象进行解释。陶器的描述将从新石器时代晚期的红山文化开始。

红山文化的陶器

红山文化陶片可分为夹砂陶和泥质陶两大类。夹砂陶火候较低，质地疏松。砂粒和有机质的混合物被掺合到粘土中。陶片的内表面经过磨光，呈黑色。外表面比较粗糙，颜色斑驳。颜色以褐色为主，红色次之。用于烹煮和储藏食物的筒形罐、盆和瓮等，是最主要的夹砂陶器形。短粗且浅的压印之字纹是夹砂陶的主要装饰（图片 2.1），也发现了少量刻划纹。

与夹砂陶相比，泥质陶的火候更高，质地更加精细、均匀。此类陶器的表面施有红色陶衣，内、外表面均有磨光。有泥质彩陶，多用几何形图案来装饰。大多数泥质陶的颜色以红色为主，灰色次之，还有少量黑色。虽然泥质陶罐出现的频率较高，但最常见的生活类陶器仍然是钵、盆、壶这样的盛食器。严格意义上的祭祀类陶器仅见大型无底的彩绘筒形器，通常出土于红山文化的积石冢。一些筒形器残片的个体很大，而且保存较好，所以容易识别。我们确定了两种具备断代意义的筒形器类型，早期筒形器的口沿为折沿（图 2.2 左），晚期的则为卷沿（图 2.2 右）。筒形器多为素面，也有少量用黑色的几何纹饰进行装饰（图片 2.3 左）。筒形器的颈部通常饰旋纹（图 2.3 右）。

大多数发掘出土的红山文化的陶片很容易识别。不过，对调查中采集的一些个体很小、没有纹饰且磨损较严重的红山文化陶片而言，辨别工作就变得十分困难。除非这些陶片在质地、掺合料、表面处理等方面有特别之处，否则很难将其与其它时期的一些小陶片区分开来。与之后时期的陶片明显不同的是，红山文化的夹砂陶胎质非常差，由于有机质掺合料的充分燃烧，在胎体留下较大的孔洞。此外，陶器的内表面多经过磨光，呈现黑色。红山文化的泥质陶十分细腻，呈柔和的红色，手感较软，有白垩粘土的触感。

小河沿文化的陶器

在大凌河上游调查中采集到的小河沿文化的陶片绝大多数为夹砂陶。相比红山文化的陶器，质地更加坚硬，据此判断其烧成温度更高。不过，小河沿文化的陶器表面常呈现斑驳的红褐色，这一点与红山文化的生活类陶器很相似。小河沿文化陶片的陶胎略呈粉红色，一般将云母或贝壳与砂粒混合作为掺合料。从大凌河上游调查中采集到的小河沿文化的陶片大多个体很小，难以辨明所属的器物类型。根据口沿部位的陶片判断，小河沿文化主要的陶器类型是用于蒸煮和盛储的筒形罐和钵。陶片的内表面多经过磨光，而外表面则装饰压印的网格状细绳纹（图 2.4）。这是小河沿文化特有的装饰风格，因此成为辨识小河沿文化夹砂陶片的主要依据。在一些小河沿文化的生活类陶器上，还发现了小型的乳突状装饰（图 2.5），是小河沿

marily of very small sherds. It was not often possible to determine what kinds of vessels these sherds derived from, but in those instances where rims were preserved, serving bowls *(bo)* and cylindrical jars (*tongxingguan*) for cooking and storage were the most commonly identified classes. The interior surface of these vessels was often polished, while their exteriors might be decorated with string impressions forming a grid or net-like pattern (Fig. 2.4). This latter style of decoration was used only during Xiaoheyan times, and is therefore the least equivocal means of identifying Xiaoheyan period coarse-paste ceramics. Small conical lugs (Fig. 2.5) are another common, although less diagnostic, decorative feature of some Xiaoheyan utilitarian vessels.

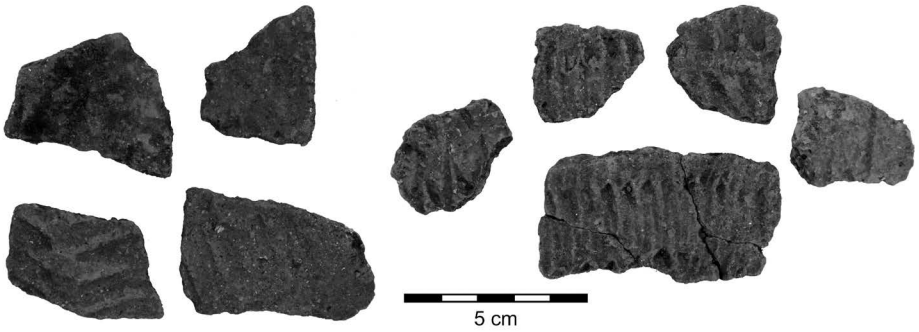


Figure 2.1. Decorated Hongshan coarse-paste sherds. Available online in color—see Appendix.

图 2.1 有纹饰的红山文化夹砂陶片（彩色图片可以从网络上获取，参见附录）

Fine-paste vessels were also made during Xiaoheyan times, but only a single fine-paste sherd was recovered during surface survey of the Upper Daling region. This rim sherd, which is pinkish-orange in color, belongs to a large bowl whose outer surface is decorated with a pattern of concentric loops, rendered in purple pigment, the ends of which connect to a set of parallel diagonal lines encircling the vessel's mouth (Fig. 2.6). Painted pottery of this sort is often excavated from Xiaoheyan period burials (Liaoning and Chifeng 1998; Neimenggu 2010b; Suo and Li 2006, 2008).

Fewer Xiaoheyan sherds were recovered by the Upper Daling project than those of any other period (except for the early Neolithic, for which no sherds were recovered at all), and these were typically among the most difficult to identify as to period. A similar result was observed following settlement survey in the nearby Chifeng region (Chifeng 2011). Through careful comparison with ceramics of unambiguous cultural affiliation, however, a few potentially diagnostic attributes of Xiaoheyen period sherds were delineated by the Upper Daling project as an aid to their recognition in regional survey collections. For larger sherds, surviving surface decoration of the sort discussed above usually provided the clearest and most accurate means of identification. Much smaller sherds rarely preserved traces of any decoration, however, and on causal examination these could look superficially similar to those of the earlier Hongshan period. Undecorated sherds were identified as Xiaoheyan, though, based on the combination of the denser paste used, its pinkish tint, the presence of shell or mica temper, and the sherds' slightly greater overall hardness. Even so, it was not always possible to distinguish between sherds of the two periods with absolute certainty. Occasionally there even arose confusion over whether a particularly hard and well-fired sherd might not instead belong to the subsequent Lower Xiajiadian period. Development of a more comprehensive suite of Xiaoheyan sherd attributes, focused on additional aspects of paste, temper, surface treatment, and production, would make it easier and more efficient to recognize Xiaoheyan sherds in regional survey collections.

Lower Xiajiadian Period Ceramics

Across much of northeastern China, Lower Xiajiadian period ceramics have been more extensively studied than those of earlier periods, and aspects of vessel form, paste, surface color, decoration, and production technology, among others, are well summarized in the archaeological literature. In several respects, Lower Xiajiadian pottery differs markedly from that of Hongshan or Xiaoheyen times. It was fired at much higher temperatures under more stable conditions, producing a very hard (almost metallic-like) fabric and a relatively uniform surface color. The set of decorative motifs used is highly standardized. And the array of vessel forms that were made is more diverse than for earlier periods. For the first time many vessels were made with the aid of molds and potter's wheels.

Despite these broadly-shared changes in ceramic technology, regional variability in assemblage characteristics is more pronounced for Lower Xiajiadian times than for earlier periods. Lower Xiajiadian period pottery assemblages

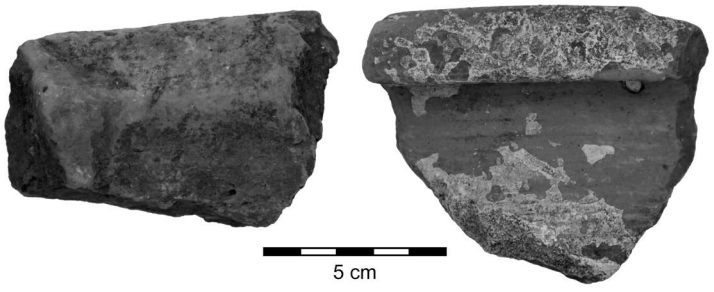


Figure 2.2. Hongshan *tongxingqi* rims: early (left) and late (right). Available online in color—see Appendix.

图 2.2 红山文化筒形器口沿：左侧为早期，右侧为晚期（彩色图片可以从网络上获取，参见附录）

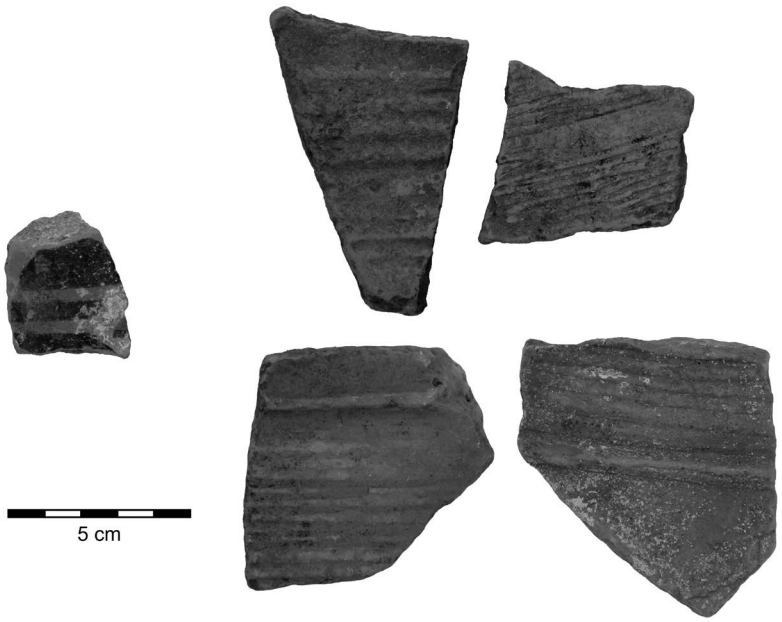


Figure 2.3. Decorated Hongshan *tongxingqi* sherds: black painted zig-zag motif (left) and parallel line motif (right). Available online in color—see Appendix.

图 2.3 有装饰的红山文化筒形器陶片：左侧为黑彩图案，右侧为旋纹（彩色图片可以从网络上获取，参见附录）

文化的另外一个流行的装饰特点。

小河沿文化同样生产泥质陶，在大凌河上游调查区域中，仅仅采集到一片小河沿文化的泥质彩陶片。这是一个大型陶钵的口沿部分，陶色为粉红至橙红。口沿的外表面装饰着平行斜线纹，显示出紫色的颜料，腹部饰半同心圈纹（图 2.6）。类似的彩陶器在小河沿文化的墓葬中常有出土（辽宁和赤峰 1998；内蒙古 2010b；索和李 2006，2008）。

在大凌河上游的调查中，相比其它时期（新石器时代早期除外，因为调查中未发现任何新石器时代早期的陶片），小河沿文化的陶片发现很少，而且比较难于辨识，这与临近的赤峰地区的调查结果相同（赤峰 2011）。不过，在大凌河上游调查项目中，经过对这些文化属性比较模糊的陶片进行认真对比，我们总结出了一些小河沿文化陶片的潜在特征，为识别区域调查中的采集陶片起到帮助作用。对于个体较大的小河沿文化的陶片，表面残存的纹饰通常是判断年代最有效和最准确的依据。而那些个体很小的小河沿文化陶片的表面几乎没有留下任何纹饰，在肉眼鉴别的时候，初看上去很像红山文化的陶片。然而，根据陶片胎质更致密、色泽偏粉色、有夹蚌或夹云母的现象、整体硬度略高等一系列特征，那些素面的陶片仍然可以被断定为小河沿文化的陶片。即便如此，我们并不总是能够非常有把握地区分小河沿和红山文化这两个时期的陶片。有时候，甚至会出现这样的疑惑：某一块质地特别坚硬、火候很高的陶片有没有可能根本不属于小河沿或者红山文化，而是属于夏家店下层文化？不断总结小河沿文化陶片更加全面的特征，尤其是收集与胎质、掺合料、表面处理以及生产相关的信息，将使得小河沿文化陶片的鉴别更加简单和有效。

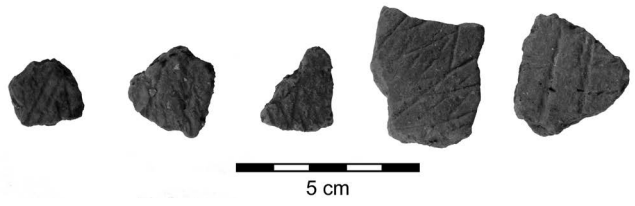


Figure 2.4. Decorated Xiaoheyan sherds. Available online in color—see Appendix.

图 2.4 有纹饰的小河沿文化陶片（彩色图片可以从网络上获取，参见附录）

夏家店下层文化的陶器

夏家店下层文化是中国东北地区一支极为重要的青铜时代早期的考古学文化，与之前的其它时期相比，对该文化陶器的相关研究更加全面。已有的考古文献中，对这一时期陶器的器形、胎质、表面颜色、纹饰以及生产技术作了非常细致的总结。夏家店下层文化的陶器与红山或小河沿文化的陶器在许多方面存在十分显著的区别。制作技术更加成熟，烧成温度更高，质地十分坚硬，表面颜色相对均匀。器物的装饰纹饰体现出高度标准化的特点，器形也较之前时期更加丰富。许多器物的生产使用了模制和轮制技术。

虽然陶器技术方面的变化是广泛存在的现象，但就器物组合特征的区域多样性而言，夏家店下层文化远远超出之前的任何时期。以大凌河上游区域调查中的夏家店下层文化陶器组合为例，其中，红色陶器所占比例更高，相应地，黑色陶器的比例较低，低于赤峰地区。在大凌河上游区域采集的泥质陶片中，红色和黑色的比例都低于褐色或灰色的比例。夹砂陶的颜色主要为褐色或红褐色。典型器物包括鬲和甗（蒸煮器）、罐和瓮（存储器）以及盆和豆（盛食器）。夏

Figure 2.5. Xiaoheyan sherd with small lug.
Available online in color—see Appendix.

图 2.5 带有小突钮的小河沿文化陶片
（彩色图片可以从网络上获取，参见附录）

in the Upper Daling region display considerably higher proportions of red wares, and lower proportions of black wares, for example, than do those in other areas (such as Chifeng). Among Upper Daling fine-paste sherds, red and black are both less common than brown or gray; and sand-tempered coarse-paste sherds are predominantly brown or reddish-brown in color. Typical vessels include tripod caldrons (*li*) and steamers (*yan*) for cooking, jars (*guan*) and urns (*weng*) for storage, and basins (*pen*) and stemmed cups (*dou*) for serving food. Cord impressions were used to decorate the majority of Lower Xiajiadian coarse-paste pottery (Fig. 2.7). These impressions are sometimes separated into bands (Fig. 2.7 right), or accompanied by punctate impressions (Fig. 2.8 left) or crimped appliqué strips (Fig. 2.8 right). Semilunar lugs with triangular cross-sections are also not uncommon (Fig. 2.9). Lower Xiajiadian fine-paste pottery is much thicker and harder than that of earlier periods, and, like coarse-paste vessels, frequently decorated with cord impressions; its red wares are dark red, not reddish-orange, in color. These characteristics enable one to easily differentiate it from the fine-paste ceramics of Hongshan and Xiaoheyan times.

Figure 2.6. Xiaoheyan bowl sherd with painted decoration.
Available online in color—see Appendix.

图 2.6 带有彩色纹饰的小河沿文化陶钵口沿
（彩色图片可以从网络上获取，参见附录）

Upper Xiajiadian Period Ceramics

The large area over which Upper Xiajiadian period remains are distributed is sometimes subdivided into two different but related archaeological cultures—Upper Xiajiadian in the west, and Shiertaiyingzi in the east. The Upper Daling region falls within the area usually ascribed to the latter, whereas Chifeng is in the zone of the former. The two variants are almost contemporaneous and their ceramics are only minimally different from one another. We are not here concerned primarily with regional variability in material culture, but rather with the trajectory of social change through time in the Upper Daling region. It is especially important to our aims to look at this trajectory from a comparative perspective that includes regions like Chifeng from which similar information is available. We thus refer to this period as Upper Xiajiadian for the Upper Daling region as well.

The pottery of this period is distinctive and easily identifiable. Assemblages are dominated by sand-tempered coarse-paste sherds. These are red or reddish-brown in color with black or gray spots, often visible on even very small body sherds, which result from uneven firing temperatures. In contrast to the use of potter's wheels and molds during Lower Xiajiadian times, Upper Xiajiadian ceramics reverted to being modeled by hand. As a result, vessels of the same type are more irregular in shape, and wall thickness less uniform. Tripod caldrons (*li*) and steamers (*yan*) continue to be among the most common vessel types. These have relatively straight-sided bodies with circular cross-sections, and large, solidly made conical feet. Tall stemmed cups with handles (*dou*), and straight-sided open-mouthed jugs (*hu*) are also very common. Most vessels have a square lip (Fig. 2.10 left) produced by folding the rim over and pinching it flat to the outside of the body (Fig. 2.10 right). The resulting rim band is nearly always the only decoration found on Upper Xiajiadian vessels. From the rim down, the inner and outer surfaces were scraped and lightly smoothed to impart a distinctive finish with a unique texture. The use of horizontal lugs continued to be as popular as it was during Lower Xiajiadian times (Fig. 2.11).

In the Chifeng region, Upper Xiajiadian stemmed cups (*dou*) and other similarly elaborate serving vessels were sometimes finished with a finely polished dark red clay slip. This surface treatment was not observed for sherds recovered in the Upper Daling survey area. Nor were tripod caldrons (*li*) with globular bodies recovered—which is a vessel form seen quite often in Chifeng.

The most salient characteristic of Upper Xiajiadian pottery is its distinctive form of surface smoothing, which gives it a unique feel, such that even very small surface sherds are easily identified.

Zhanguo-Han Period Ceramics

During the Zhanguo-Han period the Upper Daling region came to be dominated by the Yan, Qin, Han and Eastern Han states in relatively quick succession. Upper Daling

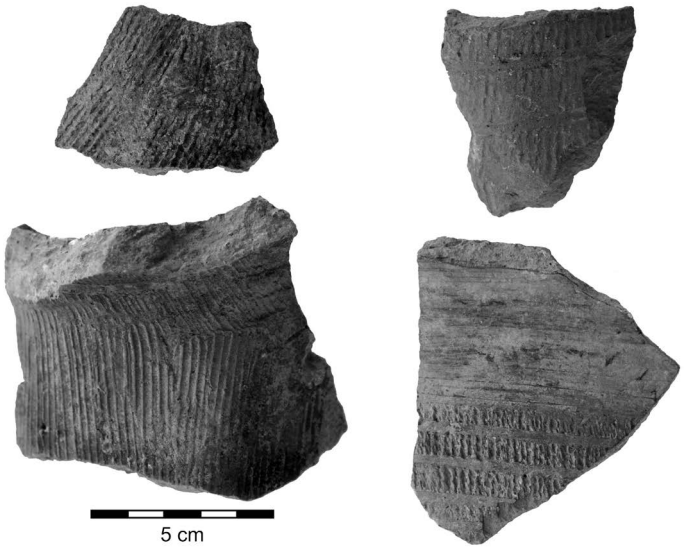


Figure 2.7. Cord-impressed Lower Xiajiadian sherds. Available online in color—see Appendix.

图 2.7 带有绳纹的夏家店下层文化陶片（彩色图片可以从网络上获取，参见附录）

家店下层文化的夹砂陶大部分装饰着绳纹（图 2.7）。有时候，这些绳纹被分割成许多短的带状纹饰（图 2.7 右），又或是伴着戳印纹（图 2.8 左）或附加堆纹（图 2.8 右）。此外，半月形横鋬耳同样十分流行（图 2.9）。与之前时期相比，夏家店下层文化泥质陶器的胎体更厚，硬度更高，并且普遍装饰绳纹。其红陶的颜色呈暗红色，而并非橙红。综合以上特征，我们可以很容易地将夏家店下层与红山和小河沿文化的泥质陶片区别开来。

夏家店上层文化阶段的陶器

现在，学者们认为，夏家店上层文化分布在努鲁尔虎山西北侧，十二台营子文化分布在努鲁尔虎山东南侧。所以，大凌河上游区域属于十二台营子文化区，赤峰地区属于夏家店上层文化区。这两支考古学文化存在的年代大体相当，文化面貌有很多相近之处，陶器上的差别小。本文并不过于关注物质文化的区域多变性，相反，我们关注的是大凌河上游地区随时代变迁而出现的社会变化的轨迹。因此，就我们的研究目的而言，将拥有相似数据的赤峰地区囊括进来，从比较的角度分析社会变化的轨迹，就显得格外重要。由于学术界习惯上将前后衔接的夏家店下层、上层文化作为考古学文化发展序列的固定搭配，本文从之，故使用了夏家店上层文化阶段这一称谓。

这一阶段的陶器颇具特色，容易辨识。陶器以夹砂陶为主，颜色呈红色或红褐色，由于烧制温度不均匀，器身通常有黑色或灰色的斑点。与夏家店下层文化使用的轮制和模制技术不同，这一阶段重新开始流行手制，所以器型较不规则，器壁厚度也不均匀。鬲和甗仍是最常见的器物类型，腹壁较直，呈筒状，锥状实足跟较长。高柄豆、敞口直腹碗和壶也较常见。大多数器物为方唇（图 2.10 左）、外叠沿（图 2.10 右）。外叠沿成为夏家店上层文化阶段陶器几乎唯一的表面装饰。自口沿向下，陶器的内、外表面被反复刮擦和适度磨光，最终形成具有独特质感的表面。横鋬耳在这一时期十分流行（图 2.11）。

在赤峰调查区域的夏家店上层文化，比较流行在豆等精致盛食器皿的表面施一层研磨细腻的深红色化妆土。在大凌河上游调查区域，表面进行上述处理的陶片并未发现。此外，赤峰地区较为常见的双耳鼓腹鬲在大凌河上游调查区域也没有发现。

夏家店上层文化阶段陶器最为显著的特点是内、外两面均磨光，手感十分独特，因此，即便很小的陶片也容易识别。

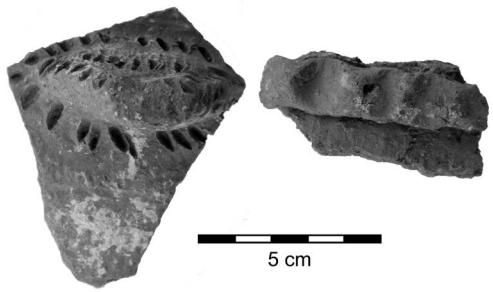


Figure 2.8. Lower Xiajiadian sherds: with punctate impressions (left) and with crimped appliqué strips (right). Available online in color—see Appendix.

图 2.8 夏家店下层文化陶片：左侧为戳印纹，右侧为压印附加堆纹（彩色图片可以从网络上获取，参见附录）

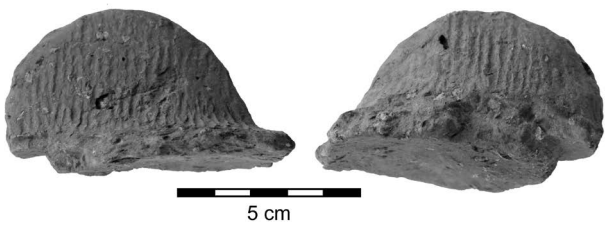


Figure 2.9. Lower Xiajiadian sherds with semilunar lugs. Available online in color—see Appendix.

图 2.9 带有半月形鋬耳的夏家店下层文化陶片（彩色图片可以从网络上获取，参见附录）

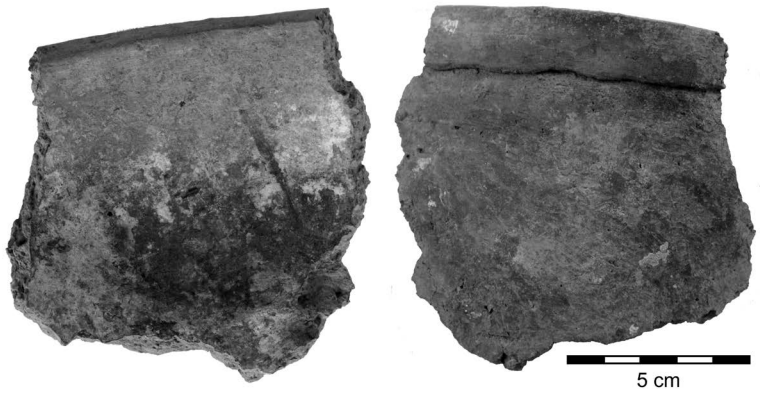


Figure 2.10. Upper Xiajiadian rim sherds.
Available online in color—see Appendix.
图 2.10 夏家店上层文化阶段陶器口沿
（彩色图片可以从网络上获取，参见附录）

society was heavily influenced by Central Plains culture, although some indigenous cultural elements were retained. Ceramic technology and manufacturing techniques were among those aspects of the economy that changed greatly, however, producing ceramic assemblages with few local antecedents. Pottery was wheel-thrown, and fired at high temperature to a very high degree of hardness. Two kinds of Zhanguo-Han ceramics were observed for the Upper Daling region. The first is made of a fine, gray paste of uniform color and granularity. The second is an orange to reddish-brown coarse-paste pottery tempered with coarse sand and mica. The iridescence and soapy texture of the mica makes the latter pottery especially easy to identify as Zhanguo-Han in age.

Typical vessels include round-bottomed kettles (*fu*), globular pots (*guan*), short-necked jugs (*hu*), and stemmed cups with handles (*dou*). The kettles were often reused as burial urns for children, by butting two of them together rim-to-rim. Fine-paste ceramics were decorated with dentate stamping arranged in neat, closely-spaced rows that form parallel bands, as well as densely packed cord impressions reminiscent of the Lower Xiajiadian period. It was common to decorate certain coarse-paste vessels, such as kettles and jugs, with thicker, cruder variants of these impressions executed in a rotary pattern around the vessel's neck and abdomen.

The fine-paste pottery of this period is very delicate, with a uniform grain size and color that is easily distinguished from both Lower and Upper Xiajiadian ceramics. Pottery made with coarser paste contains an abundance of mica temper and is decorated with thick cord marking—a combination seen only during the Zhanguo-Han period.

Liao Period Ceramics

As previously mentioned, the Liao period does not refer to the span of the Liao dynasty proper, but instead to that following the Han dynasty through to the beginning of the modern era. It thus includes the Liao, Jin and Yuan dynasties, among others. The questions guiding the design of the Upper Daling research project are not focused on these later historical phases, so no attempt was made to subdivide the period any more finely. Even if this were not the case, however, information on archaeologically recovered ceramics ascribed to the Liao period is not yet detailed enough to enable one to do so with confidence. In any event, previous work on Liao period remains in the Upper Daling region by other researchers has shown that the majority of these do indeed date to the historic Liao dynasty, so this is the name given to the archaeological period.

Liao dynasty sherds have many unique characteristics, so it is easy to distinguish them from those of earlier periods. Ceramic assemblages are dominated by high quality, fine-paste sherds fired at very high temperatures. Sherds are typically a uniform light gray in color, although some are so dark as to be almost black. Most vessels were wheel-thrown, and jars (*guan*), basins (*pen*), urns (*weng*), bottles (*ping*), and bowls (*wan*) are among the most common forms. Rolled rims and lugs for lifting are often-seen features of these vessels. Compared to other periods, Liao ceramics are decorated rather simply, with linear incising, wave impressions, and dentate stamping, among other motifs. During the Liao dynasty, glazed pottery and porcelain appear for the first time in the Upper Daling region, and are found in large quantities. Bricks, roof tiles, tile-ends, and other building materials also occur in profusion.

At present we do not fully comprehend how the sometimes subtle features of Liao, Jin, and Yuan dynasty ceramics differ from one another, so the sherds of all three historical phases have been lumped together for analysis. Between the end of the Han dynasty and the beginning of the Liao, northeastern China underwent several important social and political changes that might well be reflected in the ceramic record, but discoveries of archaeological remains dating to this intermediate period are as yet very few,

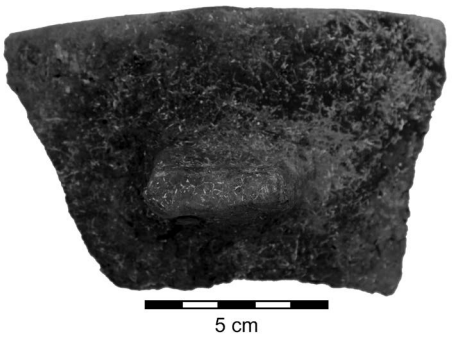


Figure 2.11. Upper Xiajiadian sherds with horizontal lugs.
Available online in color—see Appendix.
图 2.11 带有横鋬耳的夏家店上层文化阶段陶片
（彩色图片可以从网络上获取，参见附录）

战国—汉代的陶器

到了战国—汉代，大凌河上游调查区域先后历经燕、秦、西汉和东汉等帝国的统治与管理，王朝更替相对较为快速。虽然本地土著文化的因素依然存在，但已经受中原文化的影响至深。此时社会的经济变动剧烈，制陶技术和陶器风格也因此出现很大变化，时代性和地方性的特征鲜明。陶器都是轮制，火候高，质地坚硬。大凌河上游调查中采集的战国—汉代陶片主要有两类，一是泥质灰陶，胎土细腻，颜色纯正；二是夹砂陶，掺杂云母，多呈橙色或红褐色。云母闪烁光芒的独特色泽和滑腻手感，使得战国—汉代的陶片在调查中很容易被发现和识别。

战国—汉代的典型陶器有圜底釜、鼓腹罐、短颈壶和高柄豆等。夹砂和云母的圜底釜多被作为儿童的瓮棺葬具，通常是两个口沿相对，接合在一起。泥质灰陶器多用压印纹装饰，细密规整，排列整齐，多呈平行条带状，与夏家店下层文化的旋断绳纹十分相似。此外，在陶釜和陶壶的表面，也流行一种平行的粗旋纹，装饰在器物的颈部和腹部。

战国—汉代的泥质灰陶制作十分精致，胎土细腻，颜色纯正，与夏家店下层和上层文化的灰陶容易区分。含有大量云母的夹砂陶和很粗的绳纹是战国—汉代特有的现象。

辽代阶段的陶器

这里的“辽代阶段”并非特指历史上的辽代，而是泛指自汉以降直至近现代这么一个很长的时期。因此，此处的“辽代阶段”包括了辽、金、元以及其它一些朝代。基于课题设计和研究内容，大凌河上游的调查项目更加关注早期历史，而不是时代较为靠后的历史时期，故划分出“辽代阶段”这一广泛的历史时期，并不再进一步分期。另一个原因是，这一阶段的考古工作不够充分，我们无法依据陶器资料将其划分为更加细致的若干时期。第三个原因是，以往学者对大凌河上游区域内辽代遗物的考古工作表明，大多数遗迹和遗物的确属于历史上的辽代。综合上述几点考虑，我们采用了“辽代阶段”这一称谓。

辽代的陶片有许多独特的特征，很容易和之前各时期的陶片相区分。陶器以高质量的泥质陶为主，胎土十分细腻，烧成温度很高，质量非常好。陶片的颜色一般呈均匀的浅灰色，但也有一些近乎黑色。大多数陶器为轮制而成，最常见的器形有罐、盆、瓮、瓶、碗等。卷沿和器耳在这些器物上较为常见。与之前时期相比，辽代陶器的装饰风格比较朴素，常见线形的刻划纹、压印的波浪纹以及篦点纹等。自辽代开始，釉陶和瓷器开始出现在大凌河上游区域，并且数量较多。此外，也发现了数量众多的砖、瓦、瓦当以及其它一些建筑材料。

目前我们还没有完全了解和掌握辽、金、元各朝代的陶器特征，所以不能精确识别和区分这三个朝代的陶片，因此我们判定为“辽代阶段”的陶片实际包含了辽、金、元三个时期的陶片。在汉末至辽初之间的这段时期，中国的东北地区历经了数次重要的社会和政治转变，这理应在陶器上有所反映。然而，考古发现的属于这一时段的遗物很少，究竟这些社会和政治转变如何对大凌河上游区域产生影响，我们对此实在缺乏了解。

绝对测年

基于上述各时期的陶器特征，本报告构建了一个年代框架，请参见图 2.12。考古学文化序列与赤峰调查区基本相同（赤峰 2011）。虽然如我们之前提到的那样，即便是相同阶段的考古学文化，赤峰调查区和大凌河上游区域在陶器组合上也还是存在一些差别，但两个地区的考古学文化的年代框架仍保持相似，从而有助于我们对这两个区域内古代聚落的数据进行比较研究。对某些方面的研究而言，能够区分不同的陶器组合并识别它们的文化属性，就已经足够了。然而，对另外一些研究，例如人口估算，就有必要对不同陶器组合所属时代的实际时间跨度有一个大致的估计。碳十四测年是实现这一目标的方式。在赤峰调查中，共采集到近 80 个碳十四测年数据，以构建该地区的绝对年代谱系（Shelach, Drennan 和 Peterson 2011）。在大凌河上游调查项目中，我们进行了考古发掘（相关详细信息请参见本书第三章以及在线数据库的附录部分），获取到有价值的碳十四测年数据，这些数据进一步支持和细化赤峰地区的年代框架。本书关于绝对年代框架的所有讨论都是基于校正后的碳十四数据。

在赤峰调查区，新石器时代早期的起止时间为公元前 6000 年到公元前 4500 年，以兴隆洼和赵宝沟文化为代表。在大凌河上游调查区域，没有发现兴隆洼或赵宝沟文化的任何遗物（参见第三章）。因此，大凌河上游调查区域的文化序列开始于红山文化，大约公元前 4500 年。不过，红山文化最早的两个测年

so it is unclear how these changes may have impacted the Upper Daling region.

Absolute Dating

The chronological scheme used in this volume, based on the ceramic characteristics described above, is summarized in Fig. 2.12. This sequence of periods was adopted from that previously used in Chifeng (2011). Although some differences between the assemblages of the Upper Daling and Chifeng regions assigned to the same period are noted above, the basic structure of periods has been retained to facilitate comparison of the two regional settlement datasets. For some purposes, being able to recognize these different ceramic assemblages and put them in proper chronological order is sufficient, but for others, like population estimation, it is also necessary to make an approximation of the actual lengths of time these ceramic assemblages span. Radiometric dating is the means of accomplishing this aim, and nearly 80 radiocarbon dates were used to construct the absolute time scale used in Chifeng (Shelach, Drennan, and Peterson 2011). The stratigraphic testing undertaken by the Upper Daling project, discussed at greater length in Chapter 3 and online (see Appendix), has produced additional radiocarbon dates that provide further support for—and refinement of—this chronology. All discussion of absolute chronology in this volume is framed in terms of calibrated radiocarbon dates.

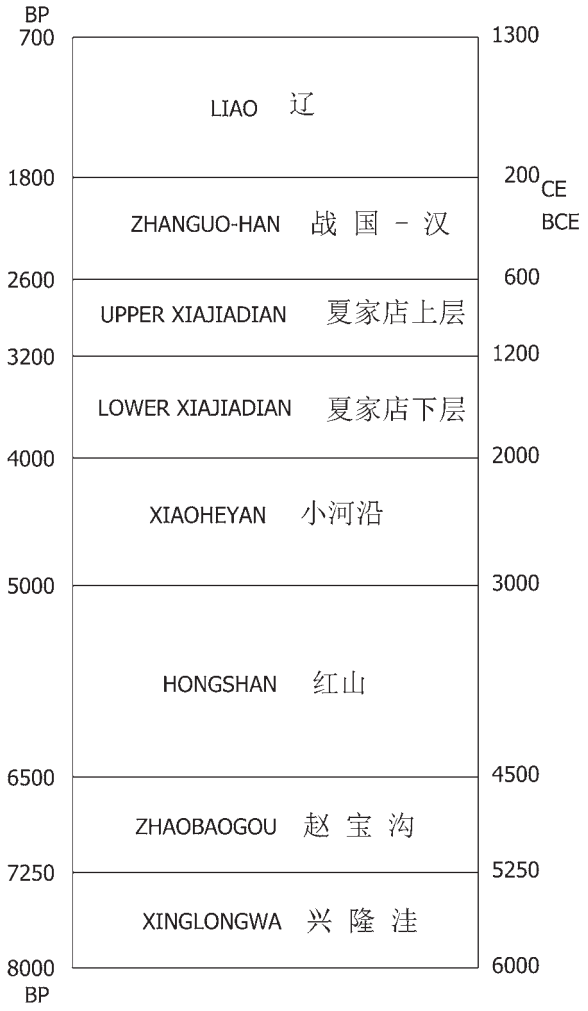


Figure 2.12. Sequence of periods in the ceramic chronology.

图 2.12 陶器年代学确立的文化序列

In Chifeng, the early Neolithic lasts from 6000 to 4500 BCE as represented by the Xinglongwa and Zhaobaogou periods, which did not appear at all among the materials recovered in the Upper Daling region (see Chapter 3). The Upper Daling sequence thus begins with the subsequent Hongshan period at 4500 BCE. There are, however, two radiocarbon dates from Hongshan cultural deposits that are earlier than this traditional starting date for Hongshan times: 5865±90 BP (ZK-1934) calibrated with a 1-sigma range (68% confidence) to 4840–4610 BCE, and 5735±85 BP (ZK-2064) calibrated with a 1-sigma error range to 4690–4490 BCE (Zhongguo 1991:57). Because there is a large gap between these very early dates and those few others available for the Hongshan period, they have been viewed with suspicion and often dismissed as anomalous. Test XD/XL in the Dongshanzui area (Chapter 3 and online—see Appendix) produced four other radiocarbon dates of comparably early age (with a collective calibrated 2-sigma range [95% confidence] of 4690–4450 BCE). The sample of absolute dates from Hongshan deposits thus now includes nearly as many that fall before the traditional start date for the period as it does later ones that fit comfortably within it. Although we have used the 4500 BCE start date in the analyses that are presented in this report in order to maintain comparability with those for Chifeng, it is beginning to appear that the boundary dividing the Zhaobaogou and Hongshan periods may need to be pushed back slightly in time.

The Hongshan period is customarily ended at 3000 BCE. This is conveniently soon after the most recent Hongshan date and just before the oldest date for Xiaoheyan ceramics. The Xiaoheyan period is bracketed, however, by just three dates: the earliest one (4345±80 BP [WB-82-08] calibrated with a 1-sigma range to 3090–2880 BCE), and two others nearly a millennium more recent (Zhongguo 1991:55). Xiaoheyan radiocarbon dates, then, like Xiaoheyan ceramics, are extremely scarce, and additional information about this part of the sequence is much needed. Test XK in the Erbuchi area in the Upper Daling region (Chapter 3 and online–see Appendix) produced one radiocarbon date that bears on this problem. This sample was recovered from a layer at the bottom of a stone-lined storage pit filled with both Hongshan and Xiaoheyan sherds. It yielded a date of 4205±30 BP (BA-110806) with a calibrated 2-sigma range of 2900–2830 BCE (30% probability) and 2820–2670 BCE (68% probability). The transitional nature of the associated ceramic assemblage suggests that the boundary between the Hongshan and Xiaoheyan periods may need to be moved somewhat, although whether

数据的年代比通常认为的红山文化的起始时间要早。这两个数据分别是 :5865±90 BP (ZK-1934)，校正后年代为公元前 4840 年至公元前 4610 年（1 σ，置信度 68%)；5735±85 BP (ZK-2064) 校正后年代为公元前 4690 年至公元前 4490 年（1 σ，置信度 68%）（中国 1991:57)。鉴于这两个测年数据与其它少数已有的红山文化的测年数据存在很大的年代间隔，长期以来，它们的准确性受到学界的质疑，并被当做异常值加以排除。在东山嘴遗址附近编号为 XD/XL 的探方（参见第三章以及在线数据库的附录部分），获得了四个碳十四测年数据，校正年代为公元前 4690 年至公元前 4450 年（2 σ，置信度 95%)，与上述两个年代数值相近。从而，在红山文化的绝对年代数据中，早于通常认为的该文化起始年代的数据量与稳妥地落入该文化年代内的数据量几乎相等。虽然在本书中，我们仍然使用公元前 4500 年作为红山文化的起始时间，但这主要是为了保持与赤峰调查区的可比较性。我们已经开始意识到，赵宝沟与红山文化的分界点应该稍微提早一些。

通常认为，红山文化结束于公元前 3000 年。这个时间点正好落在红山文化最晚的测年数据之后，在小河沿文化最早的测年数据之前。小河沿文化的绝对年代框架是由三个数据确定的，最早的测年数据为 4345±80 BP (WB-82-08)，校正后年代为公元前 3090 年至公元前 2880 年（1 σ），其余两个测年数据则晚了将近 1000 年（中国 1991:55)。小河沿文化的碳十四测年数据非常少，因此，十分需要有关年代序列的更多信息。从大凌河上游调查区二布尺遗址的探方 XK（参见本书第三章以及在线数据库的附录部分），我们获取了一个测年数据，将有助于改善上述年代问题。这个测年样本来自于一个石筑窖穴的底层，窖穴内有红山和小河沿文化的陶片。碳十四测年的结果为 4205±30 BP (BA110806)，校正后年代为公元前 2900 年至公元前 2830 年（2 σ，置信度 30%)，或公元前 2820 年至公元前 2670 年（2 σ，置信度 68%)。红山与小河沿文化陶片的混合出现表明这两个文化在时间上具有过渡性，因此，两个文化在时间上的分界点可能需要一点变动。当然，在没有更多的测年数据和陶器信息之前，还不能确定是将两个文化的分界点提前还是推后。

陶片释光测年的初步结果对确定红山与小河沿文化的年代有帮助，并且对红山与小河沿文化陶片特征的解释也有帮助。在东山嘴遗址发掘区以北约 50 米处的地表（对应区域调查中的采集单位 A001 和 A002)，采集了 8 个红山文化的陶片，用于释光测年。使用了热释光与光释光两种测年方法（关于测年方法与结果的详细信息可在线查询—见附录）。最终结果显示，陶片年代最早可追溯至公元前 4120±390 年，最晚到公元前 1800±200 年（表 2.1，图 2.13)。依据较早的释光测年数据和探方 XD 的碳十四测年数据，可以推测东山嘴遗址祭祀建筑区域的居住遗迹开始于红山文化较早的时期。有一半的释光测年数据落在通常被认为是红山文化结束点或更晚的地方，这与我们之前提到过的（赤峰 2011:117)，也是本书第四章将要深入探讨的一个建议相符，即 : 一些在公元前第三千纪中制作和使用的陶片可能具有红山文化陶片的特征。这可能暗示着，被许多考古学家判定为红山文化的遗物和活动有可能延续了更长时期，进入到了小河沿文化的时间框架。在本书第四章中，我们将更进一步讨论由红山文化过渡到小河沿文化的转变性质，但在现有分析中，我们仍将公元前 3000 年作为红山文化结束的时间点。

小河沿文化之后就是夏家店下层文化，一般认为，夏家店下层文化开始于公元前 2000 年。基于充足的和高度一致性的碳十四测年数据，夏家店下层文化的年代序列非常清楚。不过，夏家店下层文化最早的三个测年数据 (ZK-0176, ZK-0699 和 ZK-2225) 落在公元前第 3 千纪之内，也就是通常认为的小河沿文化的时间范围。其中，最早的数据落在小河沿文化的最早与最晚的测年数据之间，这使得小河沿文化与夏家店下层文化年代界限的划分更加复杂。在大凌河上游区域的工作中，我们并没有获取到有助于确定夏家店下层文化年代界限的材料。夏家店下层文化现有测年数据的分布趋势表明，这一文化的开始时间很可能要追溯到大约公元前 2200 年至公元前 2300 年。在分析中，我们一般将公元前 2000 年作为夏家店下层文化的开始时间，不过，针对夏家店下层文化可能更早的起始时间及其启示，我们将在本书第四章中进行探讨。

夏家店下层文化一直延续到公元前 1200 年，随之被夏家店上层文化取代。这两个文化的绝对年代之间仅有很小的一段重叠，因此它们的分界点是相当清楚的。相比夏家店下层文化，夏家店上层文化的绝对测年数据稍少，并且集中在该文化的中期。因此，要在现有测年数据的基础上确定夏家店上层文化的结束时间，是一件有难度的事情。所以，将公

TABLE 2.1. THERMOLUMINESCENCE DATES FROM DONGSHANZUI

表 2.1 东山嘴采集陶片的热释光测年数据

Lab No. 实验室编号	Date 年代	Sherd Description 陶片描述
UW2617	3000 BCE ± 270	Coarse paste, brown jar body sherd with Z-motif on exterior 夹砂陶，罐身残片，呈褐色，表面装饰“之”字纹
UW2618	3490 BCE ± 364	Fine paste, red bowl body sherd with red slip 泥质陶，碗身残片，呈红色，有泥釉
UW2619	3560 BCE ± 280	Fine paste, red bowl body sherd with paint on interior and exterior 泥质陶，碗身残片，呈红色，内、外表面施彩
UW2620	2610 BCE ± 220	Fine paste, brown jar body sherd without decoration 泥质陶，罐身残片，呈褐色，无装饰
UW2621	2000 BCE ± 180	Coarse paste, red jar body sherd with lug 夹砂陶，罐身残片，呈红色，有手柄
UW2622	4120 BCE ± 390	Fine paste, gray bowl body sherd without decoration 泥质陶，碗身残片，呈灰色，无装饰
UW2623	4040 BCE ± 300	Fine paste, red jar rim sherd without decoration 泥质陶，罐口沿残片，呈红色，无装饰
UW2624	1800 BCE ± 200	Fine paste, red *tongxingqi* body sherd 泥质陶，筒形器器身残片，呈红色

forward or backward is unclear. Additional radiocarbon dates and other kinds of information about their associations will be required to determine which.

Initial results from luminescence dating of ceramics also bear on the issue of dating the Hongshan and Xiaoheyan periods. They also have implications for the interpretation of the characteristics described for Hongshan and Xiaoheyan ceramics. Luminescence dates were obtained for eight Hongshan sherds collected from the surface within about 50 m north of the principal excavated platform at the Dongshanzui site in an area corresponding to collection units A001 and A002 from the regional survey. The dates are based on combined thermoluminescence and optically stimulated luminescence analyses (full details of results and methods available online—see Appendix). The final dates range from as early as 4120±390 BCE to as late as 1800±200 BCE (Table 2.1, Figure 2.13). The early dates are consistent with the indications from radiocarbon dates from Test XD (above) that occupation in the area around the ceremonial structures at Dongshanzui began early in Hongshan times, and these dates are for samples obtained from the area immediately adjacent to the ceremonial structures. Fully half the luminescence dates, however, fall at or after the generally used ending date for the Hongshan period. This is consistent with a suggestion made previously (Chifeng 2011:117), and discussed further in Chapter 4, that some of the ceramics made and used during the third millennium BCE might have the characteristics generally used to identify sherds as Hongshan. This would imply that remains and activities dated by many archaeologists to the Hongshan period might actually pertain to an even longer period stretching well into the time frame generally assigned to Xiaoheyan. We have based the analyses in this volume on a 3000 BCE end date for the Hongshan period, although the nature of the transition from Hongshan to Xiaoheyan times is discussed further in Chapter 4.

The Xiaoheyan period is followed by Lower Xiajiadian, with a customary start date of 2000 BCE. It is well documented chronologically with very consistent and abundant radiocarbon dates. The three earliest radiocarbon dates for the Lower Xiajiadian period (ZK-0176, ZK-0699, and ZK-2225), however, actually fall within the limits of the third millennium BCE generally assigned to the Xiaoheyan period. The earliest of these falls into the space between the oldest and most recent Xiaoheyan dates, complicating delineation of its boundary with Lower Xiajiadian. Work in the Upper Daling region has not yielded any materials to help to delineate Lower Xiajiadian better, but the distribution of existing Lower Xiajiadian radiocarbon dates does suggest that its starting point might well be pushed back to around 2200–2300 BCE. Although we have used the 2000 BCE date in our analyses, some of the implications of an earlier possible beginning date for Lower Xiajiadian are explored in Chapter 4.

The Lower Xiajiadian period continues until 1200 BCE, when it is succeeded by Upper Xiajiadian. There is only slight overlap between the absolute dates for Upper Xiajiadian ceramics and those from Lower Xiajiadian times, so this boundary is well defined. There are fewer absolute dates for Upper Xiajiadian than for Lower

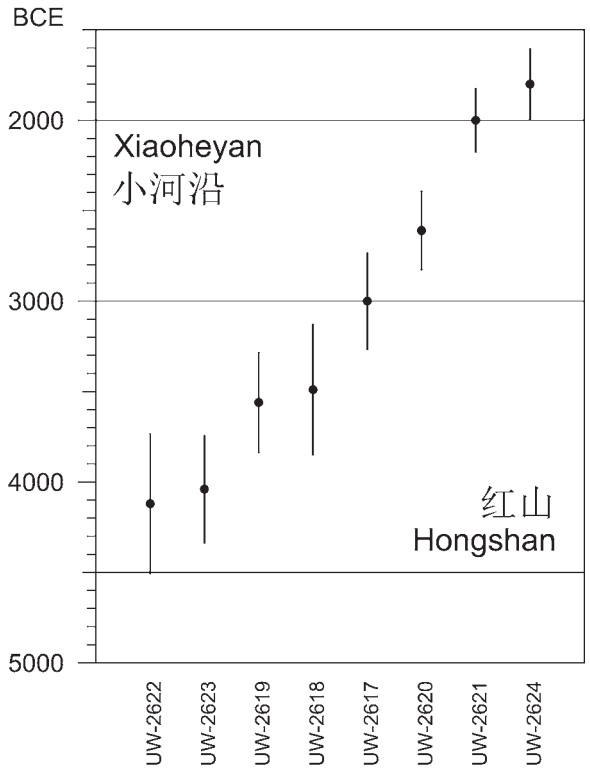


Figure 2.13. Thermoluminescence dates for sherds from Dongshanzui.

图 2.13 东山嘴遗址采集陶片的热释光测年数据

元前 600 年作为夏家店上层文化的结束点，更多依据的是历史文献记录，而并非测年数据。在三家遗址的探方 XS（参见本书第三章以及在线数据库的附录部分），获取了三个年代相近的碳十四数据，全部落在目前界定的夏家店上层文化的截止时间附近，这为公元前 600 年这一时间界限提供了支持。这三个测年数据分别为：2465±25 BP（BA110807），校正后年代为公元前 760 年至公元前 680 年（2 σ，置信度 30%），或公元前 670 年至公元前 480 年（2 σ，置信度 57%），又或公元前 470 年至公元前 410 年（2 σ，置信度 9%）；2480±30 BP（BA110808），校正后年代为公元前 770 年至公元前 490 年（2 σ，置信度 91%），或公元前 470 年至公元前 410 年（2 σ，置信度 5%）；2500±25 BP（BA110809），校正后年代为公元前 780 年至公元前 520 年（2 σ）。

战国—汉代（公元前 600 年至公元 200 年）和辽代阶段（公元 200 年至公元 1300 年）是年代序列中最后的两个时期，也是本书分析中涉及到的最晚的时期。历史文献对这两个时期的记载非常详细，因此，碳十四测年数据并不多。值得注意的是，此处区域聚落研究中使用的辽代阶段这一概念，对应着一系列可识别的陶片组合，这些陶片来自于包括辽代在内的若干个短暂存在过的朝代。借助地层发掘以及对辽代阶段遗址的碳十四测年数据，对这些陶片组合进行年代变化上的刻画，可以更加准确地重建这 1100 年内聚落模式的变化。

Xiajiadian, and most are concentrated in the middle part of the span usually assigned to the period. This makes it difficult to set an end for it on the basis of radiocarbon dates, so the ending date of 600 BCE is based more on historical records than radiocarbon dates. Test XS in the Sanjia area (Chapter 3 and online—see Appendix) produced three closely-spaced radiocarbon dates that all fall around the end of the period as currently defined, providing additional support for a 600 BCE limit: 2465±25 BP (BA-110807), with a calibrated 2-sigma range of 760–680 BCE (30% probability), 670–480 BCE (57% probability), and 470–410 BCE (9% probability); 2480±30 BP (BA-110808) with a calibrated 2-sigma range of 770–490 BCE (91% probability) and 470–410 BCE (5% probability); and 2500±25 BP (BA-110809) with a calibrated 2-sigma range of 780–520 BCE.

The last two periods in the sequence are Zhanguo-Han (600 BCE–200 CE) and Liao (200–1300 CE). They are the most recent periods dealt with in the analyses presented here. Being fully historical, they are not much documented by radiocarbon dates. It is worth noting that the Liao period as used here, in the context of regional settlement study, corresponds to a recognizable set of ceramics that span several short-lived historical dynasties in addition to the Liao dynasty. Delineation of temporal variation within this ceramic complex through stratigraphic excavation and radiocarbon dating of ceramics at Liao sites would permit more precise reconstruction of changing settlement patterns over the course of this 1100-year period.

Chapter 3

Regional Survey and Hongshan Residential Remains

Field and Analytical Methods for Regional Survey

The Upper Daling regional settlement survey was carried out in the early to mid summer of 2009. It employed what is by now a relatively standard intensive, pedestrian, complete-coverage surface survey methodology (Drennan 2011; Drennan et al. 2003b; Liaoning et al. 2010; Peterson et al. 2010). Teams of three to five trained archaeologists walked systematically back and forth across the landscape. Maximum spacing between crew members was 50 m. Areas of occupation were identified as surface scatters of ceramic sherds. Surface collections were made if two or more sherds were found within 50 m of one another. Within each sherd scatter, sherds were collected in separate collection units not exceeding 0.25 ha (50 m by 50 m). Larger areas of occupation were subdivided into multiple collection units of this size or less, whereas isolated scatters often comprised just a single collection unit smaller than this size if the sherd scatter extended no farther. The boundaries of all collection units were drawn on printed satellite imagery carried in the field. The minimum target sample size for sherd collections was 25 per collection unit, so as to be reasonably confident of characterizations of differences in the proportions of ceramics of different periods.

Where surface sherd densities were greater than about 0.5 per m^2, systematic collections were made of all sherds within a centrally-located dog-leash circle 3.6 m in diameter (10 m^2). If fewer than 25 sherds were obtained in one circle, additional circles located outside the first in a more distant corner of the unit were collected. In a collection unit where surface densities were as low as 0.5 per m^2, as many as five collection circles might be needed to attain a sample of 25. Where surface sherd densities appeared to be lower than about 0.5 per m^2, general collections were made from across the entire area of the collection unit. The same target sample size of 25 sherds pertained to general collections as well, but the target was not always reached in collection units where sherds were especially sparse.

The boundaries of the Upper Daling survey area were laid out to include the large, well-watered floodplain of the Daling River and its adjacent uplands. In the Chifeng region, frequent flooding, swampy conditions, and episodic shifts in river courses characterized valley bottoms throughout the Holocene, making them inhospitable zones for human settlement (Shelach and Avni 2011). Together with the fact that archaeological remains have almost never been observed during massive amounts of new construction in Chifeng city, this led to the decision in the Chifeng survey simply to consider the flat valley floodplain as unoccupied. Given the proximity of the Upper Daling region to Chifeng and their geological similarities, it also seemed unlikely that the Upper Daling floodplain would have had any meaningful amount of human occupation now covered by alluvium. Nonetheless, a 2.6 km^2 section of the floodplain (representing 9.1% of the total area of floodplain in the survey zone) was surveyed (Fig. 3.1). Particular attention was paid to erosional and artificial cuts and to back dirt from wells. A very few isolated and obviously redeposited sherds were discovered during this survey, and never more than one within a 50-by-50 m area; consequently, no collection units were recorded. It was thus deemed unproductive to carry out additional survey across the remaining valley floor. The floodplain is included as unoccupied territory in the analyses presented in this volume, as this is simply the most plausible reconstruction of where people lived during the periods those analyses cover. The small number of surface sherds that *were* observed in surveying in the floodplain also makes it clear that the remains of ancient settlements located above the floodplain have not been subject to extensive erosion, transport, and redeposition in the floodplain. If this had been the case, more sherds would be visible in the floodplain sediments, especially on the fluvial fans where the mouths of gulleys empty onto the valley floor.

Population estimates are essential to any realistic consideration of human communities. Other things being equal, larger numbers of people produce more garbage, so some means of quantifying the garbage left on the landscape during a particular period has become a common approach to demographic approximations in regional settlement study. From the Neolithic onwards, the most abundant, well-preserved, and useful component of garbage is the broken ceramics used and discarded in the course of daily living. The Upper Daling settlement study followed the same approach to population estimation developed for the Chifeng regional settlement study (Drennan et al. 2003a; Drennan and Peterson 2011; Drennan, Berrey, and Peterson in press). The field methods described above provide the basis for this approach in the form of actual measurements of both the areal extent and density of sherds of each archaeological period in each surface scatter. These measurements are used to produce an area-density index to

第三章

区域调查与红山文化的居住遗存

区域调查的田野工作和分析方法

大凌河上游区域性聚落调查于2009年5月中旬至7月上旬开展。采用了目前比较标准的密集性徒步踏查的全覆盖式区域调查方法 (Drennan 2011; Drennan 等 2013b; 吕 等 2010; Peterson 等 2010)。每个调查小组由 3 至 5 名受过训练的队员组成，队员之间的最大间距为 50 米，在调查区域内系统地往复徒步行走调查。地表上陶片散落的范围被确认为古人居住的区域。如果在 50 米的范围内发现 2 个或 2 个以上陶片，就在该区域进行表面采集。每个标准的采集单位的面积为 0.25 公顷（即 50 米 ×50 米），采集单位内的陶片被单独收集。面积较大的居住区域被划分为若干个 0.25 公顷大小的采集单位，而陶片分布范围有限的区域则被划定为一个比 0.25 公顷小的采集单位。在田野工作中，调查人员在打印出的卫星地图上勾勒出所有采集单位的界限。每个采集单位内需要采集的陶片样本数量为 25 个，这个数值能够保证区分不同时期陶片的特征和所占比例的差异。

如果地表陶片密度超过 0.5/ 平方米，调查队员将进行系统性采集。即在地面划出一个直径为 3.6 米的圆圈（面积约为 10 平方米），如果圆圈内采集陶片的数量少于 25，则在采集单位内远离此圆圈的一角布置另外一采集圆圈，直到采集到 25 个陶片，但是最多只能布置 5 个系统性采集圆圈。如果地表陶片密度低于 0.5/ 平方米，调查队员将在采集单位内进行一般性采集。一般性采集的陶片样本数量仍然为 25 个，不过对于陶片分布尤为稀疏的采集单位而言，这个目标很有可能达不到。

大凌河上游调查区域包括面积较大、水系发达的大凌河冲积平原以及临近高地。在赤峰地区，自全新世以来，频发的洪水、沼泽环境以及间歇性的河流改道一直是河谷底部的主要特点，这使得它们成为不适宜人类居住的区域 (Shelach 和 Avni 2011)。再加上赤峰市内大规模的城市建设几乎从未发现过考古遗存这一实际情况，赤峰调查项目因此将平坦的冲积河谷视为非人类居住区域。考虑到大凌河上游地区与赤峰相距较近且两者在地质上有诸多相似之处，期望在大凌河上游的冲积平原地层中发现大量古代人类的居住遗迹似乎也不太可能。不过，调查人员仍然对一块面积为 2.6 平方公里的冲积区域进行了调查（占调查区域内冲积平原总面积的 9.1%，图 3.1)。调查中尤其关注那些自然侵蚀和人为形成的断面以及从水井中挖出的土。在调查中发现了零星的明显重新沉积的陶片，但在任何一个 50 米 ×50 米的范围内，这样的陶片都不超过 1 个，因而没有布置采集单位。由此我们确信没有必要继续对河谷底部冲积平原的其余部分进行调查。在本报告的分析中，河谷冲积平原被认定为非人类居住区域，这是对所分析的考古学文化人群居住地点的最合理的复原。对冲积平原的调查仅发现少量的地表陶片，这表明所处位置高于冲积平原之上的古代聚落遗存没有经历大规模的土壤侵蚀、搬运和重新沉积。因为如果这种情况发生过，在冲积平原上，尤其是那些冲沟开口面向河谷底部的冲积扇，我们应当发现更多的地表陶片。

人口估算对于人类社区的真实认识至关重要。在其它条件不变的前提下，更大规模的人口势必产生更多的垃圾，因此，在区域聚落研究中，一个常规的估算人口数量的方法就是将某一特定时期内遗留在地表的垃圾进行某种定量处理。自新石器时代以来，日常生活中使用后丢弃的陶器残片是垃圾中最主要、保存最好和最有价值的部分。大凌河上游聚落研究采用了与赤峰地区聚落调查相同的人口估算方法 (Drennan 等 2003a; Drennan 和 Peterson 2011; Drennan、Berrey 和 Peterson 待刊)。之前描述的田野调查方法为人口估算打下了基础，提供了地表每一处陶片分布区域内不同时期陶片的分布范围和分布密度的实际测量数据。这些测量值经过计算产生面积 - 密度指数，成为人口估算的一个参数。对于系统性采集单位而言，面积 -

serve as a population proxy. Its calculation is most straightforward for systematic collections. The total number of ancient sherds of a given period from a collection unit is divided by the total area of the dog-leash circles from which they were collected. The resulting density (sherds/m^2 within the dog-leash circles) is multiplied by the total area of the (approximately 0.25 ha) collection unit the dog-leash circles are within.

Where general collections were made instead, there is no measured sherd density value to use in this calculation, but general collections are only made where sherd densities appear to be below 0.5 per m^2. Thus a density value of 0.5 sherds/m^2 or less can be assigned to collection units represented by general collections. For every general collection containing 20 sherds or more, a density value of 0.5 sherds/m^2 was assigned. If a general collection consisted of 10–19 sherds, this was because sherds were very sparse on the surface, and a density value of 0.3 sherds/m^2 was assigned. Similarly, a general collection of only 5–9 sherds came from an area of even sparser surface artifacts, and a density value of 0.1 sherds/m^2 was assigned. At the bottom of the scale, general collections with fewer than 5 sherds were assigned a density value of 0.05 sherds/m^2.

Once a sherd density value (in sherds/m^2) was determined for a collection unit, it was multiplied by the total area (in ha) of the collection unit. This area-density index is divided among all the periods represented according to the proportion of identified sherds pertaining to each period. Finally the area-density index for each period is divided by the number of centuries in the period to allow for the greater accumulation of remains during longer periods. It is this number that is used as a population proxy in the analyses presented in this volume. For some purposes, this population proxy has been converted into estimates of actual numbers of inhabitants, relying on the same basis of conversion established for the Chifeng regional settlement study (Drennan and Peterson 2011). Chifeng population estimates were produced by multiplying the population proxy by 500 and by 1000 for minimum and maximum estimates, respectively. It has been necessary to modify these numbers because the use of higher resolution 0.25 ha collection units in the Upper Daling survey has an unexpected impact on measuring occupation areas when compared to the 1.0 ha collection units used in Chifeng (cf. Drennan and Dai 2010:459–461). The larger collection units of Chifeng tend to produce larger measurements of the same occupation areas than the smaller collection units of the Upper Daling survey because the greater precision of smaller units detects gaps in occupation that are glossed over by larger units. Empirical comparison of occupation areas in the two regions reveals that the same occupation zones would be measured as about 50% larger on average with the Chifeng methodology. Thus the Upper Daling population proxy represents about 50% more people per area-density unit than the Chifeng one does. For this reason the Upper Daling population proxy is converted into absolute estimates by multiplying by conversion factors 50% higher than the ones used in Chifeng, which is to say, multiplying the population proxy by 750 for a minimum estimate and 1500 for a maximum.

Archaeological "sites," defined for convenience in the field, are often taken in settlement analysis to have a one-for-one correspondence with meaningful human social units, such as local communities. In order to avoid this dubious assumption, the Upper Daling settlement analysis utilized collection units, rather than sites, as its fundamental units of analysis. The centripetal forces of the social interaction that comprises communities, draw people closer together on the landscape, forming recognizable spatial clusters that, at the local scale, we are accustomed to calling "villages" or some such designation. Such local community units were sought in the Upper Daling data through a spatial cluster analysis of collection units. In similar fashion, the centripetal forces of interaction create larger-scale social units (supra-local communities or districts), and the Upper Daling analysis also sought such patterns through spatial clustering. The methods utilized and their rationale are discussed fully elsewhere (Peterson and Drennan 2005) and were applied in the Upper Daling analysis just as they were in the Chifeng regional study (Chifeng 2011).

Hongshan Surface Artifact Distributions at a Smaller Scale

The interpretation of settlement patterns at the regional scale builds up in important ways from understandings of archaeological remains at smaller scales. For data collected through pedestrian survey and surface collection, as in the case of the Upper Daling survey, surface artifact scatters are taken to represent areas of human activity during the periods to which the sherds recovered can be assigned. Since sherds are the most abundant preserved form of garbage, and since in most ancient societies most of the garbage is produced in residential contexts, these surface scatters are by and large taken to represent residential locations, although sometimes the particular characteristics of the artifact assemblages recovered suggest locations of special-purpose rather than general-residential use. The validity of such interpretations of regional-scale data generally depends on more detailed knowledge of the archaeological remains at individual locations.

Once the fieldwork of the regional survey had been completed we carried out more detailed investigation of several apparent areas of Hongshan residential occupation, in part to provide a sounder basis for interpreting the patterns recognizable in the regional-scale results. This more detailed investigation involved a series of stages of research, focusing in more and more tightly on smaller and smaller areas. A total of about 16 ha of surface artifact scatter was selected for the first stage in these more detailed excavations. These areas were selected because they presented varying densities of Hongshan ceramics on the surface and only small amounts of sherds of other periods. These 16 ha were divided between three areas within

密度指数的计算十分简单明了：采集单位内某一时期陶片的总数目除以采集这些陶片的系统性采集圆圈的总面积，由此得到的密度（陶片 / 平方米，系统性采集圆圈）再乘以采集单位的总面积（大约为 0.25 公顷）。

进行一般性采集的区域，由于没有陶片密度的测量值，因此无法使用上述计算方法。不过，进行一般性采集的单位通常地表陶片的密度都低于 0.5 个 / 平方米，所以，我们将 0.5 或稍小的数值作为一般性采集单位的陶片密度。对于包含 20 或更多个陶片的一般性采集单位，我们将 0.5/ 平方米作为其地表陶片密度。如果一般性采集发现 10 到 19 个陶片，这说明地表陶片的分布相当稀疏，我们将 0.3/ 平方米作为其地表陶片密度。同理，如果一般性采集仅发现 5 到 9 个陶片，说明其地表陶片的分布更加稀疏，我们将 0.1/ 平方米作为其地表陶片密度。在这个计算标尺的最底端，如果采集单位发现少于 5 个陶片，其地表陶片密度被确定为 0.05/ 平方米。

一旦采集单位的地表陶片密度（陶片数量 / 平方米）被确定，将其乘以采集单位的总面积（公顷）。根据不同文化陶片所占的比例，我们将这个面积 - 密度指数分配到每一个文化。考虑到考古学文化延续时间越长就会产生越多的遗存，所以要将不同文化的面积 - 密度指数除以文化延续的世纪数。这个最终计算出的数值便是本报告中用于人口估算的参数。考虑到一些需要，这个人口估算参数被转换为实际居住人口的估算数字。转换计算以赤峰地区聚落研究中的方法为基础（Drennan 和 Peterson 2011）。赤峰地区的人口估算是将人口估算参数分别乘以 500 和 1000，得到最小和最大人口值。大凌河上游调查中的采集单位面积为 0.25 公顷，与赤峰调查中的 1 公顷相比分辨率大为提高，这给测量居住区域带来不可预期的影响，因此必须对 500 和 1000 这两个数字进行调整（参见 Drennan 和戴 2010: 459－461）。对于相同的居住区域，赤峰调查中的大采集单位会得出更大的测量面积，而大凌河上游调查中的小采集单位可以探测到居住遗迹之间的空隙，这恰恰是大采集单位无法发现的，所以小采集单位会得出较小的测量面积。对这两个调查区内居住区域的面积进行比较后发现，如果采用赤峰的方法，其测量面积将被放大 50% 左右。所以，以面积 - 密度这个单位来讲，大凌河上游人口参数所表征的人口数量将比赤峰地区多出大约 50%。正因为如此，在将大凌河上游人口参数转

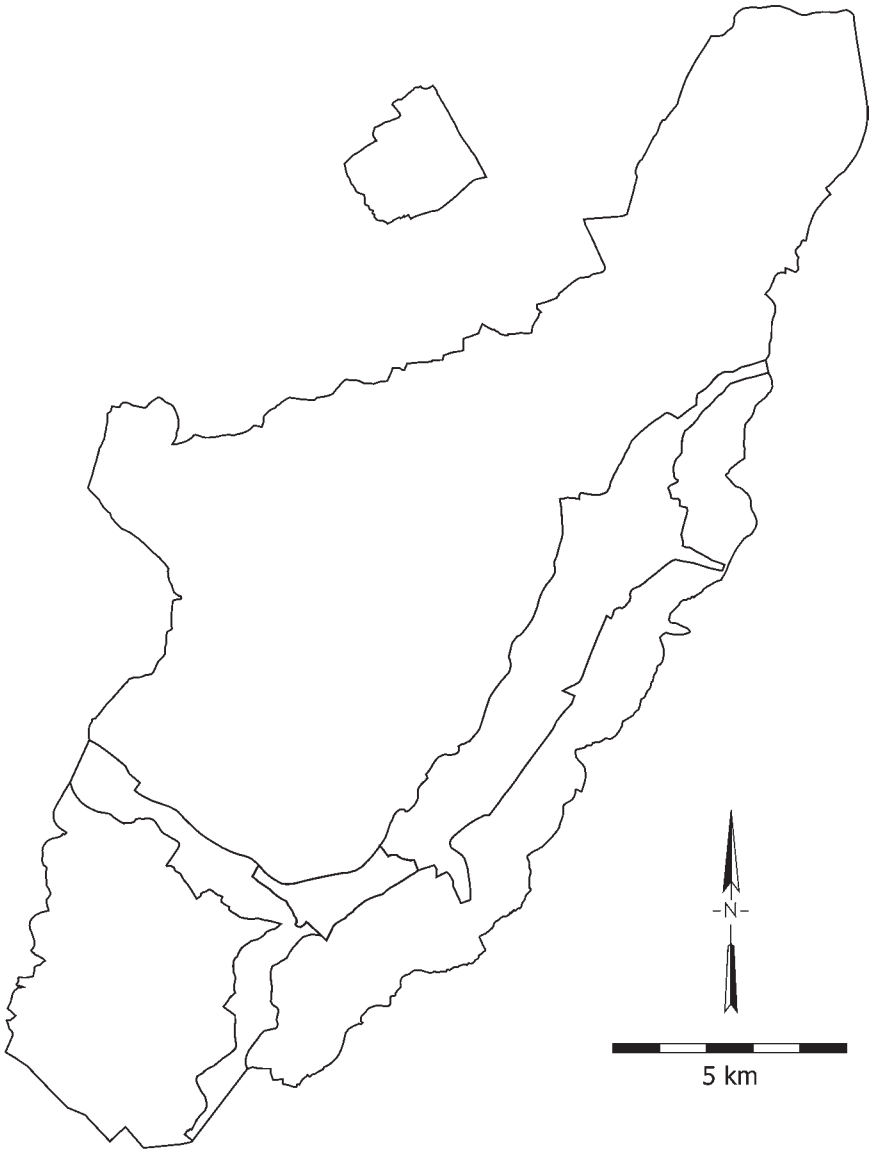


Figure 3.1. Upper Daling survey area. Extents of river floodplain shown in light gray; surveyed portion of river floodplain shown in dark gray.

图 3.1 大凌河上游调查区域（浅灰色表示河流冲积平原的范围，深灰色表示河流冲积平原中被调查的部分）

the Upper Daling survey zone (Fig. 3.2). The first area lay within about 250 m of the excavated ceremonial structures of the Dongshanzui site, and is referred to in discussion of these more detailed studies as the Dongshanzui area. The second was about 1 km to the southwest of the first, and is referred to as the Sanjia area. And the third was about 5 km northeast of the Dongshanzui site and is referred to as the Erbuchi area.

Several separate patches of land surface in these three areas were examined intensively by archaeologists walking systematically back and forth across them at 5 m intervals—a considerably closer and more detailed examination than collection units received in the regional-scale survey. A survey flag on a wire was inserted into the ground at the location of each sherd observed in the course of this inspection. This made it easy to stand back and observe the density of surface ceramics as it varied across each patch. Hot spots of higher density artifacts stood out clearly against a lower density background in this visual inspection. This technique had been employed before by Peterson (2006) at Fushanzhuang in the Chifeng region, where such artifact concentrations convincingly indicated individual household locations. Five separate patches of open farmland totaling 5 ha were flagged in this way in the Dongshanzui area (Fig. 3.3). In the Sanjia area, 8 ha of mixed open farmland and well-established orchards were also flagged as five separate patches (Fig. 3.4). And a single patch of 3 ha was flagged at Erbuchi in fallow fields with a moderate growth of weeds (Fig. 3.5). The boundaries of the areas where individual artifact locations were flagged are part of the GIS dataset available online (see Appendix).

Based on this higher-resolution view of the distribution of individual artifacts, still smaller-scale and more intensive study was carried out in each of the three areas. One approach taken in these more intensive studies was to rake or hoe the surface in grids of 5-by-5 m squares and screen the upper 5 cm or so of soil for recovery of large samples of artifacts with spatial control on a scale approaching that of an individual household area. The analysis of these artifact distributions and the reconstruction of the patterning of activities at this scale within local communities are still underway as of this writing and will be reported on in future publications. This work is not discussed further here, although some of the results discussed in this volume do draw on the artifact samples recovered in this way (for example, the ceramic chronology detailed in Chapter 2).

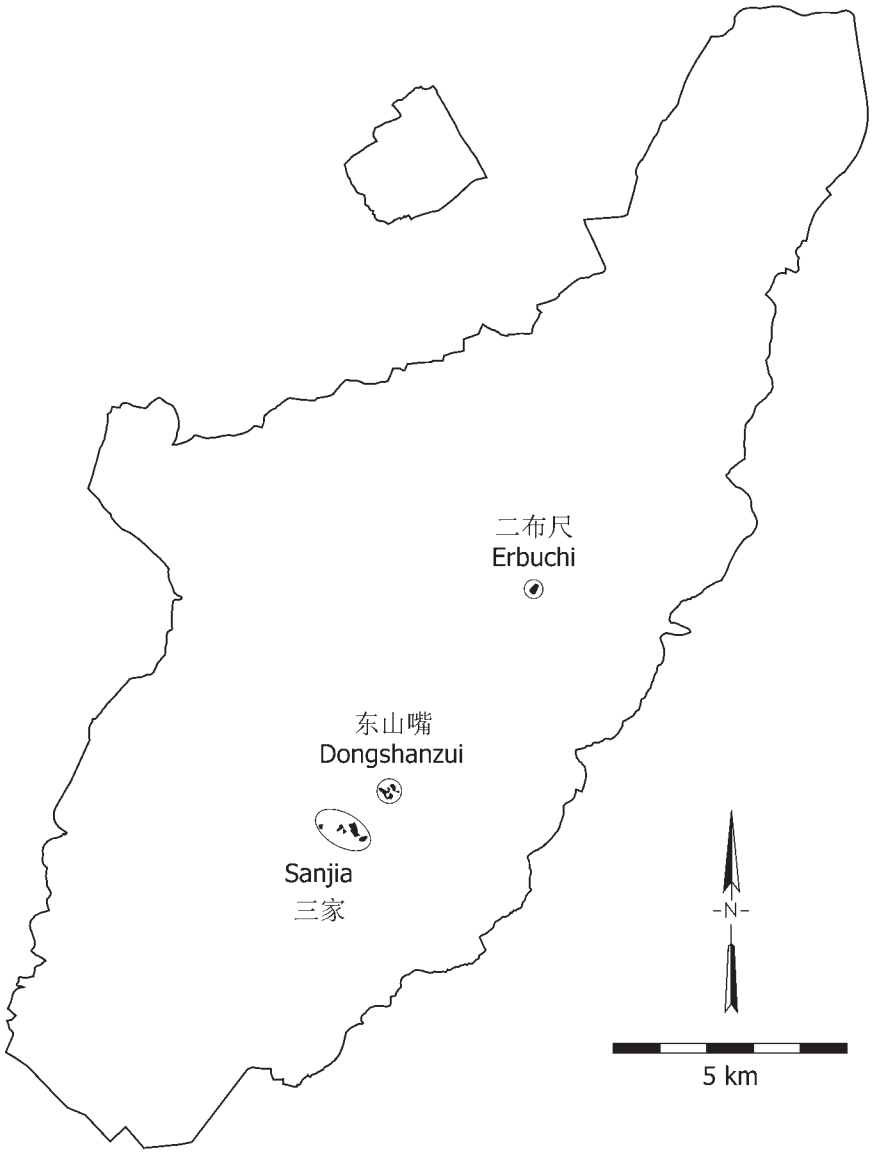


Figure 3.2. Locations of Dongshanzui, Sanjia, and Erbuchi areas within the Upper Daling survey region.

图 3.2 东山嘴、三家和二布尺地区在大凌河上游调查区域的位置

Magnetometer Survey and Stratigraphic Testing of Hongshan Occupation Areas

A magnetometer survey was also carried out in selected parts of the 16 ha of apparent residential zone where individual surface artifacts were flagged. A total of 12.7 ha was covered in this way, also divided between the three areas: 5.2 ha in the Dongshanzui area, 5.5 ha in the Sanjia area, and 2.0 ha in the Erbuchi area. More detail on the magnetometer survey and discussion of its results, including high-resolution images of the results, are available online (see Appendix). The magnetometer survey

化为绝对数字的时候，其转化系数比赤峰地区提高了50%，也就是说，人口参数将分别乘以750和1500，以获取最小和最大的估算人口值。

出于田野工作方便的需要，考古遗存常常被命名为遗址。在聚落分析中，这些遗址常常被认为与人类的社会单位，例如社区，存在一一对应的关系。为避免这种不可靠的臆想，大凌河上游聚落分析将采集单位，而不是遗址，作为基本的分析单位。构成社区的社会互动具备向心力，将地表分散的人群吸引到彼此更接近的距离，从而形成在空间上可识别的集群。在局部尺度上，我们习惯将这些集群称之为“村落”或其它称谓。从大凌河上游的聚落数据中，通过对采集单位的集群进行空间上的分析，我们能够界定出地方性社区。类似的道理，社会互动的向心力可以造就更大规模的社会单元（超地方性社区或行政区），在大凌河上游的聚落数据中也能够界定出这些单元。关于如何界定上述社会单元以及界定方法在其它文章（Peterson和Drennan 2005）中有非常详细的论述。大凌河上游的聚落分析方法与赤峰调查使用的完全相同（赤峰2011）。

红山文化遗物在更小尺度上的地表分布

在更小的尺度上理解考古遗存，是在区域尺度上阐释聚落模式的重要途径。正如我们在大凌河上游所做的那样，在通过地表踏查和采集得到的数据中，地表遗物的分布代表着这些遗物所属时期内人类活动的范围。考虑到陶片在古代垃圾中保存得最为丰富，以及在许多古代社会中大多数垃圾都产生于居住环境，因此陶片的地表分布大体上反映着古代人群的居住地点。当然，有的时候具备特殊特征的遗物组合指示出一些地点的形成是出于某些特殊目的，而非普通意义上的居住行为。对区域尺度数据的阐释是否有效，取决于对分布在每个地点上的考古遗存更详细的认知。

区域调查的田野工作一经完成，我们马上对若干处明显存在红山文化居住遗迹的区域进行了更加详细的调查，部分目的是为解释区域尺度上可识别的聚落模式提供良好的基础。这个更加细致的调查包括分阶段的一系列研究，并一步步集中到越来越小的区域。我们共计选择了约16公顷的地表遗物分布区域，主要是因为地表保留了不同密度的红山文化陶片，而其它时期的陶片数量非常少。这16公顷分属三个不同的区块（图3.2）。第一个区块位于东山嘴遗址已发掘的祭祀建筑周边250米的范围，在后面更详细的讨论中，我们将其称之为东山嘴地区。第二个区块位于东山嘴遗址西南方向约1公里处，我们称之为三家地区。第三个区块位于东山嘴遗址东北方向约5公里处，我们称之为二布尺地区。

在上述三个地区内，对若干个独立的小区块进行了密集性的系统调查，调查人员彼此之间保持5米的间距来回巡视，这比区域调查中在采集单位上使用的方法更加密集和细致。调查过程中，每发现一个陶片，就在陶片边上插入一面铁丝杆的小旗。这种做法有利于调查者观察地表上陶片密度的变化情况。在目测之下，陶片密度很高的地点在很低的密度背景下变得异常突出。这个方法曾被Peterson（2006）在赤峰地区的富山庄遗址使用过，在该遗址，遗物的集中分布状态可以令人信服地确定每一个房址的位置。利用这种插旗子的方法，在东山嘴地区调查了5片农田，总面积5公顷（图3.3）。在三家地区，调查了5片由农田和果园组成的地块，总面积8公顷（图3.4）。在二布尺地区，调查了一处约3公顷生长着杂草的休耕田地（图3.5）。插旗子的调查区域可以在网络上公布的GIS数据中获取（见附录）。

在对每一个遗物的分布进行更加精确观察的基础上，在这三个地区又进行了更小尺度以及更加集中的研究。采用的方法之一就是在5米×5米的网格内用耙子或锄头把深约5厘米的表土松动，然后用筛子筛选这些土壤，以获取相当于一个家庭的活动范围内的遗物样本。对遗物分布的分析以及在地方性社区的尺度上复原人类活动模式的工作目前仍在进行中，其结果将在后续的出版物中进行报道。虽然本书中对部分结果的讨论涉及到上述遗物样本，如本书第二章中关于陶片年代学的部分，但在此我们不对其进行更深入的讨论。

红山文化居住区域的磁力勘测和地层发掘

上述总面积16公顷的调查区块是红山文化居民的生活区域，我们还对其进行了磁力勘测，总面积达到12.7公顷，其中东山嘴地区5.2公顷，三家地区5.5公顷，二布尺地区2公顷。更多关于磁力勘测的信息以及对结果的讨论，包括勘测结果的高分辨率图片都已

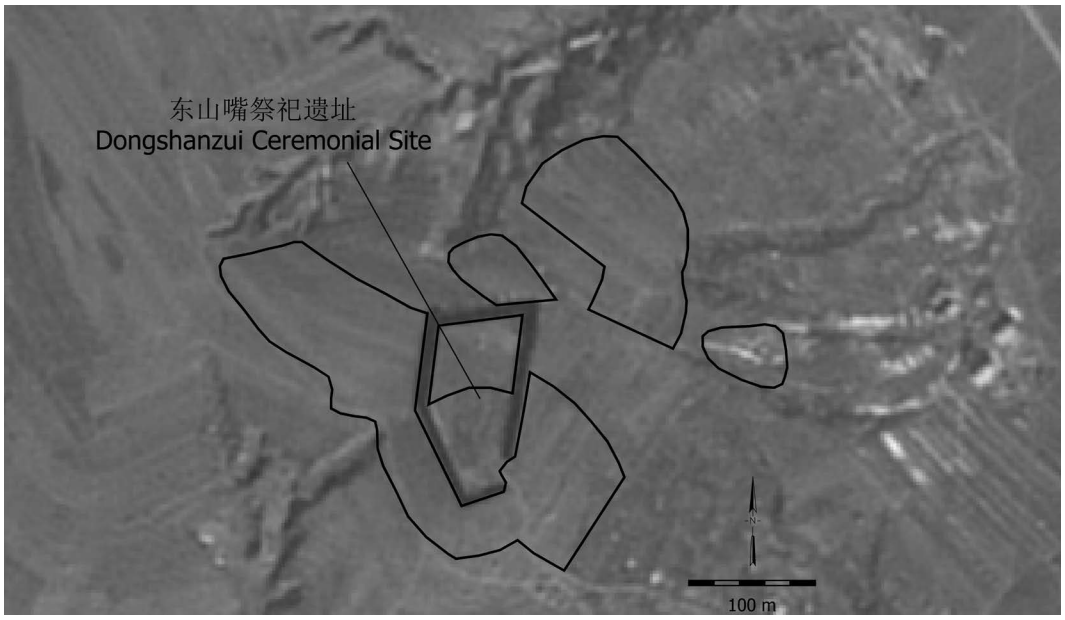


Figure 3.3. Limits of the 5 ha of occupied area within which surface sherds were flagged in the Dongshanzui area. Available online as part of the GIS dataset—see Appendix.

图 3.3 东山嘴地区用小旗子标示的地表陶片分布范围

（5 公顷，包含在网络上公布的 GIS 数据集中，参见附录）

was organized, as convenient based on topography, vegetation, etc., in grid squares 30 m on a side in several different sectors in each of the three areas.

Broadly speaking, the identification of anomalies of archaeological origin was greatly complicated by the highly varied magnetic properties of the bedrock stratigraphy underlying the relatively shallow cultural deposits in all three of the areas of work. It had been hoped that the deep deposits of aeolian material visible in erosion gullies represented the geological situation underlying the survey areas; however, the results clearly indicated the presence of bands of highly variable magnetic strata, seen to be tilted out of the horizontal. Where exposed, these strata were composed of bands of fine-grained to extremely coarse-grained conglomerates, and the magnetic properties of each stratum are determined by the inclusions present.

None of the images produced from the magnetometer readings yielded unambiguous plans of structural remains

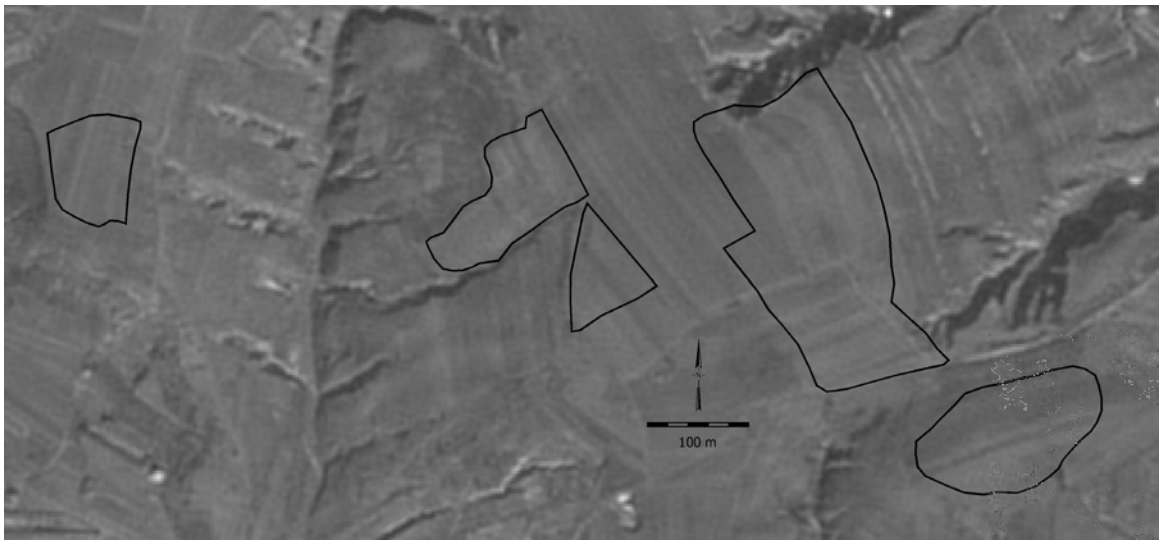


Figure 3.4. Limits of the 8 ha of occupied area within which surface sherds were flagged in the Sanjia area. Available online as part of the GIS dataset—see Appendix.

图 3.4 三家地区用小旗子标示的地表陶片分布范围

（8 公顷，包含在网络上公布的 GIS 数据集中，参见附录）

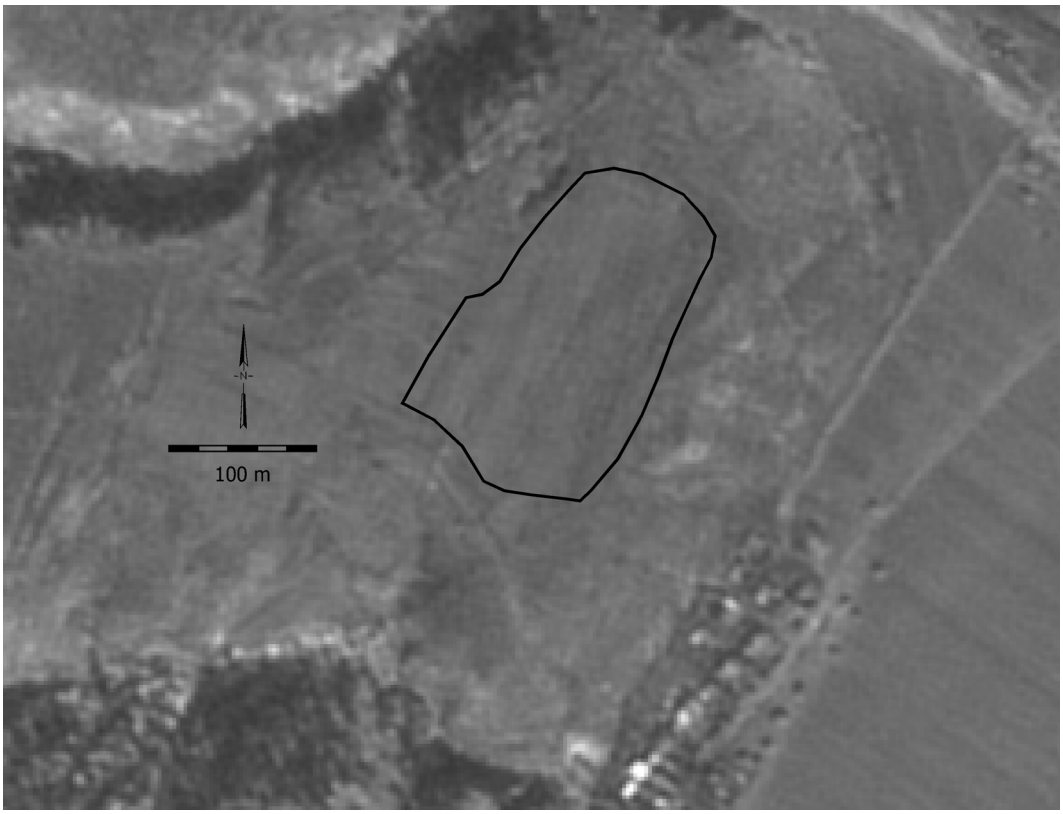


Figure 3.5. Limits of the 3 ha of occupied area within which surface sherds were flagged in the Erbuchi area. Available online as part of the GIS dataset—see Appendix.

图 3.5 二布尺地区用小旗子标示的地表陶片分布范围
(3 公顷，包含在网络上公布的 GIS 数据集中，参见附录)

经在网络上公布（参见附录）。磁力勘测的开展考虑了地形、植被等因素，在上述三个地区内分别勘测了几个边长 30 米的网格。

整体而言，判断考古遗迹磁力异常的过程相当复杂，这主要归因于三个地区相对浅薄的文化堆积之下的基岩具有非常多样的磁力特性。我们曾乐观地认为，侵蚀冲沟中暴露出的堆积很厚的风积物应该反映了调查区域的地质情况。然而，磁力勘测结果显示，存在着磁力非常多样的地层，磁力走向呈倾斜状态。暴露部分显示，这些地层由细腻至极粗的砾岩颗粒组成，每一层的磁力特性都取决于该层的内含物。

根据磁力勘测得到的图像不能清晰识别遗迹结构或相关遗迹的布局。每一张图像包含由地质因素和文化因素产生的磁力异常，这两者之间的区别并不总是能轻易地加以区分。在一些看上去很可能是由文化因素造成的磁力异常地点，进行了地层发掘工作，共布置 27 个 1 米 ×2 米的探方。发掘的结果在下面的总结表格中有详细描述，所有探方的地层剖面图以及确切位置都已经公布在网络上，一起公布的还有磁力异常区域的信息以及出土遗物的详尽解释（参见附录）。

在东山嘴地区，磁力勘测覆盖了四个独立的区块（图 3.6）。编号为 A001 的区块由 4 个 30 米 ×30 米的网格组成（共计 0.4 公顷），位于东山嘴遗址祭祀建筑已发掘区域的北边。事实上，这些网格与发掘区域有部分重叠。在磁力图像的南部，可观察到一些由正磁力异常（以黑线表示）形成的方块，这些方块是遗址主体部分以 5 米 ×5 米的探方进行发掘时遗留下来的隔梁。

A049 和 A051 覆盖的面积约为 1.4 公顷，地势较平坦，位于祭祀建筑所在山顶的下方不远处。磁力图像显示，从西南到东北方向出现了显著的正异常和负异常，应为自然因素所致。这种条带状的磁力结构是地层隆起和倾斜的结果，这些地层含有高度磁性化的砾岩。测量的磁力值超出 -5 nT 至 5 nT 这个范围，在一些地点甚至高达 ±40 nT，许多考古遗迹产生的磁力值就包含在这个范围内，因此，可能有意义的异常都被掩盖了。不过，我们仍然发现了一些不同于上述的异常，这些异常看上去很可能表征着文化遗迹。在这

or maps of associated features as can sometimes be produced by remote sensing. Each image contained a mixture of magnetic anomalies resulting from both geological and cultural factors, and the two were not always easily distinguished. A variety of different sorts of anomalies that appeared likely to be of cultural origin were explored through the excavation of 27 stratigraphic test pits, each 1 by 2 m. The outcome of this testing program is described in summary form below, and the stratigraphic profiles of all the tests and their exact locations are available online, along with a detail of the magnetic anomalies they explored, and a full account of the artifacts recovered (see Appendix).

In the Dongshanzui area, magnetometer survey covered four separate zones (Fig. 3.6). The magnetometry grid labeled Sector A001 consists of four 30-m squares (0.4 ha) immediately to the north of the excavated area of ceremonial structures at the Dongshanzui site. In fact it overlaps the excavated area, and the squares formed by positive magnetic anomalies (dark lines) visible in the southern part of the magnetometry image are the balks left between the 5-m squares of the excavation of the main platform.

Sector A049/A051 covers 1.4 ha of gentle slopes not far below the hill crest where the excavated ceremonial structures were located. The pronounced positive and negative responses trending southwest to northeast in the magnetometry image for these sectors are of natural origin. This pattern of striping is the product of uplifted and tilted geological strata, some of which contain highly magnetic conglomerates. They measured in excess of -5 to 5 nT, and as much as ±40 nT in places, which encompasses the range of values produced by many archaeological features and therefore obscures any subtler anomalies of interest. A number of other anomalies that did not match this pattern, however, seemed more likely to represent cultural features. Many of the discrete positive responses in this area are consistent with the types of response seen over pits and hearths, and seven stratigraphic tests were excavated to investigate them. All produced cultural material, in varying densities. Below the plow zone, nearly 100% of the sherds from these seven tests dated to Hongshan times. In three tests (tests XC, XE, and XF, see online data for details) there was no clear indication of any preserved cultural feature. In two other instances (tests XA and XB) there were depressions that probably represent shallow pit features of human origin. In only one of these two cases, however, did the configuration of the pit feature correspond well to the magnetic anomaly. The magnetic anomaly investigated by Test XD turned out to be a clearly defined pit feature filled with lenses of ash and many large pieces of ceramic vessels. Test XL was excavated to expose a larger amount of this feature and recover a larger sample of artifacts. Details of these two excavations are also available online, and the pit feature is discussed more fully below.

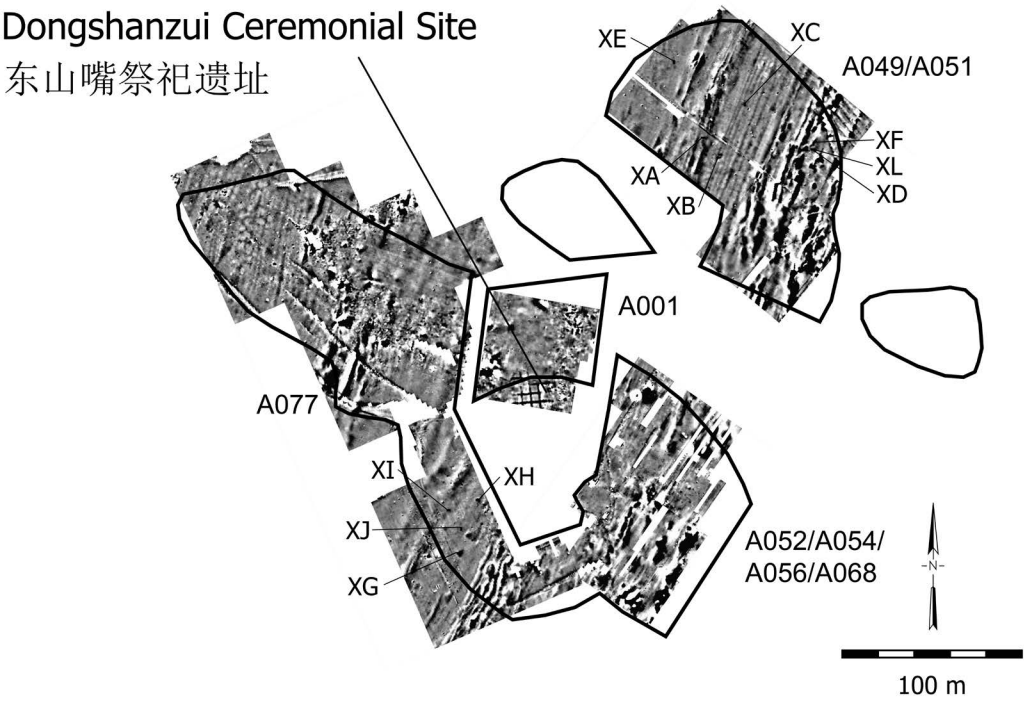


Figure 3.6. Magnetometry survey results and locations of stratigraphic tests in the Dongshanzui area. Details on stratigraphic tests, high-resolution magnetometry results, and all locational information available online—see Appendix.

图 3.6 东山嘴地区的磁力勘测结果和发掘位置

（关于发掘和高分辨率磁力勘测结果的细节以及其它方位信息可以从网络上获取，参见附录）

片区域内出现的许多不连续的正异常与灰坑和灶对应的磁力特征具有一致性，因此布置了 7 个探方进行发掘。结果表明，所有这些异常区包含着密度不等的文化遗物。在耕土层下，7 个探方出土的陶片几乎全部属于红山文化。其中的三个探方（探方 XC、XE 和 XF, 详细信息请查看网络上公布的数据库）没有发现任何遗迹。另外两个探方（探方 XA 和 XB) 发现了可能是人为因素形成的较浅的灰坑，其中一个探方发现的灰坑结构与磁力异常完全吻合。出现磁力异常的探方 XD 发现了清晰可辨的灰坑遗迹，其中填充着灰烬和许多大块的陶器碎片。探方 XL 继续揭露了这个灰坑的其它部分，并出土了更多的陶器残片。关于探方 XD 和 XL 的详细信息同样可以在网上获得，对该灰坑更详细的讨论将在本报告稍后的部分展开。

A052、A054、A056 和 A068 共覆盖约 1.0 公顷的面积，地势稍陡峭，正好坐落在东山嘴祭祀建筑的下方。磁力图像显示，从西南到东北方向出现了因基岩结构而产生的显著的正异常和负异常。有少数非连续性异常可能是文化因素造成的，但没有对它们进行进一步的深入调查。

A077 勘测面积为 2.4 公顷，地势平坦，位于东山嘴遗址的西南方向。最明显的磁力特征同样呈条带状分布，反映出基岩的构造。在磁力特征相对平缓的一处区域，我们在几个可能因文化因素产生的磁力异常点布置了四个探方（编号 XG、XH、XI 和 XJ)。在这四个探方的耕土层中以及之下少许的位置，发现了大量的红山文化陶片，较深的地层中同样发现了红山文化的陶片，但密度大大减少。没有发现任何清晰的文化遗迹，当然，不排除一些被解释为自然成因的磁力异常实际上是文化行为导致的。

在三家地区，磁力勘测包括了 5 个不同的区块（图 3.7)。A141 包含三个网格（面积 0.3 公顷），由于处在一片密集的杏树林中，所以存在勘测盲点。因基岩构造产生的磁力异常同样十分强烈，在两处可能有调查意义的磁力异常点布置了 2 个探方。在探方 XP 的耕土层中发现很多红山文化陶片，但耕土层以下的陶片密度迅速减少，没有发现任何文化遗迹。在探方 XQ 出现的磁力异常显示一个直径大约 9 米、由非连续性磁力响应组成的环形。经过发掘，这个环形正好对应一个高约 0.5 米、土石混筑的圆形积石冢的边缘部分。除少数辽代阶段的陶片外，从耕土层中获取的陶片几乎全部属于红山文化。在本报告稍后的部分，我们将对这个圆形积石冢进行更详细的讨论。

A131 和 A133 的面积为 1.9 公顷，向北逐渐抬升形成缓坡，顶部是更加平坦的一片区域。与其它勘测区块相比，这里（至少一部分）的基岩干扰效应减弱许多，一些可能是人为因素造成的磁力异常因此被识别。探方 XR 出土了几个不同时期的陶片，但只有红山文化的陶片位于地层的最底部，没有发现任何清晰的文化遗迹。探方 XS 内发现了一个小的、但很强烈的磁力异常。经过发掘，确认这是一个一直深入到基岩的灰坑。尽管在灰坑的填土中有很多红山文化的陶片，但显然是二次堆积的结果，因为测年数据显示灰坑的年代属于夏家店上层文化。这个灰坑就是本书第二章中提到的三个碳十四测年数据的考古来源（关于它们的详细背景信息请参考在线数据库，见附录)。探方 XT 揭露了一个红山文化的灰坑。在整个勘测区内，可能与文化行为有关的磁力异常与遗物在地表的分布特征十分吻合。调查区域南部（三个探方周边）的磁力异常更加明显和密集，这也正好是地表遗物分布密度最高的区域。通过观察在地表插入的调查旗子，可以看出在调查区域北部，地表遗物的分布密度要低得多。有这种对应关系可能并不是偶然的，我们更有信心地认为，丰富的地表遗物是人类密集活动的结果。

A127 覆盖的面积为 0.5 公顷。在局部区域，分布着小规模磁力噪音，表现为不连续的两极反应，不过在勘测区域的东部，磁力干扰现象明显减弱。磁力噪音的形成很可能是地质因素，由基岩蚀化形成的岩石携带天然磁性，引发了两极化的磁性异常。在探方 XV 中，发现了非常浅的文化堆积，没有任何迹象显示堆积中存在导致磁性异常的物质。探方 XU 中有一个小型的红山文化的灰坑，一直深入到基岩。

A116、A117 和 A118 的面积大约 1.2 公顷。在勘测区域的东北方向，由基岩中磁性介质产生的干扰非常强烈，但这种现象在西南方向减弱许多。在可能是文化因素导致的磁性异常点处布置了 2 个探方 (XW 和 XX), 均位于基岩信号干扰最为强烈的边缘。在每个探方中都有一个保存较差的红山文化灰坑，堆积都比较浅，出土的陶片数量也少。在勘测区域的西南方向，沿着一条阶梯状斜坡，扩大了勘测范围。在磁力图像中，阶梯状斜坡的边缘清楚可见，表现为平行的正、负线条，彼此间距约 6 米左右。虽然这里基岩磁性的干扰相对清晰，但是也只发现很少的由文化因素导致的磁性异常。与前面提到的情况相似，低密度的磁性异常暗示着低密度的古代人类活动，这与地表相

Sector A052/A054/A056/A068 is about 1.0 ha on slightly steeper slopes immediately below the Dongshanzui ceremonial structures. The strongly marked positive and negative bands trending from southwest to northeast are a product of the conglomerate bedrock structure. A few discrete anomalies not matching this pattern might be cultural, but they were not further investigated.

Sector A077 is an extensive area (2.4 ha) of gentle slopes immediately southwest of the hill crest with ceremonial structures. The most conspicuous magnetic features are again the lines reflecting bedrock structure. In an area relatively quiet of this interference, several anomalies of possible cultural origin were investigated with four test pits (XG, XH, XI, and XJ). In all cases Hongshan sherds were dense within and just below the plow zone, and continued into lower deposits, but at rapidly diminishing densities. No clear cultural features were encountered, although it is possible that some of the magnetic anomalies interpreted as being due to geological features in fact represent cultural activity.

In the Sanjia area, magnetometry survey covered five separate zones (Fig. 3.7). Sector A141 consisted of only three grid squares (0.3 ha) and coverage was somewhat patchy because it was located in a densely planted apricot orchard. Again, interference from bedrock patterns was strong, but two promising anomalies were investigated with test pits. In Test XP high densities of Hongshan sherds tapered off rapidly below the plow zone, and no clear cultural feature was encountered. The anomaly investigated by Test XQ comprised a ring of discrete magnetic responses some 9 m in diameter, which turned out to be the edge of a circular platform about 0.5 m high faced with clay and stones. All the ceramics recovered were Hongshan except for a few Liao sherds near the surface in the plow zone. This platform is discussed in more detail below.

Sector A131/A133 covered 1.9 ha running northward up a gentle slope onto more level ground above. Through at least part of this zone, bedrock interference was much less intense than that encountered elsewhere, allowing numerous magnetic anomalies of probable anthropogenic origin to be identified. Test XR yielded sherds of several time periods, although only Hongshan sherds were in the lowest layers. No clear cultural feature was discerned. The small but intense magnetic anomaly Test XS was positioned to investigate turned out to be a pit feature excavated into bedrock. Although Hongshan sherds were present throughout the deposits, they were evidently redeposited, as the pit feature in the bottom of the test was clearly of Upper Xiajiadian date. It was the source of three radiocarbon dates discussed in Chapter 2 (details of these contexts are provided online, see Appendix). Test XT also encountered a clear pit feature, this one of Hongshan date. The broad distribution of magnetic anomalies of possible cultural origin in this extensive zone corresponds quite well to the broad distribution of surface artifacts as well. Magnetic anomalies are considerably more numerous in the southern part of the zone (in the general vicinity of the three stratigraphic tests), and this is precisely the part of the zone where surface artifacts reached their highest densities. Toward the north the density of surface artifacts, as made visible by placing a survey flag next to each visible sherd, was substantially lower. This correspondence is, perhaps, not surprising, but it does enhance our confidence in interpreting higher densities of surface artifacts as an indication of more intensive past human utilization of a locality.

Sector A127 covered about 0.5 ha. A spread of small scale magnetic noise, visible as discrete bipolar responses, appears across part of this zone, but this interference quiets down toward the east. The cause of this noise is most likely geological, with the bipolar anomalies produced by naturally magnetic rocks eroding from the bedrock. One

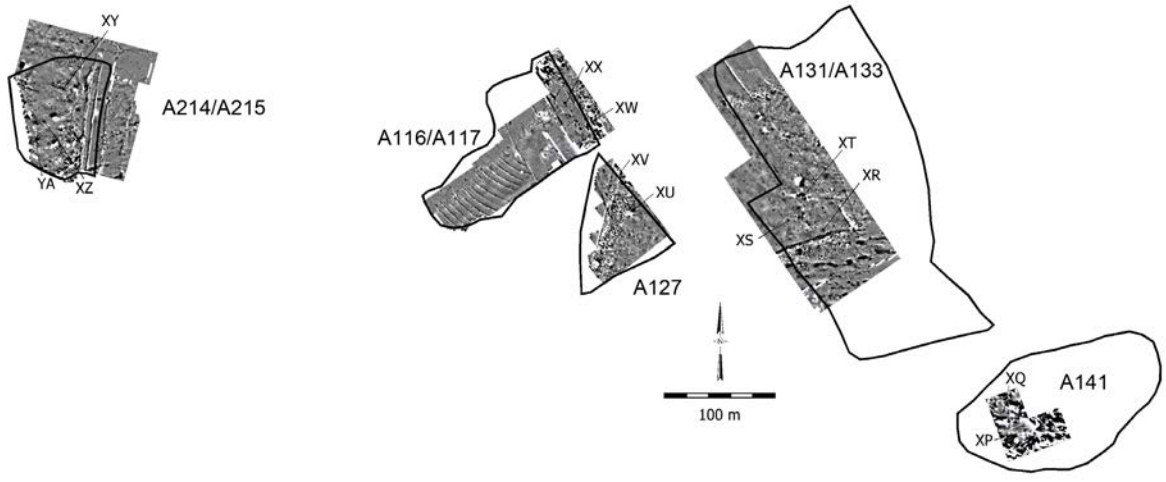


Figure 3.7. Magnetometry survey results and locations of stratigraphic tests in the Sanjia area. Details on stratigraphic tests, high-resolution magnetometry results, and all locational information available online—see Appendix.

图 3.7 三家地区的磁力勘测结果和发掘位置

（关于发掘和高分辨率磁力勘测结果的细节以及其它方位信息可以从网络上获取，参见附录）

当低的遗物密度十分吻合。

A214 和 A215 的面积为 1.4 公顷，地表遗物密度较高。尽管风化基岩产生的磁力干扰更为强烈，但还是发现了更多可能是文化因素引起的磁力异常。发掘了探方 XY、XZ 和 YA 来验证这些磁力异常。在 YA 中，发现一个红山文化的灰坑，深入到基岩。在 XY 和 XZ 中，没有发现清晰的、与磁力异常相对应的遗迹，但都包含红山文化遗物。在 XY 中，堆积非常浅薄。相比之下，XZ 中的堆积更深，很像垃圾堆。

就在我们对二布尺地区进行磁力勘测之前，这里的地表刚刚经历过巨大的改变，布满了大约 3 米 ×3 米的方形土坑，彼此间被土垄隔开。开挖这些土坑的目的是为种植在坑中央的果树保持水分。在磁力图像上（图 3.8），那些将土坑分隔开的土垄清晰可见，表现为由黑色线条构成的网格。进行磁力勘测的三个区域对应三个阶梯状的平缓斜坡，它们位于濒临大凌河泛滥平原的断崖顶部。又一次出现了许多地质因素形成的强烈磁力干扰，不过这一次表现为不连续的磁力异常。基岩的磁力干扰主要限于几条间隔较远的线上，在其间的磁力反应平缓区域，能够看到因文化因素而导致的磁力异常。

B285-M1 在三个阶梯状斜坡中位置最低，面积为 0.6 公顷。在探方 XK 和 XM 中发现了保存完好的灰坑，一直深入到基岩，其中的遗物大部分为红山文化的陶片，但也包括数量稍少一些的小河沿文化的陶片。关于这两个探方中灰坑的详细信息已经在网络上公布（参见附录），我们在本报告稍后的部分将作进一步的讨论。B285-M2 处于中间位置，面积为 0.8 公顷。在探方 XN 中，发现基岩中有一个凹陷，里面出土红山文化的陶片。这可能是人类活动的结果，但由于保存不够完好，我们并不能确切地证实它是文化遗迹。B285-M3 位置最高，面积为 0.6 公顷。探方 XO 中有一个磁力异常点，经发掘确认是基岩的自然结构。不过，这个探方中出土红山文化以及少量小河沿文化的陶片。

通过对二布尺地区三处地点磁力勘测的观察，我们发现了一个具有启示意义的普遍模式。磁力图像中那些清楚可见、呈线性分布的正响应对应着分隔果树坑的土垄，这个现象在 B285-M2 中部和北部的大部分区域更加强烈。这暗示着该地区表层土和下层土在磁性上的差异更加显著，有可能是人类定居导致局部地区磁性增强的结果。在二布尺地区，大多数的文化遗物出于最上面 20 厘米的堆积层位中，这应该是受人类活动影响最大的土壤，正是这些土壤被挖掉并堆积成果树坑之间的土埂。这样看来，B285-M2 中部和北部的最上层土壤应该就是人类活动最为强烈的暗示，也

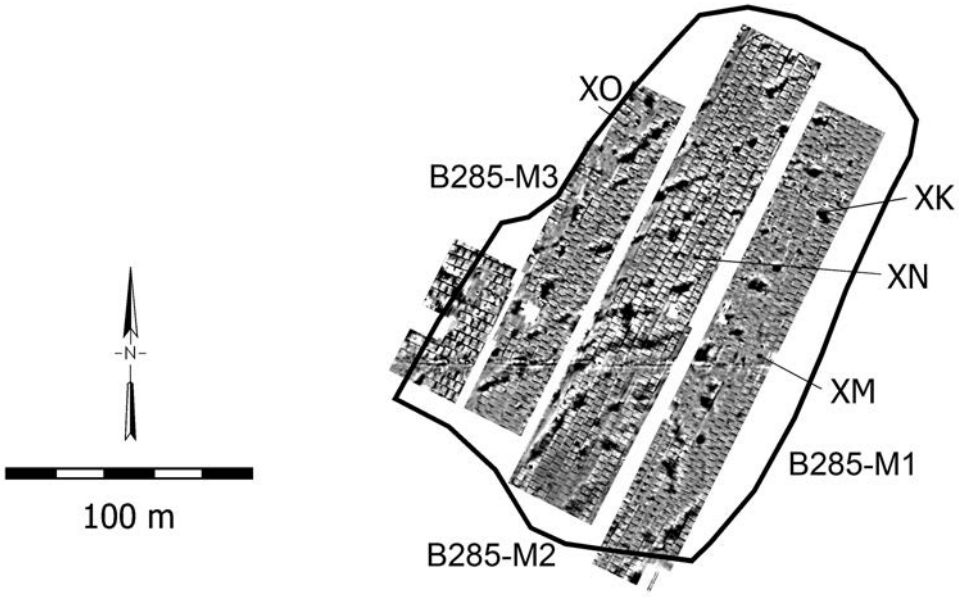


Figure 3.8. Magnetometry survey results and locations of stratigraphic tests in the Erbuchi area. Details on stratigraphic tests, high-resolution magnetometry results, and all locational information available online—see Appendix.

图 3.8 二布尺地区的磁力勘测结果和发掘位置

(关于发掘和高分辨率磁力勘测结果的细节以及其它方位信息可以从网络上获取，参见附录)

test (XV) revealed very shallow cultural deposits and no clear sign of the source of the magnetic anomaly. Test XU contained a small Hongshan-period pit feature excavated into bedrock.

Sector A116/A117/A118 spanned some 1.2 ha. Interference from magnetic properties of the bedrock was intense at the northeast, but much less so toward the southwest. Two tests (XW and XX) investigated magnetic anomalies of possible cultural origin, both along the edge of the most intense interference from the bedrock signal. A clear, if relatively poorly preserved, pit feature dug into the bedrock in Hongshan times was present in each of these tests. Deposits were shallow and sherd densities relatively low. The zone of magnetometry survey extended southwest down a terraced slope. Terrace edges are visible in the magnetometer image in the form of parallel positive and negative lines, roughly 6 m apart. Despite the fact that this area was relatively clear of bedrock interference, very few anomalies of possible cultural origin were visible. Once again, this very low density of magnetic indications of past human activity corresponded well to considerably lower densities of surface artifacts.

Sector A214/A215 (1.4 ha) was again in a zone of higher surface artifact densities, and, despite greater interference from probable weathered bedrock, more magnetic anomalies of possible cultural origin were noted. Tests XY, XZ, and YA were excavated to investigate three of them. A Hongshan-period pit feature in bedrock was revealed in Test YA. No clear-cut patterns corresponding to magnetic anomalies were identified in either XY or XZ, but both encountered cultural deposits from Hongshan times—very shallow and sparse in the case of XY, deeper and more midden-like in the case of XZ.

Shortly before the magnetometry survey was carried out in the Erbuchi area, the surface of much of the zone had been radically modified by the creation of square pits about 3 m on a side separated by earth embankments. The aim of these pits was the retention of moisture for the fruit trees that had been planted in a hole dug in the center of each pit. The earthen berms that separate the pits are clearly visible as a grid of black lines in the magnetometry images (Fig. 3.8). The three zones of magnetometer survey correspond to three broad terraces on the gently sloping land above a bluff dropping sharply down to the floodplain of the Daling River. Numerous intense geological effects are again visible, this time as trends of disjointed anomalies. This bedrock interference was largely limited to several widely spaced lines with somewhat clearer patches in between where anomalies of possible cultural origin could be seen.

Sector B285-M1 covered the lowest of the three broad terraces (0.6 ha). Two stratigraphic tests (XK and XM) encountered well preserved pit features dug into bedrock and containing mostly Hongshan sherds combined with smaller numbers classified as Xiaoheyan. Detailed information about both these pits is available online (see Appendix), and both will be discussed further below. On the next terrace up, Sector B285-M2 covered 0.8 ha. The one test (XN) excavated in this sector encountered a depression in the bedrock with Hongshan sherds in its fill. This could be a product of human activity, but it was not preserved well enough to identify unequivocally as a cultural feature. On the highest of the three terraces, Sector B285-M3 covered 0.6 ha. Test XO was excavated to investigate a magnetic anomaly which turned out to be a natural configuration of rocks embedded in the conglomerate bedrock. Hongshan sherds, however, were present, along with a smaller number of Xiaoheyan sherds.

It is enlightening to observe a general pattern shown in these three sectors of magnetometry survey at Erbuchi. The well defined, positive linear responses in the magnetometry images that correspond to the earthen berms separating the square tree-planting pits are notably more intense across a large area in the central and northern part of Sector B285-M2. This indicates an increased magnetic contrast between the topsoil and subsoils in this area and could be due to localized magnetic enhancement associated with human occupation. In the Erbuchi area, most of the cultural materials recovered were in the upper 20 cm of deposits, so these would appear to be the soils most affected by human activities. It was precisely these soils that were dug away and piled into the berms between tree-planting pits. The uppermost soils in the central and northern part of Sector B285-M2, then, seem those most strongly indicative of human activities, and this is precisely the area where surface sherds reached their highest densities. In a different way, then, than was the case in the Sanjia area, the indications from the magnetometry survey that point to especially intensive human utilization of a particular part of the locality agree well with the pattern of varying surface sherd densities.

Excavated Hongshan Residential Remains

Only a handful of Hongshan settlements have been excavated, none in the Upper Daling survey region. Reported examples include Hongshanhou, Zhizhushan, Xishuiquan, Weijiawopu, Xinglonggou, Baiyinchanghan, Xitai, Nantaizi, and Erdaoliang (Duan, Cheng, and Cao 2011; Hamada and Mizuno 1938; Neimenggu 1994a, 1994b, 1997, 2004; Yang and Lin 2010; Zhongguo 2004; Zhongguo 1979, 1982). Of these, the only one to have been excavated in its entirety is Baiyinchanghan in Lixi County, eastern Inner Mongolia, some 280 km to the northwest of the Upper Daling survey area (Fig. 3.9). The Hongshan occupation here includes 17 semi-subterranean dwellings spread from 5 to 50 m apart across 4.5 ha. The houses group into two residential clusters of roughly similar size (Neimenggu 2004). Interspersed among the houses were storage pits (later reused for trash disposal), rectangular pit burials, and other features. Hongshan houses at Baiyinchanghan are square in plan, but a few circular ones are reported for other sites. Timber-frame superstructures supported wattle-and-daub walls and thatched roofs. Central hearths were dug into hard-packed earthen floors that range in size at Baiyin-

恰恰是在这一区域，地表陶片的密度最高。与在三家地区看到的情况不同，磁力勘测的结果暗示古人特别集中地利用了二布尺某个特定的地方，而这与地表陶片密度的变化模式相吻合。

红山文化居住遗迹的发掘

到目前为止，仅有少数红山文化的聚落被发掘过，并且没有一个分布在大凌河上游的调查区域内。已报道的红山文化聚落包括红山后、蜘蛛山、西水泉、魏家窝铺、兴隆沟、白音长汗、西台、南台子和二道梁（段、程和曹 2011; Hamada 和 Mizuno 1938; 内蒙古 1994a, 1994b, 1997, 2004; 杨和林 2010; 中国 2004; 中国 1979, 1982)。上述聚落中，唯一被全面发掘的是内蒙古东部林西县的白音长汗遗址，该遗址位于大凌河上游调查区西北方向约 280 公里处（图 3.9)。白音长汗遗址发现的红山文化居住遗迹包括 17 座半地穴式房址，彼此间距 5 米至 50 米，分布在 4.5 公顷的土地上。房址可以划分为两个大小相当的居住群（内蒙古 2004)。在房址之间分布着窖穴（后来作为垃圾坑使用）、长方形的墓葬以及其它遗迹。白音长汗的红山文化房址平面为方形，但在其它红山文化遗址也发现了平面为圆形的房址。木构框架支撑着木骨泥墙和茅草屋顶。房址内有坚硬结实的地面，中心灶直接挖在地面上，房址面积从大约 10 平方米到超过 50 平方米不等，在西水泉遗址发现了面积超过 100 平方米的红山文化房址。在四棱山遗址，发现 6 座陶窑，曾被断定为红山文化时期，但更可能属于小河沿文化（辽宁等 1977)。在红山文化遗址中，没有发现作坊或其它生产设施。通过对红山文化聚落进行发掘得到的人工制品和生态材料表明，红山文化的居民从事着多样化的经济行为：种植粟及其它谷物、采集坚果及其它植物、饲养家猪和绵羊、狩猎鹿及其它动物、纺织和加工皮革、制作贝壳饰品、生产陶器和石器。在至少两个红山文化聚落（西台和兴隆沟）发现了环形壕沟。

灰坑通常被认为用于食物及其它物品的储藏，在红山文化的居住区内，灰坑是非常普遍的。它们的形状和大小十分多样，前面所述大凌河上游调查区内发掘的灰坑也如此。虽然东山嘴、三家和二布尺地区发现的灰坑保存状况普遍很差，但仍有几个较为完整，可以与其它经过全面发掘的红山文化聚落中的灰坑进行比较。

在东山嘴地区 A049 和 A051 磁力勘测区的探方 XD 和 XL 内发现一个保存非常完好、近似圆形的灰坑，直径约为 1.2 米或更大（图 3.10)，深至少 0.6 米。灰坑的底部和文化堆积之下是坚硬的黄色生土。考虑到耕土层的存在，有可能灰坑上面的一部分及其表面已经被破坏。在坑壁上发现了一些石头，但这些石头并没有形成一个完整的石头内表面。灰坑内的填土中出土大量的陶片，全部为红山文化时期，许多陶片可以拼合成器物的局部。陶片和灰烬混合在灰褐色填土里，这与灰坑最初用于储藏后来用于掩埋和焚烧垃圾的过程相一致。因为在堆积的不同层位发现了可以复原到同一件器物的陶片，看起来当时填充这个灰坑的过程发生的相当迅速。从那些灰烬中，我们采集了浮选样本，但几乎没有发现什么可鉴定出种属的植物。仅有两颗植物种子被鉴别出来，分别来自藜属和蔷薇科植物。从灰坑内不同深度的填土中，我们采集了四个用于碳十四测年的样本，测年的结果十分相似，均在公元前 4500 年或稍早，即通常认为的红山文

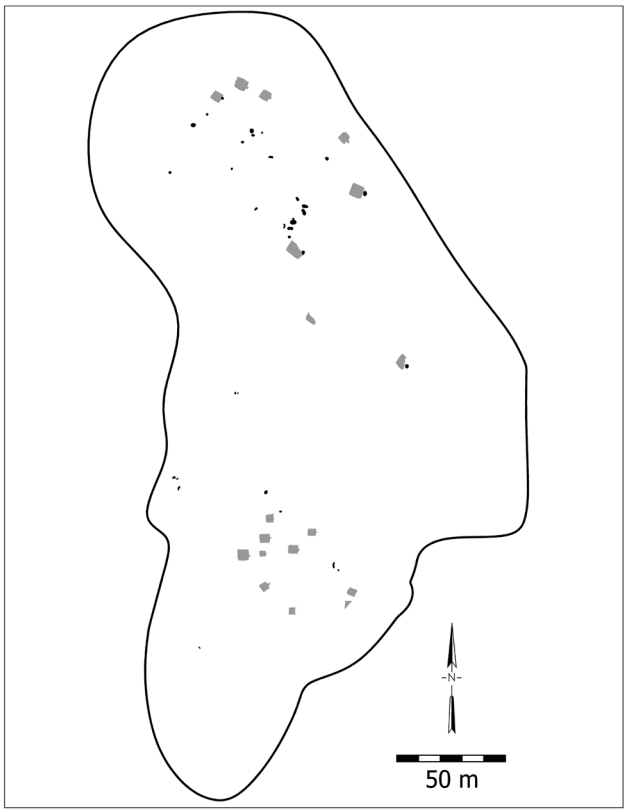


Figure 3.9. Excavated habitation zone at Baiyinchanghan. Hongshan houses are indicated in gray; Hongshan pits, graves, and other features are indicated in black.

图 3.9 白音长汗遗址发掘的红山文化居住区域
（灰色表示房屋，黑色表示灰坑、墓葬以及其它遗迹）

changhan from about 10 m^2 to more than 50 m^2, and up to 100 m^2 at the site of Xishuiquan. Six kilns were excavated at Silengshan, better known as Xiaoheyan (Liaoning et al. 1977), but no workshops or other productive facilities have been reported at this or any other Hongshan settlement. The artifacts and ecofacts recovered through excavation of Hongshan settlements reveal that a variety of economic activities were practiced by their inhabitants: dryland millet and other cereal-based agriculture; nut and other plant gathering; pig and sheep husbandry; hunting of deer and other species; spinning, weaving, leather-working; shell ornament manufacture; pottery and stone tool production. At least two Hongshan period settlements (Xitai and Xinglonggou) were encircled by ditches.

Pit features, generally taken to have been created for storage of foodstuffs and perhaps other kinds of goods, are extremely common in excavated Hongshan residential areas. These occur in a variety of forms and sizes, as do the pits dug into bedrock that were the most common features encountered in the stratigraphic tests described above for the Upper Daling survey zone. While a number of the pit features from the Dongshanzui, Sanjia, and Erbuchi areas were poorly preserved, several were intact enough to merit description in conjunction with the remains documented for more fully excavated Hongshan settlements.

Tests XD and XL in Sector A049/A051 in the Dongshanzui area contained a very well-preserved roughly circular pit feature about 1.2 m or more in diameter (Fig. 3.10). It was at least 0.6 m deep. The bottom of the pit was excavated into the hard yellow sterile clay that underlay the cultural deposits in this location. Since it ended at the plow zone at the top it is possible that some of its upper portion had been destroyed, along with the surface from which it was originally excavated. Several stones were found at the walls of the pit, although those remaining did not form a complete stone lining of it. The pit fill contained a high density of large sherds (all Hongshan), many of which were refittable into portions of vessels. They were embedded in gray-brown soil interspersed with several ashy lenses, consistent with use of the pit for disposal and burning of trash after an initial function for storage. Since sherds that fit together from the same vessel were encountered in different layers of fill, it seems that the process of filling in the pit occurred quickly. Flotation samples were collected from these ashy lenses, but very little identifiable botanical material was recovered from them—just two identifiable seeds, one *Chenopodium* sp. and one Rosaceae. Four samples collected for radiocarbon dating from different depths within the pit fill yielded very similar dates just at or before the traditionally cited beginning date of 4500 BCE for the Hongshan period (details online, see Appendix).

Test XM in Sector B285-M1 at Erbuchi also uncovered a reasonably well-preserved pit feature (Fig. 3.11). This one seems to have had a wider upper part, some 1.2 m in diameter, that was 30–40 cm deep, and a lower part around 0.7 m in diameter extending about 0.3 m deeper. A number of flat rocks lined its sides. Its fill consisted of brown loess containing small stones, which were more numerous toward the bottom of the pit. The pit fill contained 25 Hongshan and 3 Xiaoheyan sherds, an artifact density less than that of the layers overlying the pit feature.

Test XK in Sector B285-M1 at Erbuchi exposed an especially large and elaborate pit feature (Fig. 3.12). It was only partially exposed in the stratigraphic test, but its mouth had a diameter perhaps 3 m or more across based on observation of the portion exposed in the stratigraphic test and the dimensions of the magnetic anomaly the feature produced. There was a lip or step some 20 cm deep around the upper edge of the pit, at least at its west edge. From this step, the pit went down an additional 1.5 m into the soft decomposing bedrock that underlay cultural deposits here. The walls of the pit tapered in slightly as the pit went downward, and they were carefully lined with several layers of stones set in hard reddish-brown soil. Several especially large stones formed a bottom. The pit fill consisted of four visually distinct layers of loess, together containing 26 Hongshan and 7 Xiaoheyan sherds. Both Hongshan and Xiaoheyan sherds occurred from the uppermost to the lowermost parts of the fill. Two sherds recovered from the soil between the stones lining the walls of the pit were Hongshan. Two samples for radiocarbon dating recovered from the uppermost portion of the pit fill were much too recent for the Hongshan period. A third sample, from far down in the pit fill is closer to expectations, although, with a calibrated 2-sigma range of 2900–2830 BCE (30% probability) and 2820–2670 BCE (68% probability), it falls after the traditional ending date for the Hongshan period and in the millennium customarily assigned to Xiaoheyan. Further details of the contexts

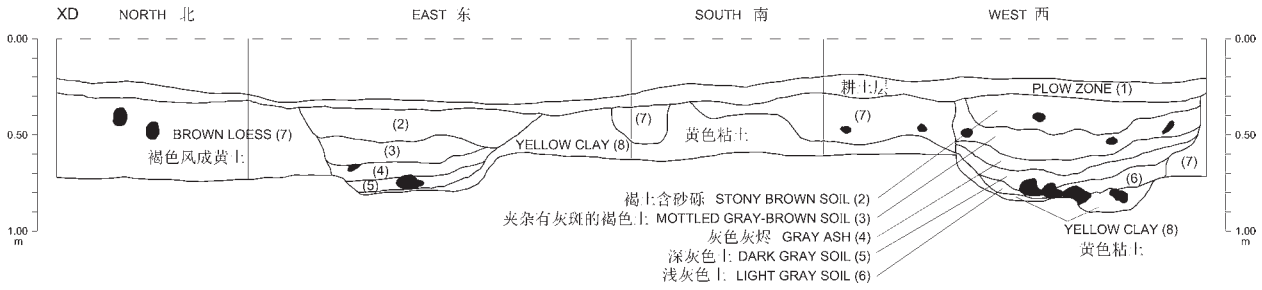


Figure 3.10. Profile of pit feature in Tests XD/XL.

图 3.10 探方 XD/XL 灰坑剖面图

化的起始时间（更多细节请参考网上发布的数据，见附录）。

在二布尺地区 B285-M1 探方 XM 中，发现了一个保存相当完好的灰坑（图 3.11）。该灰坑上部较宽，直径约为 1.2 米，深 30 至 40 厘米。下部变窄，直径约为 0.7 米，深 0.3 米。一些扁平的石头衬在坑壁上。灰坑的堆积由包含小石块的褐色黄土组成，越接近灰坑底部，小石块越多。灰坑内出土 25 个红山文化的陶片和 3 个小河沿文化的陶片，这个密度要低于灰坑之上地层中的陶片密度。

在二布尺地区 B285-M1 探方 XK 中，发现了一个非常大型、建造精巧的灰坑（图 3.12）。这个灰坑仅被部分发掘，但从已揭露的部分以及此处磁力异常的范围判断，其开口直径达 3 米甚至更大。在灰坑的口部，至少是西侧，有一个台阶，深约 20 厘米。由这个台阶往下，灰坑深达 1.5 米，直达松软的基岩。坑壁自上而下逐渐向内收缩，坑壁上精心铺着几层石头，并用坚硬的红褐色土壤填充、固定。灰坑的底部铺着几个特别大的石头。灰坑内的堆积分为四层差别显著的黄土，共计出土 26 个红山文化的陶片和 7 个小河沿文化的陶片，这两个文化的陶片从灰坑填土的最上层到最下层一直共出。在灰坑内壁石块缝隙的填充土中，发现了 2 个红山文化的陶片。在灰坑最上层填土中，采集到两个碳十四测年的样本，但测年结果很晚，与红山文化相去甚远。在灰坑最下层填土中采集到的一个样本的测年结果与我们的预期更加接近，年代范围为公元前 2900－2830 年（2 σ，30% 置信度）或公元前 2820－2670 年（2 σ，60% 置信度）。这个年代落在通常被认为是红山文化结束时间点之后，与习惯上定义的小河沿文化同属一个千纪。关于这些碳十四测年样本考古背景的更加详细的信息已经在网络上公布（参见附录）。由于规模相对较小，这个遗迹看上去不太可能是房屋建筑，更可能是一个用于储藏的窖穴。那些精心布置的石头和泥土衬里可以用来保护一些易于腐败的东西，例如谷物。在灰坑开口的台阶处，可能有过一个由木框架支撑，用木头、稻草或红烧土搭建的顶部结构，当然这一推断没有明确的考古学证据支持。

根据以往的发掘情况来看，灰坑是与红山文化房址最常见的共存遗迹。大多数情况下，这些灰坑分布在房屋之外，但偶尔也会出现在房屋内部的地面上。从大小、形状、建造技术以及包含物看，东山嘴与二布尺地区探方 XD/XL 和 XM 揭露的保存完好的灰坑与白音长汗、南台子、魏家窝铺以及西水泉遗址发掘出的灰坑十分相似（段、程和曹 2011; 内蒙古 1994b, 1997, 2004; 中国 1982），并且似乎与后者具备相同的、在长期定居环境下的储藏功能。二布尺地区探方 XK 中的灰坑具备非常规整的石砌内表面，这种现象有些罕见，从形式上看，更类似于后来的夏家店下层文化居住址里的储藏坑（例如大坨头 [天津 1966]、三座店 [内蒙古 2007] 和二道井子 [内蒙古 2010a] 发现的储藏坑）。值得注意的是，正如前面提到的那样，陶片和碳十四测年结果同时确定了这个灰坑的年代最晚，从而在时代上比其它灰坑更加接近夏家店下层文化。总而言之，在东山嘴、三家和二布尺地区发现的灰坑是典型的居住性遗存。与在红山后、蜘蛛山、西水泉、魏家窝铺、兴隆沟、白音长汗、西台、南台子和二道梁这些被充分揭露的红山文化村落遗址中发现的灰坑性质相同。

在三家地区 A141 探方 XQ 中，揭示出一个圆形积石冢的边缘（图 3.13），从已揭露的部分以及相应的环形磁力异常的大小判断，其直径大约 9 米，高 0.5 米。该积石冢主要用黄色硬质的基岩生土堆积而成，同时掺杂了一种致密的褐色半熟土。揭露出来的一小部分积石冢边缘呈 45° 的倾斜角度。积石冢的表面由细腻致密的浅褐色土混合许多石头构成，在边缘倾斜的坡面上，石头尤其密集，而在台地的上表面部分，石头的数量少一些。积石冢边缘密集分布的石头可以解

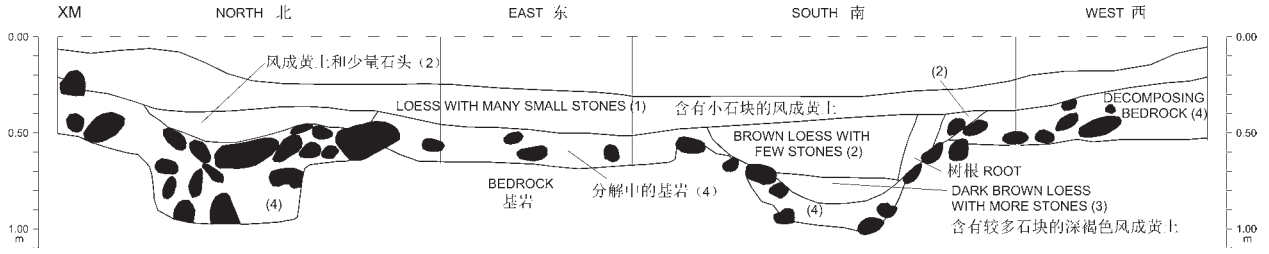


Figure 3.11. Profile of pit feature in Test XM.

图 3.11 探方 XM 灰坑剖面图

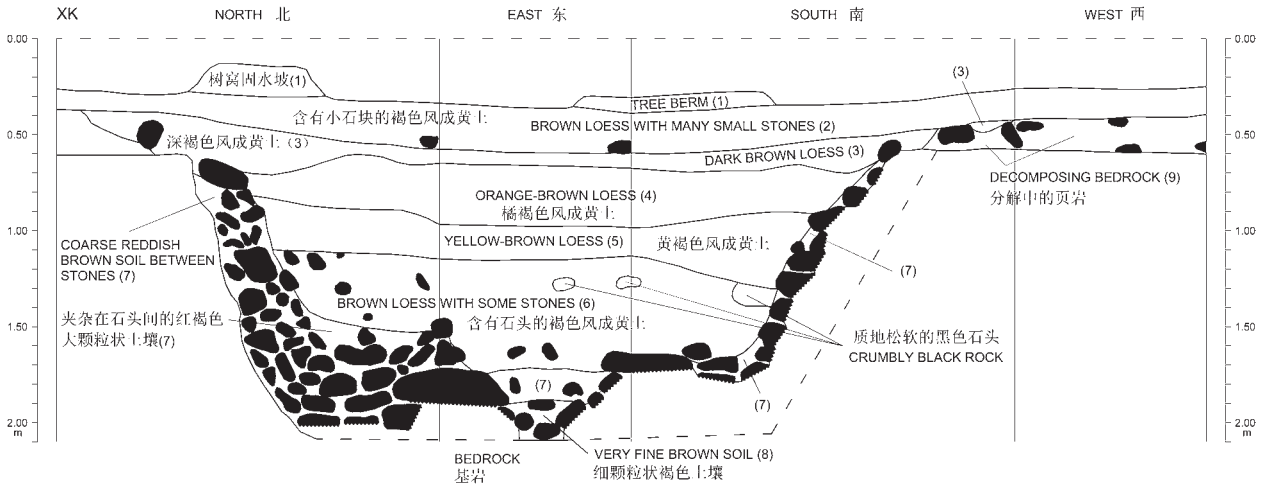


Figure 3.12. Profile of pit feature in Test XK.

图 3.12 探方 XK 灰坑剖面图

of these radiocarbon samples are available online (see Appendix). This feature seems too small to have been a house structure, and was more likely a storage pit. The careful earth and stone lining might have been intended to protect something perishable, such as grain. It might have had a roof of wood, thatch, or daub supported by wooden beams set in the step at its top, although there was no clear archaeological evidence of such a structure.

Storage pits are the most common feature associated with Hongshan period residential structures that have been excavated on a larger scale elsewhere. Most often these pits are located outside houses, but occasionally they are also dug into house floors. The size, shape, construction technique, and contents of the well preserved pits excavated in tests XD/XL and XM at Dongshanzui and Erbuchi are very similar to other excavated examples at Baiyinchanghan, Nantaizi, Weijiawopu, and Xishuiquan (Duan, Cheng, and Cao 2011; Neimenggu 1994b, 1997, 2004; Zhongguo 1982), and seem to have served the same storage function in a permanent residential context. The extensive rock lining of the pit feature in Test XK at Erbuchi is somewhat unusual, resembling more the residential storage pits of later Lower Xiajiadian times (such as those at Datuotou [Tianjin 1966], Sanzuodian [Neimenggu 2007], and Erdaojingzi [Neimenggu 2010a], for example). It is interesting to note that both ceramic and radiocarbon dates, as noted above, make this the most recent pit feature excavated, and thus closer than the others to Lower Xiajiadian in time. In sum, the pit features in the Dongshanzui, Sanjia, and Erbuchi areas appear to be what is left of residential occupations of the same kind as those more completely documented at "village" sites like Hongshanhou, Zhizhushan, Xishuiquan, Weijiawopu, Xinglonggou, Baiyinchanghan, Xitai, Nantaizi, and Erdaoliang.

Test XQ in Sector A141 of the Sanjia area revealed the edge of a circular platform (Fig. 3.13). Judging by the portion exposed and the size of the ring-shaped magnetic anomaly it corresponded to, it was some 9 m in diameter and about 0.5 m high. The platform was constructed by piling up fill consisting primarily of hard yellow clay similar to the sterile decomposing bedrock that underlay cultural deposits in this locality. It was also mixed in irregular pat-

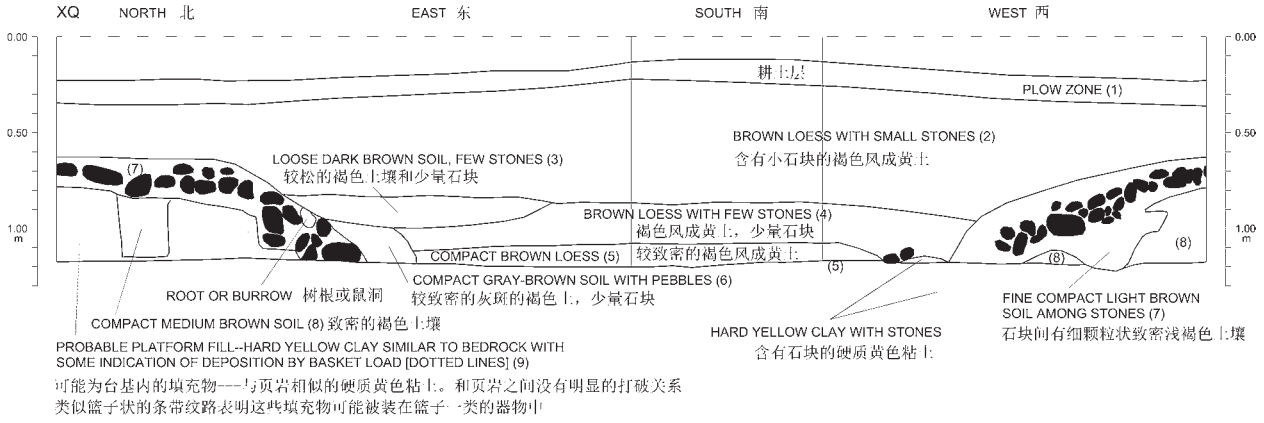


Figure 3.13. Profile of platform feature in Test XQ.

图 3.13 探方 XQ 积石冢剖面图

释勘测中发现的环状磁力异常现象。探方 XQ 上层堆积中的陶片分布十分密集，而下层堆积中的陶片密度则显著减小。积石冢出土的所有陶片均属于红山文化，其中的 7 个陶片（占到探方 XQ 出土红山文化陶片总数的 4%）是筒形器，这是红山文化积石冢上最常见的祭祀器物。这个小型积石冢的结构及筒形器的使用，与红山文化祭祀建筑通常和普遍的模式相符合。最广为人知的已发掘实例（例如东山嘴以及牛河梁遗址）拥有更大的建筑规模和更高的建造技术，大小更加一致，石头表面和边框等也更加规整。不过，一些建造稍显粗糙的小型积石冢，例如探方 XQ 中揭露的这个，在广大的红山文化分布区域内被多次发现（邵 1995；李 2004，2008；Peterson 2006）。

对红山文化区域聚落模式的解读

对红山文化聚落模式的认识主要来自少数被发掘的村落遗址，出土的遗物组合和生态样本明确地揭示出红山文化的居民从事着混合型的经济生产，包括农业、动物饲养、狩猎采集，以及多种手工业生产。这些村落拥有半地穴式的房屋建筑，屋内设有灶。房屋有木构框架、茅草屋顶和木骨泥墙。居住建筑常伴有大量用于存储和埋葬的窖穴，有时候还设有正式的墓地。所有这些信息表明，当时聚落的定居程度很高，居民们对某些特定地点投入了许多精力，并且至少显示出领地的存在。把红山文化的居住遗迹与用于祭祀的圆形或方形的积石冢以及含有精致随葬品（绝大多数是玉器或具备象征意义的器物）的墓葬联系起来尚存争议（张、Bevan 和郭 2013）。尤其是牛河梁遗址，存在着已知规模最大的祭祀建筑群，在这里展开的大量发掘工作没有发现与居住建筑有关的直接证据。东山嘴是另外一处广为人知的拥有红山文化祭祀建筑的遗址，在该遗址的发掘同样没有找到与居住有关的直接证据。大凌河上游的调查特意以东山嘴遗址为中心，是希望了解居住遗迹与礼仪建筑的关系。

在大凌河上游调查区的东山嘴、三家和二布尺地区，发掘的灰坑、积石冢与以前发掘的红山文化遗址的内容十分相符。虽然没有发现保存下来的房址，不过在探方的堆积以及地表的密集性采集中都发现了红烧土的残块（平均来讲，每发现 62 个红山文化的陶片，就会发现 1 块红烧土，参见附录）。大凌河上游调查区的红山文化遗迹与以前发掘过的红山文化村落均含有上述考古因素。

在大凌河上游调查的居住区域，从发掘揭露的灰坑以及根据磁力勘测确定的潜在文化遗迹中，发现红烧土块的密集程度在不同地区间的差异十分显著。相同的，地表遗物的密度在不同地区间也有巨大差别，并且在建筑和其他遗迹更为丰富的地点，地表遗物的密度总是较高。将上述所有因素综合起来，则能较为精确地反映某一特定地点在居住使用方面的累积强度。大凌河上游地区红山文化的堆积比较浅薄，这与在其他地区观察到的红山文化居住遗址的现象一致。房屋通常都无法得到很好的保存，但发现了一些灰坑和分布在地表的遗物群。考虑到这些情况，有一点十分清楚，那就是用考古记录来了解红山文化社区，大部分要用地表和耕土层中出土的材料（Hawkins 1998），我们在大凌河上游地区所使用的方法就很好地遵循了这一点。

大凌河上游地区红山文化居住遗迹的最高密度也很少能达到白音长汗遗址在 4.5 公顷面积内分布 17 座房屋的程度。其中绝大部分遗存（不仅包括本章中描述的 16 公顷范围内出土的遗物，还包括后面将要谈到的整个调查区域内的遗物）暗示着比较稀疏的居住密度。这提示我们，那些密集、紧凑的核心村落很可能是例外，而非常态。大多数红山文化的居住遗迹更加分散和稀疏。如果以通常和实用的标准选择发掘地点，那些遗迹密集、保存完好、遗物丰富的遗址就会被选中，而它们并不一定是具有代表性的居住区。在中国东北地区一些既包含有红山文化，又包含有早于或晚于红山文化的多个考古学文化层位的遗址中，发现过一两个单独存在的红山文化的房屋遗迹，这一考古证据支持红山文化存在一个更加分散的居住模式。

与其它地区已发掘的遗址相比，虽然大凌河上游地区红山文化的居住遗迹分布的更加稀疏和分散，但是这不应该被理解成该地区的定居生活比其它地方要短暂。通常认为，生活方式的流动性越强，拥有的财产越少，加上经常变换的居住地，会产生非常稀疏的考古遗存。蒙古的 Khanuy 山谷就提供了一个非常有用的可比较的实例（Houle 2010）。民族志和考古学提供了多重证据，让我们清楚地看到，Khanuy 山谷在青铜时代晚期的时候居住着游牧人群，他们在一年中季节性迁徙。这些规律性的迁徙一年中仅有两次，在相距数公里的地点之间进行，使用牲畜来搬运家用物品，这些特点使得其比大多数过着迁徙生活的人群积累了更多的财富。不过，在一些青铜时代晚期更密集的居住遗迹中开展的发掘表明，每立方米文化

terns with a compact medium brown soil. The small part of the platform edge that was exposed was sloped at about a 45° angle. The facing and upper surface of the platform consisted of a fine compact light brown soil containing a large number of stones. These were especially concentrated in the sloping face of the platform edge and less abundant in the upper surface of the platform. These stones and their concentration at the platform's edge presumably account for the ring shape of the magnetic anomaly this stratigraphic test was excavated to investigate. Sherds were quite abundant in the upper layers of Test XQ, but density dropped considerably in lower layers. All sherds associated with the platform feature were Hongshan. Seven of these sherds (4% of the Hongshan sherds from Test XQ) were of the *tongxingqi* cylinders often used as architectural elements in Hongshan ceremonial platforms. This small platform associated with *tongxingqi* sherds fits the general and widespread pattern of Hongshan ceremonial architecture. The best-known excavated examples (as at Dongshanzui itself and Niuheliang) are larger and better built, with more uniformly sized and better aligned facing stones, curb features, etc. But smaller examples of somewhat cruder construction, very like the feature in Test XQ, are documented largely from surface remains across a wide area in northeastern China (Shao 1995; Li 2004, 2008; Peterson 2006).

Interpreting Hongshan Regional Settlement Patterns

Not surprisingly, conventional wisdom about Hongshan residential patterns derives primarily from the small number of excavated village sites. The assemblages of artifacts and ecofacts from these excavated villages unequivocally attest to populations practicing a mix of agriculture, animal husbandry, wild plant and animal procurement, and a wide array of craft activities. These villages have substantial semi-subterranean house structures with internal hearths, timber frame superstructures, thatched roofs, and wattle-and-daub walls. They are associated with numerous pit features for storage and burial facilities, sometimes organized into formal cemeteries. All this indicates a high degree of settlement permanence and investment in particular places, and at least suggests the presence of territoriality. There is controversy about the association of Hongshan residential remains with circular, and sometimes square, platforms interpreted as ceremonial features, and sometimes including burials with elaborate offerings, mostly of jade ornamental and/or symbolic items (cf. Zhang, Bevan, and Guo 2013). Especially at Niuheliang where the largest known cluster of such ceremonial remains is located, a considerable amount of excavation focused on public architecture has not revealed much in the way of directly associated residential structures. The Dongshanzui site, of course, is another well known example of Hongshan ceremonial architecture whose excavation did not document much immediately associated residence, and the Upper Daling survey zone was located so as to include the Dongshanzui site.

The pit features and platform exposed by stratigraphic testing in the Dongshanzui, Sanjia, and Erbuchi areas of the Upper Daling survey zone fit comfortably in the context of previously excavated Hongshan sites. No preserved residential structures were exposed in the Upper Daling stratigraphic testing, but burned daub fragments were abundant in both test pit deposits and intensive surface collections (one daub fragment was recovered for every 62 Hongshan sherds on average—complete data available online, see Appendix). These elements of the archaeological record thus are shared by the Hongshan remains studied in the Upper Daling region and Hongshan permanent village settlements previously excavated.

Within the occupation areas studied in the Upper Daling region, the abundance of daub fragments recovered, of pit features exposed by excavation, and of probable cultural features identified by magnetometer survey varied substantially from place to place. The density of surface artifacts also varied substantially from place to place, and the densities of surface artifacts were consistently higher in places where the evidence of structures and features was more abundant. Taken together all these elements provide a reasonably accurate reflection, then, of the cumulative intensity of residential use of a particular place. The shallowness of Hongshan cultural deposits in the Upper Daling region is consistent with what has been much more widely observed at Hongshan habitation sites across northeastern China. House structures often seem not to be well preserved, but there are some pit features and surface scatters of artifacts. Given these conditions, it is clear that much of what can be learned about Hongshan communities from the archaeological record is to be learned by studying materials recovered from the surface and the plow zone (cf. Hawkins 1998), and the methods pursued in the Upper Daling region have emphasized taking advantage of this situation.

At their very densest, the Hongshan residential remains of the Upper Daling region seldom reach the level of, for example, Baiyinchanghan with its 17 houses in 4.5 ha. The vast majority of the Upper Daling remains (both those of the 16 ha whose study has been described in this chapter and, as we will see, those encountered in general across the regional survey zone) suggest substantially sparser occupation. This implies that compact nucleated village communities may well be the exception rather than the rule, and that for the most part Hongshan occupation was rather more dispersed and scattered. The usual and practical criteria for selecting sites for excavation on the basis of concentrated, well-preserved, abundant remains of the period of interest would be expected to result in the selection of especially densely settled localities that thus cannot necessarily be taken as typical residential communities. Excavation reports for multicomponent sites in northeastern China with predominantly earlier or later occupations sometimes do mention in passing the presence of a lone Hongshan house feature or two that would comprise excavated evidence for a more dispersed pattern of residence.

堆积中，仅含有 13.8 个青铜时代晚期的陶片（Houle 2010:84－109）。在大凌河上游地区红山文化居住遗迹发掘产生的陶片密度高出前者十倍多，大约每立方米的文化堆积中含有 141.1 个红山文化的陶片。因此，可以清楚看出，相比我们将在下一章中讨论的大凌河上游地区的红山文化，真正游牧性的居住模式所产生的考古遗存要稀疏得多。此外，真正的游牧生活方式缺少大量因日常生活产生的遗迹，而这些都明确地出现在大凌河上游区域。尽管相比那些被选择进行全面发掘的红山文化居住遗址，大凌河上游地区日常生活遗迹更加分散和稀疏一些。最后，通过密集的地表采集和发掘，在大凌河上游地区获得了大量遗物，包括石器和陶器，这些遗物的类型也与定居式农业生产者（而非游牧人群）的活动行为完全一致。

That the remains of Hongshan occupation in the Upper Daling region appear sparser and more dispersed than those of the villages that have been excavated elsewhere, should not, however, be taken to indicate occupation of a less permanent character. A more mobile living pattern has often been thought of as leading to fewer possessions, and combining this with short-term shifting occupation would make for a very sparse archaeological record. The Khanuy Valley of Mongolia, for example, provides a useful comparison (Houle 2010). A number of lines of evidence, both ethnographic and archaeological, make it quite clear that late Bronze Age occupation of the Khanuy Valley was by mobile herding people who shifted their residence locations seasonally during the year. These were regular moves, only twice a year, between locations a few kilometers apart, with the aid of pack and draft animals for moving household goods—conditions that would facilitate the accumulation of more voluminous assemblages of possessions than in most instances of mobile living. Nonetheless, stratigraphic tests carried out in some of the denser late Bronze Age occupation areas yielded an average of only 13.8 late Bronze Age sherds per m^3 of cultural deposit excavated (Houle 2010:84–109). The stratigraphic tests described above, in Hongshan occupation areas in the Upper Daling region, yielded densities more than ten times higher: some 141.1 sherds per m^3. It is thus clear that genuine residential mobility leads to a much, much sparser regional archaeological record than the one we will describe in the next chapter for Hongshan times in the Upper Daling region. It also lacks the kinds of substantial features produced by daily living that are clearly present in the Upper Daling region, even if they are not as concentrated and abundant in particular localities as they have been in some of the, perhaps unusual, Hongshan residential sites that have been selected for extensive excavation. Finally, the large samples of artifacts collected in the Upper Daling region through intensive surface collection and excavation contain stone tool and ceramic vessel types entirely consistent with the activities of sedentary agriculturists, but not those of more mobile peoples.

Chapter 4

Hongshan Regional Community Organization

Excavated sites of the early Neolithic Xinglongwa (6000–5250 BCE) and Zhaobaogou (5250–4500 BCE) periods at various locations in northeastern China include compact sedentary villages of as many as a few hundred people (Liaoning 1988, 1994; Li 2008; Neimenggu 1997, 2004; Shelach 2006; Shelach and Teng 2013; Xin and Fang 2003; Zhongguo 1985, 1987, 1997a, 1997b, 2004). Subsistence remains include cultivated millet and soybeans, domesticated pigs, and numerous species of wild flora and fauna. Social organization appears egalitarian, and there is no evidence for productive differentiation until the very end of the Zhaobaogou period (Shelach 2000, 2006; Shelach and Teng 2013). No early Neolithic remains at all were encountered in the Upper Daling survey. Clearly, the early Neolithic was a period in which a very small population was spread through the vast area of northeastern China. Residence patterns were sedentary, but settlements, of course, shifted over time. The lack of remains in the Upper Daling survey area does not indicate that no one ever lived there during the early Neolithic, but rather that settlements there were so few and short-lived that they escaped detection entirely in the regional survey. The earliest period of occupation for which we have remains to report, then, is Hongshan (4500–3000 BCE), the period that was central to the research questions that gave rise to the project.

Local Communities

Altogether 2,755 Hongshan sherds were recovered in the Upper Daling survey from 485 separate collection units that covered a total area of 87 ha. (These numbers and other results of quantitative analysis in this volume differ slightly from those presented previously [Liaoning et al. 2010; Peterson et al. 2010] because the ceramics in the regional survey have been reanalyzed to achieve greater chronological precision, and the results presented here are based on the new numbers. In no case do the changes alter any conclusions in earlier publications.) The distribution of these collection units is clearly quite uneven (Fig. 4.1), with pronounced clustering evident in a number of locations. This clustering makes visible the centripetal forces of social interaction that create local communities (villages and hamlets). Representing the distribution of population as an occupation density surface facilitates delineating the clusters that reveal local community structure (see Peterson and Drennan 2005). The result of this spatial cluster analysis is the identification of 134 local communities, ranging from single-family farmsteads up to a substantial village estimated at 250–500 inhabitants (Figs. 4.2 and 4.3). Although these collection units do form a local village community, it is a very dispersed one, with its 50–100 households spread across some 90 ha. Distances between houses, then, would have been several times larger than the 20 m or less that has been observed at a number of excavated sites. Two other local communities are estimated at more than 50–100 inhabitants. All others had fewer than this number; more than 100 of them were farmsteads of one or two families (Fig. 4.4). Although numerous, these farmsteads housed only a small fraction of the Hongshan regional population; about half of the regional population lived in villages estimated at more than 50–100 inhabitants (Fig. 4.5). These villages and farmsteads were concentrated on gentle slopes along the northwestern margins of the Daling River floodplain. This relatively level land included bluff-top locations at the valley's edge as well as slightly rolling terrain farther back from the main river in the west central portion of the survey zone. These locations afforded protection from flooding and access to good farmland.

Supra-local Communities

Hongshan local communities were spread from one end of the Upper Daling survey area to the other, but, like individual collection units, the distribution of local communities was decidedly uneven. Spatial clustering at a supra-local scale was carried out via a mathematically smoothed occupation density surface (Peterson and Drennan 2005). Four settlement clusters are clearly visible in this surface (Fig. 4.6). Each is a few kilometers across, and they are separated from each other by more sparsely occupied territory. Such regional-scale clusters of local communities represent the centrally-focused structures of interaction that bind multiple local communities together into larger social units. No such social units integrating more than a single locality have been detected for any earlier period anywhere in northeastern China (cf. Chifeng 2011). Their emergence in Hongshan times is at the heart of the most important social transformation that occurs during the Neolithic. The Hongshan culture has often been heralded as a major advance in social complexity, involving such features as social inequality, political leadership, craft specialization, exchange, collective ritual, and monumental construction. All these features are characteristics of the ways in which societies are organized, and the regional settlement clusters

第四章

红山文化区域性社区组织

在中国东北的多个地点发掘的新石器时代早期的兴隆洼文化（公元前 6000 年至公元前 5250 年）和赵宝沟文化（公元前 5250 年至公元前 4500 年）遗址包含了由几百人组成的分布紧凑的定居村落（辽宁 1988, 1994; 李 2008; 内蒙古 1997, 2004; Shelach 2006; Shelach 和滕 2013; 辛和方 2003; 中国 1985, 1987, 1997a, 1997b, 2004)。生业遗存包括栽培的粟和大豆、家猪和许多野生动植物种类。社会组织看上去是平等的，直到赵宝沟文化的末期，才出现了生产分化的迹象 (Shelach 2000, 2006; Shelach 和滕 2013)。在大凌河上游的调查中，没有发现任何新石器时代早期的遗存。很显然，在新石器时代的早期阶段，仅有数量很少的人口分散居住在广大的中国东北地区。居住模式虽然是定居式的，但聚落也经常迁移。虽然在大凌河上游调查区域内没有发现任何新石器时代早期的遗存，但是并不意味着当时这里是无人区，而是表明当时在该地区的聚落数量很少并且存在的时间十分短暂，以至于完全无法调查到它们的存在。本报告中最早的遗迹、遗物属于红山文化（公元前 4500 年至公元前 3000 年），该文化正是本项目研究的核心问题。

地方性社区

在大凌河上游调查区，从总面积 87 公顷的 485 个采集单位共获得 2755 个红山文化陶片（这里提到的数字以及本报告中其它定量分析的结果和之前已发表的略有差别 [辽宁等 2010; Peterson 等 2010]，原因是对陶片进行了重新的分析以获得更准确的年代精度，而本报告的结果基于这些新的数字，不过这并不会改变之前已发表文章的任何结论）。这些采集单位的分布显然十分不均匀（图 4.1），在一些地点出现了明显的聚集。这种集群形式使得催生地方性社区（村落和小村庄）的社会互动向心力清晰可见。将地表居住密度看做是人群分布的反映，有助于我们界定集群，进而揭示出地方性社区的结构（参见 Peterson 和 Drennan 2005)。这种空间集群分析的结果是识别出 134 个地方性社区，规模从独立家庭的农庄到大约由 250 至 500 人组成的大型村落（图 4.2 和图 4.3)。虽然这些采集单位的确形成了一个地方性的村落社会，但村落的分布非常分散，在约 90 公顷的范围内，散布着 50 至 100 个家庭。因此，房屋之间的距离可能是其它已发掘遗址的房屋间距（大约 20 米左右）的数倍。另外两个地方性社区大约拥有 50 至 100 名居民。其余地方性社区的人口都小于上述数字，超过 100 个地方性社区是由一两个家庭组成的小农庄（图 4.4)。虽然这些小农庄的数目众多，但其人口总数仅占红山文化区域人口的很小一部分。接近一半的区域人口居住在由 50 至 100 人组成的村落中（图 4.5)。这些村落和小农庄主要聚集在大凌河冲积平原西北边缘的缓坡上。这种相对平缓的土地包括河谷边缘峭壁顶端的平台以及略微起伏退离主要河流的坡地。上述地点既可以避免洪水的侵袭，又便于接近肥沃的田地。

超地方性社区

红山文化的地方性社区从大凌河上游调查区的一端延伸到另一端，但是，正如那些采集单位一样，地方性社区的分布明显不均匀。通过对地表居住密度进行数学上的平滑处理，我们可以得到超地方性尺度上的空间分布集群 (Peterson 和 Drennan 2005)。在这样的表面上，有四个聚落集群清晰可见（图 4.6)。每个集群的范围横跨数公里，彼此之间被人烟更加稀疏的空间所分隔。这种区域尺度上的地方性社区的集群反映出中心趋向的互动结构，将多个地方性社区合并成更大规模的社会单元。红山文化之前，在中国东北地区从没有发现这种现象（参见赤峰 2011)。红山文化出现多个超地方性社区正好处在新石器时代最重要的社会转折点。通常认为红山文化的社会复杂化取得了重要的进步，包括社会不平等、政治领导、专业化生产、交换、公共祭祀、礼仪建筑等方面，所有这些都是组织化社会的特征。大凌河上游地区（赤峰地区亦是如此）识

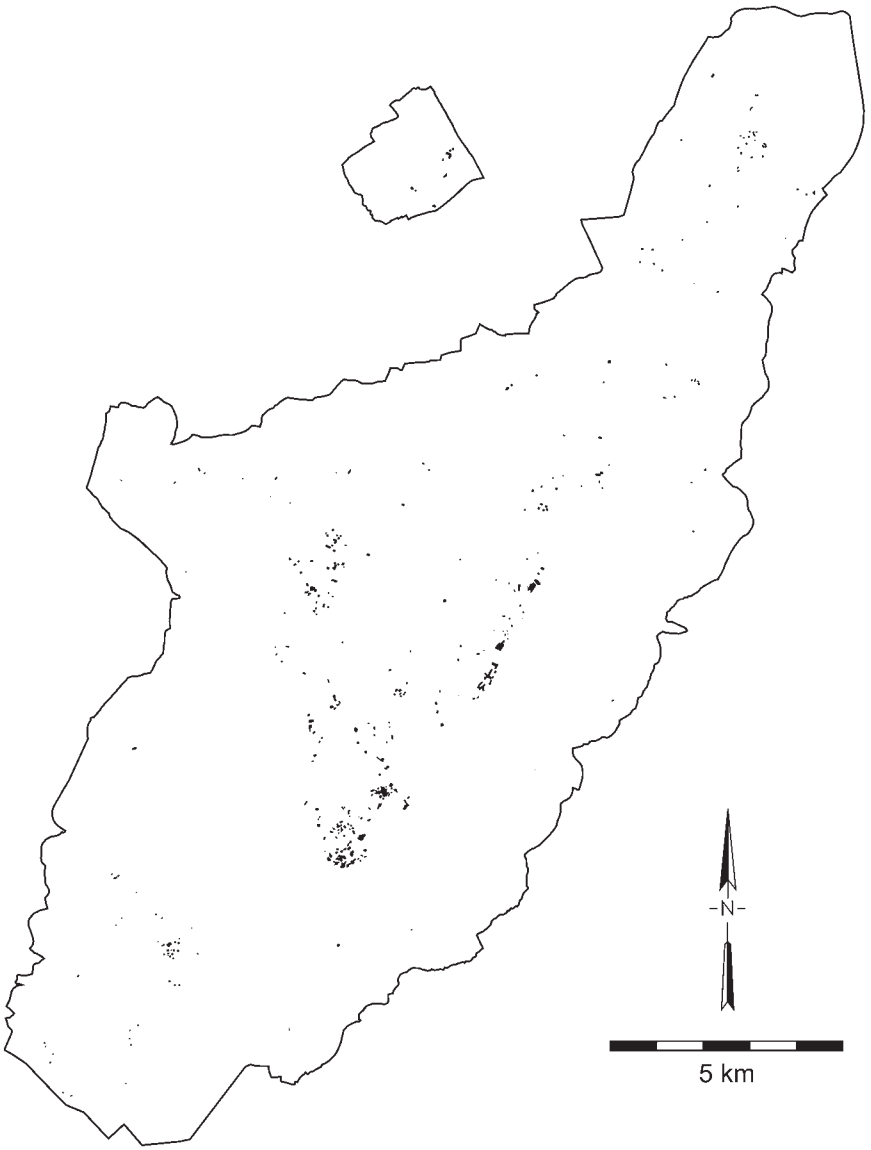


Figure 4.1. Distribution of collection units with Hongshan period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

图 4.1 红山文化陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

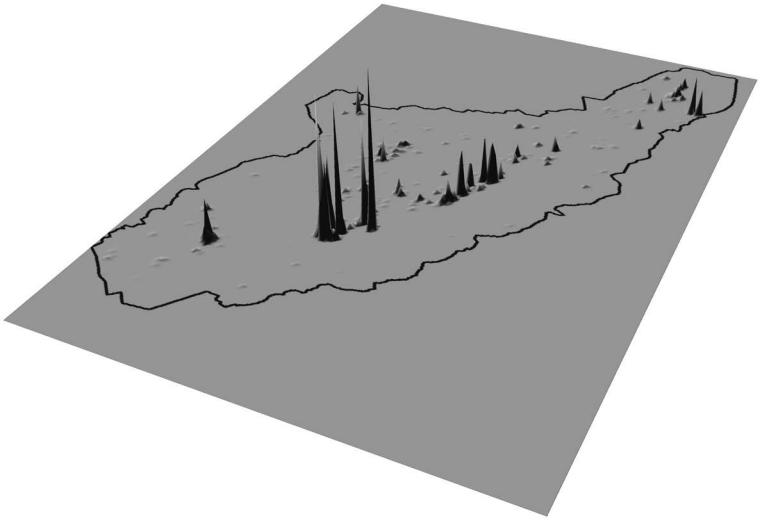


Figure 4.2. Unsmoothed surface representing Hongshan period occupation. Available online in color—see Appendix.

图 4.2 未经平滑处理的红山文化居住密度图（彩色图片可以从网络上获取，参见附录）

别出的区域聚落集群正是这种社会组织的单元。这些单元被称作超地方性社区或者行政区。考虑到这些单元涉及到政治领导，准确地讲，应该称它们为小型的区域政治单元。1 号和 4 号行政区分别位于调查区域的最北端和最南端，由于它们非常接近大凌河上游调查区域的边缘，因此可能没有被完全地展示出来。2 号和 3 号行政区可能更加完整，分布范围横跨 5 至 8 公里，分别拥有 450 – 900 个和 150 – 300 个居民。

对人口规模最大的 2 号行政区（图 4.7）进行了等级 - 规模分析，获得相应的 A 值为 -0.682（Drennan 和 Peterson 2004），表明这个行政区围绕着一个中心地点高度聚集，此中心地点的规模远远大于排名仅随其后的第二大地方性社区。不过由于等级 - 规模图中忽略掉的地方性社区鲜有比两三个家庭组成的小村落或农庄更大的规模，因此图 4.7 中的统计置信区间十分宽泛。最大的地方性社区覆盖了三家地区的大部分区域（图 4.8），在这里进行了密集性地表采集和发掘，本报告的第三章对此进行过讨论。第二大地方性社区包括东山嘴地区含有祭祀建筑以及所有进行过密集性地表采集和发掘的区域。第三大地方性社区临近东山嘴，第四大地方性社区包括三家地区进行过密集性地表采集和发掘的其余部分。由于这四个社区的间隔很小，所以形成了最主要的人口聚集区。这些地方性社区的间距较小，整体上处于松散的分布状态。假使它们分布的更加紧凑，并且彼此间隔更远，那么将它们划分为四个单独社区的意义就更大。距离 - 互动原则是习惯上将空间集群解释为互动社区的依据（参见 Peterson 和 Drennan 2005），此原则指出，被周边无人区围绕的紧凑核心的地方性社区存在特别密集的内部互动的模式。那些彼此相距并不远、分布更加稀疏的地方性社区，正如 2 号行政区中心发现的那些社区，反映的不是密集的社区内部的互动，而可能是更高程度的社区之间的互动。总而言之，我们并不急于认定等级 - 规模图界定出的四个社区。

另外一种考虑人口集中的方法完全不依赖于对地方性社区的界定，而是强调人口在空间上的真实分布。图 4.9 给出了环绕 2 号行政区人口重心的 12 个等面积同心圆环内估算人口的比例，B 值为 0.858，表明集中化程度非常高（B 值为 1.000 表示最大程度的集中化，所有人口都将集中于最中心的那一个圆环内；而 B 值为 0.000 则暗示最小程度的集中化，所有围绕中心的圆环拥有相同的人口比列 [Drennan 和 Peterson 2008]）。因

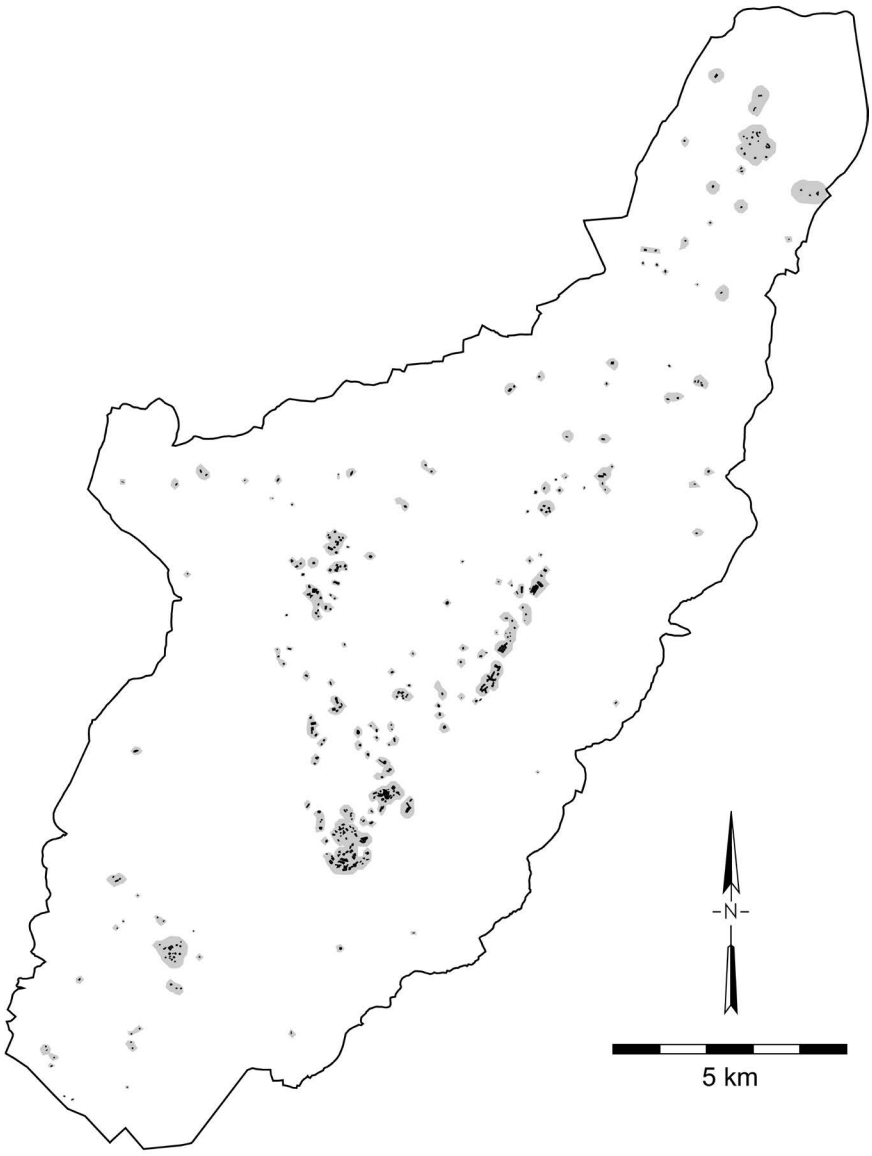


Figure 4.3. Collection units (black) clustered into Hongshan local communities (gray). Available online in color—see Appendix.

图 4.3 采集单位聚集形成红山文化地方性社区（灰色表示地方性社区，黑色表示采集单位，彩色图片可以从网络上获取，参见附录）

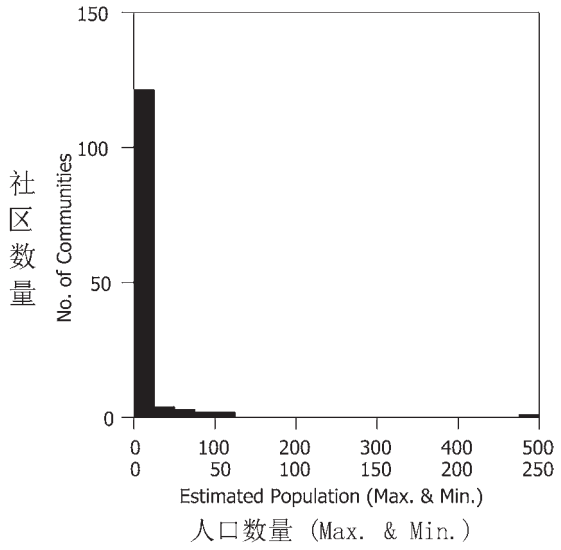


Figure 4.4. Histogram of Hongshan local communities by number of communities in each population range.

图 4.4 不同人口规模的红山文化地方性社区数量的柱状图

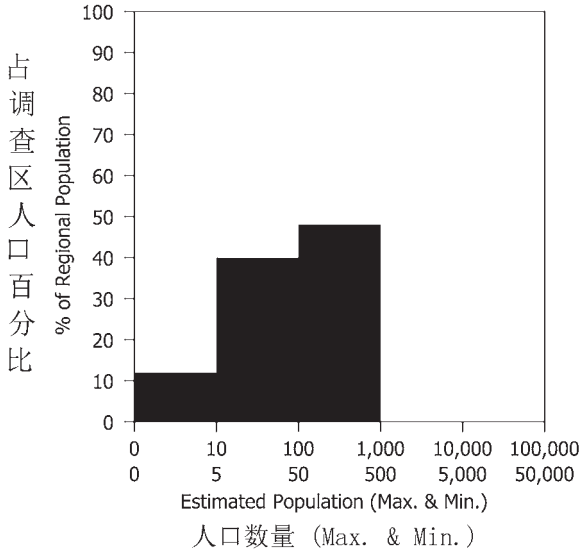


Figure 4.5. Histogram of Hongshan local communities by percent of regional population in each population range.

图 4.5 不同人口规模的红山文化地方性社区所占区域人口比例的柱状图

identified for the Upper Daling region (as for the Chifeng region) are the units of this social organization. These units have been referred to as supra-local communities or districts. To the extent that they involve political leadership, it is accurate to call them small regional polities. Districts 1 and 4, the northernmost and southernmost, may not be fully represented in the Upper Daling survey area since they lie so close to its limits. Districts 2 and 3 are probably more complete. They are 5–8 km across with estimated populations of 450–900 and 150–300, respectively.

A rank-size graph of the most populous District 2 (Fig. 4.7), and a corresponding *A* value of -0.682 (Drennan and Peterson 2004), suggest that this district is highly integrated around a central place that is quite substantially larger than the next largest local communities that follow it in rank order. Because there are so few local communities larger than the small hamlets or farmsteads of two or three households that were omitted from the rank-size graph, however, the statistical confidence zone in Fig. 4.7 is broad. The largest local community includes most of the Sanjia area where the intensive surface collections and stratigraphic tests discussed in Chapter 3 were carried out (Fig. 4.8). The second largest local community includes the Dongshanzui area with its ceremonial constructions and all of the sectors where intensive collections and stratigraphic tests were carried out. The third largest local community is near Dongshanzui, and the fourth includes the rest of the Sanjia area of intensive surface collections and stratigraphic tests. Together, these four largest communities form a major demographic concentration, since they are separated only by relatively short distances. These short separation distances, combined with the overall dispersed nature of these local communities, suggest that their identification as four separate communities may not be as meaningful as it would be if they were more compact nucleated communities separated by longer distances across unoccupied territory. The distance-interaction principles that underlie the practice of interpreting spatial clusters as interaction communities (cf. Peterson and Drennan 2005) suggest especially intensive patterns of internal interaction for tightly nucleated local communities surrounded by zones without occupation. Much more dispersed local communities not far from each other, like those found at the heart of District 2, should be taken to indicate less intensively focused internal interaction and probably higher levels of interaction between communities. In sum, we should not be hasty to reify the delineation of these as four separate communities (which rank-size graphs implicitly do).

It is possible to look at centralization in a different way—one that does not depend at all on the delineation of local communities, and which emphasizes the actual distribution of people in space. Fig. 4.9 graphs the proportion of estimated population in each of the 12 concentric equal-area rings around the demographic center of gravity of District 2. The *B* value of 0.858 indicates a very high degree of centralization. (A value of 1.000 would be maximum centralization, with *all* the population in the central ring, and a value of 0.000 would be minimum centralization with an equal proportion of the population in each ring [Drennan and Peterson 2008]). Thus, irrespective of exactly how local communities are delineated and separated, District 2's population is highly centralized. This suggests rather strong centripetal forces of interaction operating at the regional scale (in contrast to the somewhat weaker cen-

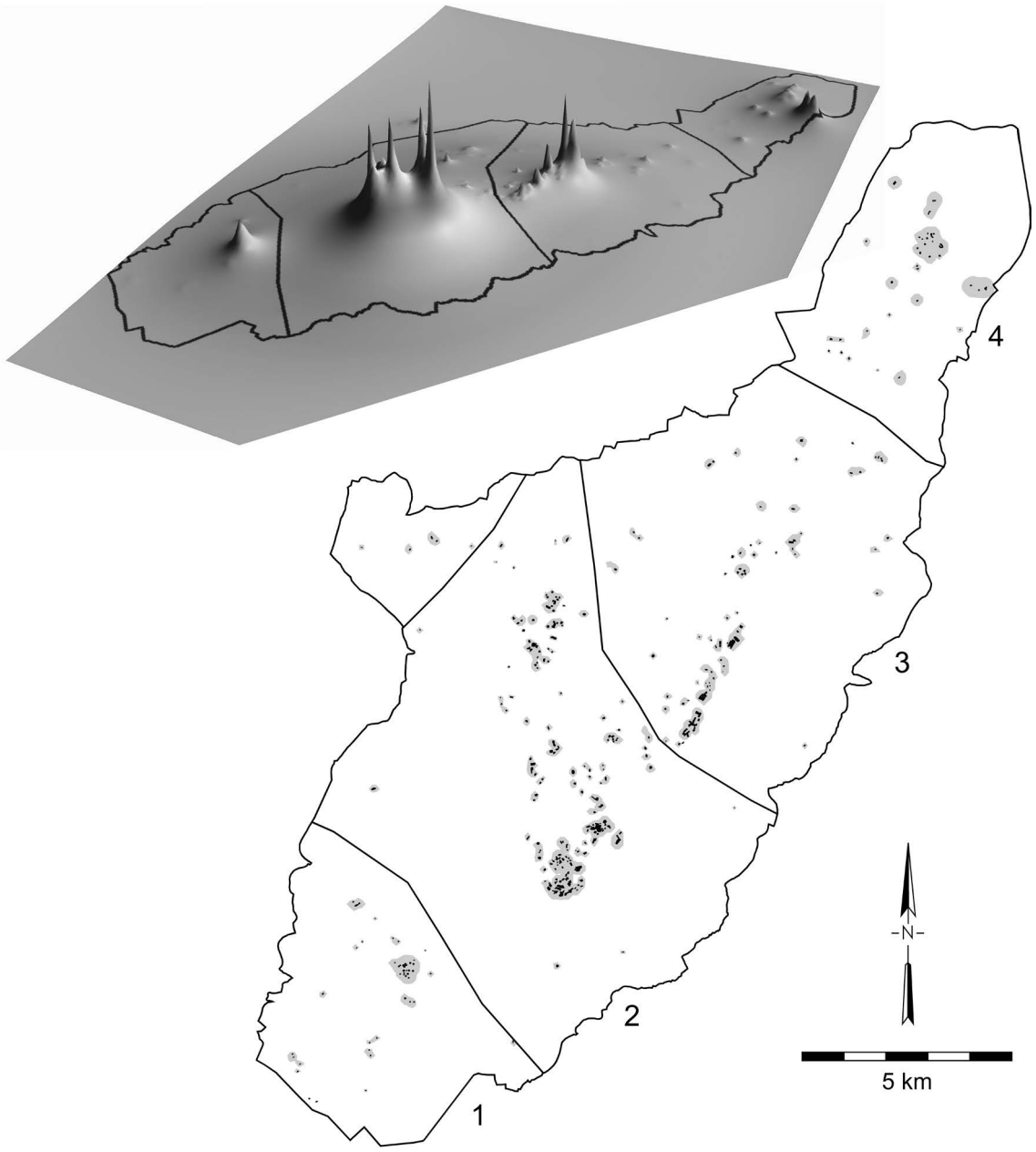


Figure 4.6. Smoothed surface representing Hongshan occupation and map of supra-local communities or districts. Available online in color—see Appendix.

图 4.6 平滑处理的红山文化居住密度图和超地方性社区或行政区的地图（彩色图片可以从网络上获取，参见附录）

此，无论地方性社区如何被界定以及区分，2 号行政区的人口都是高度集中的。这暗示着区域尺度内的互动具用非常强烈的向心力（与之形成对比的是，之前根据地方性社区的松散状态推断出在局部尺度上的向心力较弱）。

一些学者已经指出，有组织的宗教活动是将红山文化社会紧密结合在一起的重要组成部分。图 4.8 同样指出了 2 号行政区内由区域调查证据确定的进行宗教活动的地点。这些证据来自于地表可见的积石冢建筑的痕迹，例如积石冢的石砌边框，以及通常与祭祀建筑配套使用的筒形器残片。在 2 号行政区的中心圆环内，发现了两处非常确定的积石冢建筑（包括东山嘴遗址本身）、一处疑似积石冢以及三个存在大量筒形器残片的地点。此外，探方 XQ 中发现的积石冢（见本书第三章）也位于中心圆环之内（位于那座疑似积石冢的东南方向大约 300 米）。在中心圆环以外，仅发现两座疑似积石冢，均位于第三个圆环以内。在这个行政区内的所有四个最大的地方性社区都出现

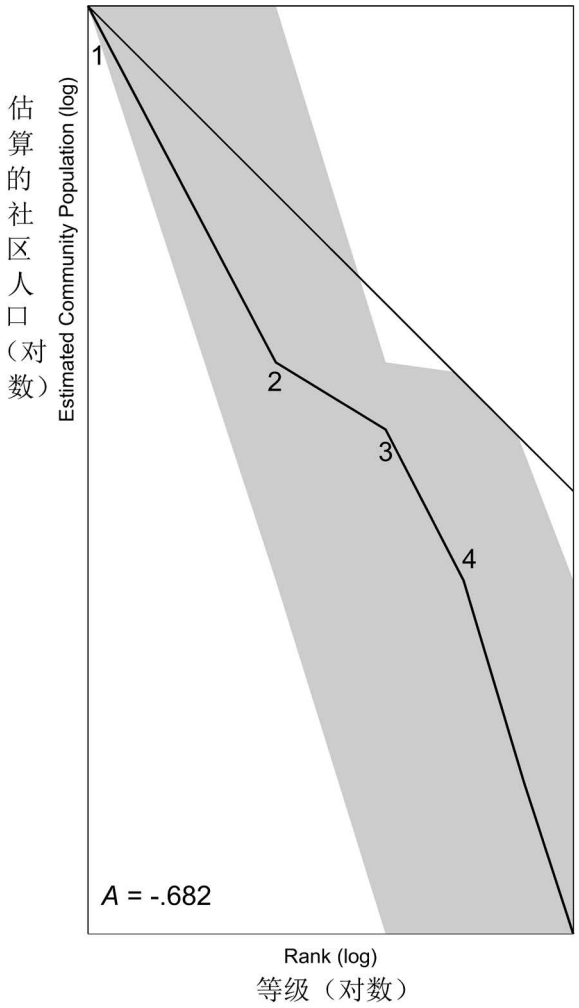


Figure 4.7. Rank-size graph of Hongshan District 2 with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 4.7 2 号红山文化行政区的等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

tripetal forces operating at the local scale which we infer from the dispersed nature of the local communities).

It has previously been suggested by a number of scholars that organized ritual activities were an important constituent in the social glue that held Hongshan societies together. Fig. 4.8 also shows the locations in District 2 where the evidence from regional survey suggests the presence of ritual facilities. This evidence came in the form of signs of platform construction visible on the surface, such as stone alignments from their facing walls, and in the form of sherds of the ceramic *tongxinqi* cylinders commonly used as architectural elements in Hongshan ceremonial structures. Two definite platform structures (including the Dongshanzui site itself), one probable platform structure, and three localities with abundant *tongxingqi* sherds were recorded within the central ring in District 2. In addition, the platform excavated in Test XQ (Chapter 3) lies within the central ring (about 300 m southeast of the probable platform location). Outside the central ring, only two probable platforms were recorded, both in the third ring out. All four of the largest local communities in the district are associated with such features. Clearly, the location of this evidence parallels the centralization of District 2's population in space very strongly. These ritual structures are not in remote locations away from residential zones; they are at the very heart of the settlement system. This distribution provides strong support for assigning an important integrative social role to organized ritual activities. Participation in ritual activities does, indeed seem to be among the centripetal forces, acting over a distance of a few kilometers, to create this small but strongly centralized Hongshan social unit.

District 3 shows similar patterns, although they are not as clear. A rank-size graph (Fig 4.10) shows a convex pattern (A = 0.630), although the error zone is again broad

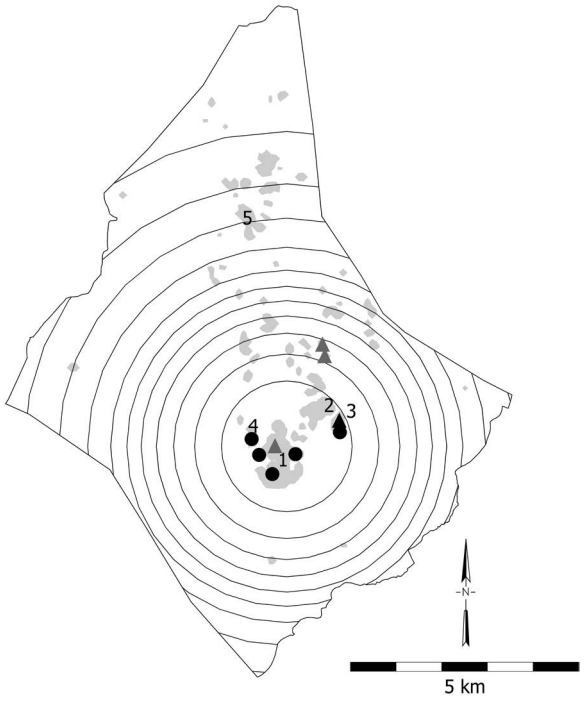


Figure 4.8. Hongshan District 2. Local communities are shown in light gray (numbers are population ranks for comparison to Fig. 4.7); circles indicate 12 concentric rings for centralization analysis (Fig. 4.9); black triangle is the ceremonial platform at the Dongshanzui site; gray triangles are locations of other probable platforms; black circles are locations where more than five *tongxinqi* sherds were recovered in close proximity. Available online in color—see Appendix.

图 4.8 2 号红山文化行政区（浅灰色表示地方性社区，数字表示与图 4.7 相比较的人口等级；圆圈表示 12 个为集中化分析（图 4.9）而划分的同心圆环；黑色三角形是东山嘴遗址祭祀建筑所在地；灰色三角形是其它疑似积石冢所在地；黑色圆圈是临近地区出土超过 5 个以上筒形器片的地点，彩色图片可以从网络上获取，参见附录）

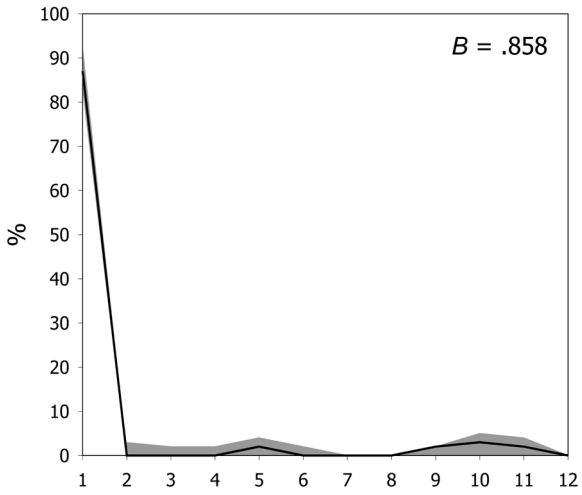


Figure 4.9. Centralization graph for Hongshan District 2 with error range for 90% confidence.

图 4.9 2 号红山文化行政区的集中化程度图以及对应 90% 置信度的误差区域

了积石冢这类建筑。很显然，这些建筑出现的地点与 2 号行政区内人口在空间上的集中化程度高度一致。那些宗教建筑并非位于远离居住区的偏僻地点，相反地，它们恰恰坐落在整个聚落体系的正中心。这种分布特点为人们将有组织的宗教活动看作是一个重要的社会整合的角色提供了强有力的支持。参与宗教活动看上去确实是一种向心力，其作用覆盖了数公里的范围，形成了虽小但高度集中化的红山文化社会单元。

3 号行政区显示了相似的模式，但是不如 2 号行政区那么清晰。因为仅有四个地方性社区的规模大于两三个以上的家庭，所以误差范围比较大，但尽管如此，等级 - 规模图（图 4.10）仍然显示了一个“凸型”分布模式（A=0.630）。考虑到行政区内最大的几个地方性社区的规模相当，这暗示着一个在集中化程度上比 2 号行政区减弱很多的小型区域体系。3 号行政区内的地方性社区也相当分散且彼此相距较近（图 4.11）。图 4.12 表明其集中化程度虽然不如 2 号行政区那样显著，但是也存在相对较强的集中化（B=0.726）。发现筒形器残片的三处地点与三个最大的地方性社区对应，且都位于中心圆环内。一座积石冢与最大的地方性社区毗邻，另外一座疑似积石冢位于第四大社区内部，并远离了行政区的人口中心。

不管是人口分布还是祭祀性建筑，3 号行政区与 2 号行政区一样，都没有很好地对应理想的同心状集中化模式，二者出现了相同方式和相同程度的偏离。与 2 号行政区相同，3 号行政区内的人口分布与祭祀设施之间体现出清晰的对应关系。环境限制可以解释为什么偏离超地方性社区理想的集中化模式。3 号行政区内界定出的四个村庄坐落在高于大凌河冲积的河谷平原 30 米至 40 米的断崖顶部，呈西南 - 东北的直线分布。因此，这些村落面对着非常好的田地，背后是一系列高约 100 米的石头山，这些小山将村落与西北方向人烟稀疏的区域分隔开。这种因为自然因素形成的聚落集群比 2 号行政区显示出更加线性的特征，聚落分布在一片广阔肥沃的起伏地形中，从而形成了一个更加聚集的模式。不过，作为区域规模的社会单元，3 号行政区的集中化程度以及因宗教活动的重要性而形成的向心力与 2 号行政区观察到的现象基本相同。

调查区域的边界与 1 号和 4 号行政区发现的遗迹十分接近，因此，关于这两个行政区的数据可能并不完整，这削弱了我们对它们的内部结构进行类似分析的信心。但是，仍然值得注意的是，这两个行政区内的聚落都是由一些零散的农庄、小村庄和少数村落组成（1 号行政区内发现了 1 个村落，4 号行政区有 2 个村落）。村落社区显示出与 2 号和 3 号行政区相似的特点，只不过更加分散。聚落模式与祭祀建筑的分布之间也存在非常清晰的对应关系。所有三个村落都有明显的祭祀设施，1 号和 4 号行政区内共发现了 9 处这样的地点，其中的 7 处就分布在这三个村落中。

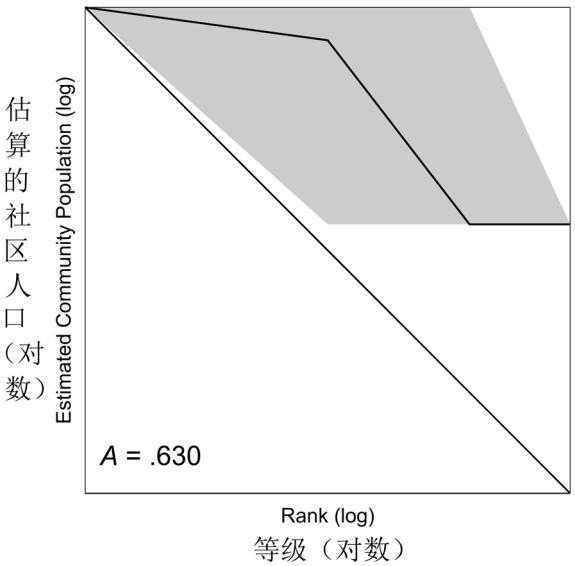


Figure 4.10. Rank-size graph of Hongshan District 3 with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 4.10 3号红山文化行政区的等级-规模图以及对应90%置信度的误差区域（估算人口的中位数在10以下的小村落或农庄未被计入在内）

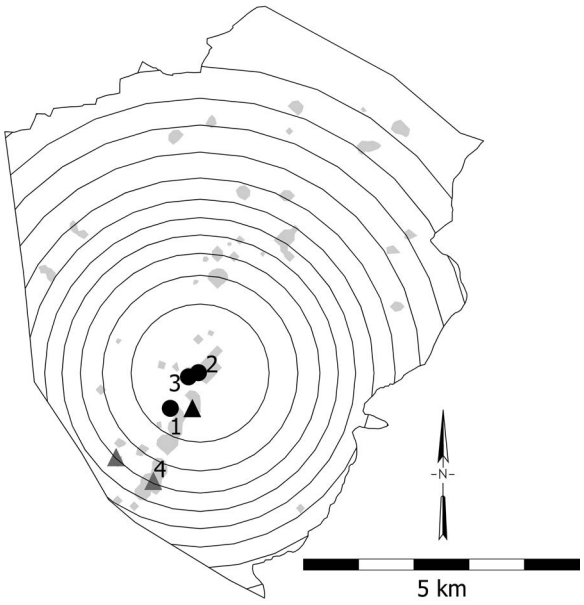


Figure 4.11. Hongshan District 3. Local communities are shown in light gray (numbers are population ranks for comparison to Fig. 4.10); circles indicate 12 concentric rings for centralization analysis (Fig. 4.12); black triangle is the location of a platform structure; gray triangles are locations of other probable platforms; black circles are locations where more than five *tongxinqi* sherds were recovered in close proximity. Available online in color—see Appendix.

图 4.11 3 号红山文化行政区（浅灰色表示地方性社区，数字表示与图 4.10 相比较的人口等级；圆圈表示 12 个为集中化分析（图 4.12）而划分的同心圆环；黑色三角形是一处积石冢所在地；灰色三角形是其它疑似积石冢所在地；黑色圆圈是临近地区出土超过 5 个以上筒形器片的地点，彩色图片可以从网络上获取，参见附录）

because there are only four local communities of more than two or three families. This would suggest a small regional system with considerably less integration than District 2 because these largest local communities are much more similar in size. Again, however, these local communities are fairly dispersed and closely spaced (Fig. 4.11). A centralization graph (Fig 4.12) indicates relatively strong centralization ($B = 0.726$), although not as strong as in District 2. The three locations from which *tongxingqi* sherds were recovered correspond to the three largest local communities and are within the central ring. A platform is adjacent to the largest local community, and a probable platform is in the fourth largest community, farther from the district's demographic center.

Neither population distribution nor ceremonial structures correspond as nicely in District 3 to the idealized concentric template of centralization as they do in District 2. Both, however, deviate from that idealized template in the same way and to the same extent. The correspondence between population distribution and ritual facilities is as clear as it was in District 2. Relatively straightforward environmental constraints provide an easy account for this departure from idealized patterns of centralized supra-local communities. The four villages delineated in District 3 are in a southwest-to-northeast line along bluffs looming 30–40 m above the flat floor of the Daling River floodplain. They thus face out on excellent farmland, and have at their backs a series of rocky hills rising another 100 m or so. These hills cut them off from the sparsely occupied territory to the northwest. This settlement cluster, by environmental force then, takes on a much more linear character than District 2, whose location in a broad zone of productive rolling terrain permits a more concentric pattern. The degree of centralization in the regional-scale social unit District 3, however, and the importance of ritual activities as centripetal forces seem fundamentally similar to those seen in District 2.

The proximity of the survey area's limits to the recorded features of districts 1 and 4 undermines the confidence we might have in a similar analysis of their internal structure, since they might be only incompletely represented in this dataset. It is nonetheless worth observing that settlement in each of these zones is a mixture of scattered farmsteads and small hamlets with a few villages (one in District 1 and two in District 4). The village communities show the same rather dispersed character as those in Districts 2 and 3. The clear correspondence between patterns of settlement and the distribution of ceremonial structures continues as well. All three villages have clear evidence of ceremonial facilities, incorporating seven of the nine locations where such evidence was recorded in districts 1 and 4.

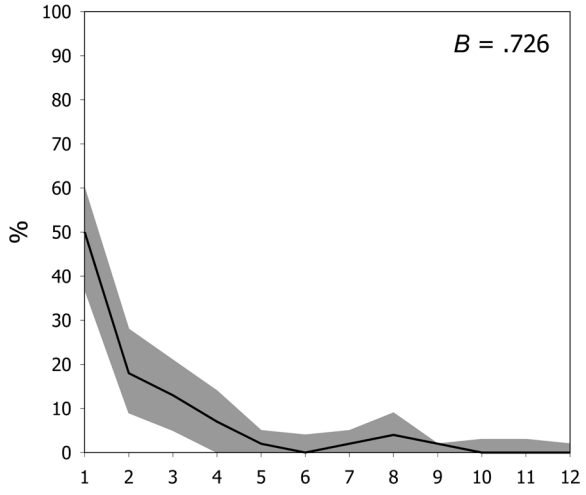


Figure 4.12. Centralization graph of Hongshan District 3 with error range for 90% confidence.

图 4.12 3 号红山文化行政区的集中化程度图以及对应 90% 置信度的误差区域

超地方性社区之间的关系

当然，与其它形式的交流和互动相比，社会政治的整合完全是另外一回事。作为一种考古学文化，红山文化显然代表了数十万平方公里内分布相当稀疏的人群之间的文化互动。这些人群拥有一些相同的风俗、信仰和习惯，在制作、使用和装饰陶器以及其它日常器物，建造房屋和储藏食物，埋葬死者，创建和使用宗教场所等方面有同样的风格。不过，所有上述方面并不能提供太多关于社会单元的政治或经济一体化的迹象。历史提供了许多例子，一些共享着上述特征的人群常常被分割成不同的社会政治实体；同时也提供了另外一些例子，一些高度一体化的政治实体缺乏文化上的统一。因此，虽然红山文化的分布范围广泛，但是并不意味着在如此大的空间尺度上实际存在着社会政治的一体化。但是，对于探讨面积几十平方公里和几百个居民的红山文化超地方性社区之间的社会和政治关系的本质是十分重要的。

在大凌河上游地区，2 号行政区拥有最多的居住人口，并且 2 号行政区内最大村落的人口比整个调查区域内其它任何村落的人口都要多。已经发掘过的东山嘴祭祀建筑就位于 2 号行政区内，但它并不在规模最大的村庄里。于是似乎可以想象，在整个调查区内存在一个 2 号行政区控制下的社会政治一体化，而且其范围可能更大。

我们用来研究行政区内部的一体化和集中化程度的方法同样适用于整个大凌河上游调查区。整个调查区的等级 - 规模图（图 4.13）得到的 A 值为 -0.253，这个结果一般被认为意味着整个区域体系内存在着相当程度的一体化。不过，90% 置信度下的误差范围很大，以至于等级 - 规模线在偏向正的（即“凸型”的）区域后，仍然可以在误差范围内。因此，对于这一结果，我们并没有多少统计学上的信心。与 2 号行政区相比，整个调查区域内系统整合的迹象明显弱得多。图 4.14 表明，相比 2 号或 3 号行政区，作为一个整体而言，调查区的集中化程度要低的多（B = 0.509）。上述结果不支持我们将大凌河上游调查区想象成为一个社会政治或者经济高度一体化的社会，但同样也不促使我们排除这种可能性。

当然，在这么近的距离内，大凌河上游地区红山文化超地方性社区（或行政区）的居民毫无疑问地会发生一定程度的互动。那些人群居住稀疏的过渡区域表明，相比行政区内部的互动，行政区之间的互动强度可能要减弱许多。过渡区域内人烟稀疏的情况更加强烈地打消了经济或社会政治的一体化发生在比单个的小型行政区更大的尺度上的想法。在任何形式的互动都需要借助脚力来完成的环境里，互动的成本的确倾向于将互动程度高（反映在经济或政治的一体化方面）的人口更加紧密地聚集在一起。在这种情形下，那些居住稀疏的过渡区域（至少是那些适宜居住的环境）将被聚落所填充，正如大凌河上游的那些过渡区域一样。而那些没有出现这种情形的地区则暗示着行政区之间的互动程度非常低，以至于无法让人将其与社会政治的一体化或者大量经济上的互换和依赖行为联系到一起。

最后，举行礼仪活动是中心地点最显著的功能之一，并且每一个行政区都有自己的礼仪设施。这基本上是所有行政区的共同特征。因此，每一个行政区都具有基本的祭祀功能。目前为止，大凌河上游调查区域内发掘过的红山文化公共建筑仅有东山嘴遗址一处，因此无法精确地比较不同行政区内此类建筑的规模和性质。假如 2 号行政区代表着一个很高程度的政治一体化，并统治着临近的行政区，那么 2 号行政区比临近行政区内的礼仪设施会更大、更宏伟、数量更多或者在性质上更加不同，但是我们所掌握的证据表明事实并非如此。然而不管怎么说，东山嘴遗址的礼仪设施的确具备某些特殊的重要性，我们稍后会对这一话题进行讨论。

目前为止，我们对更高程度的一体化的讨论局限在社会政治的层面，但相同的论证也适用于经济一体化，而经济的一体化是一个更加多层面的话题。在相邻的行政区之间，出现某些司空见惯的日常器物的大批量交换似乎是非常不可能的。首先，从全球的角度来看，广大的红山文化分布区具有自然环境同质化的特征。相邻的行政区通常拥有非常相似的可利用资源，所以不同地点生产不同种类物品的能力相差无几。更主要的是，红山文化分布区内的河流系统不能提供非常适合在交换体系中帮助运送货物的水路网络，所以货物的运输是经陆路依靠脚力完成，这是成本极高的一种方式。如果不同行政区的人群在经济上已经有相当程度的彼此依赖，强烈的现实需求会将他们吸引到一起，以最大程度地减小运输成本。因此，行政区之间存在人口稀少的过渡区就是不存在经济一体化的强有力证据。

在赤峰地区（赤峰 2011:111），调查区域的范围更大，使得大约 20 个红山文化的行政区被界定出来。

Relations between Supra-Local Communities

Sociopolitical integration is, of course, an entirely different thing from a variety of other kinds of communication and interaction. As an archaeological culture, Hongshan clearly represents cultural interaction among people spread (fairly sparsely) across hundreds of thousands of square kilometers. These people shared a number of customs, beliefs, and practices, including fashions of making, using, and decorating ceramics and other utilitarian artifacts, of building houses and storing food, of burying their dead, and of creating and using ritual spaces. None of these things, however, gives much indication of the political or economic integration of functional social units. History provides many examples of "peoples" who shared such characteristics but were divided into different sociopolitical entities, as well as examples of highly integrated political entities which lacked such a degree of cultural unity. The existence of a widespread Hongshan archaeological culture, then, cannot be taken to indicate real sociopolitical integration at such a large scale. It is, however, vital to inquire into the nature of social and political relationships between Hongshan supra-local communities with a few hundred inhabitants in a few tens of square kilometers.

In the Upper Daling region, District 2 is estimated to have the largest population, and the largest village in District 2 has the largest estimated population of any village in the survey area. The excavated Dongshanzui ceremonial structures are also in District 2, although not in its largest village. It is possible, then, to imagine larger-scale sociopolitical integration consisting of the domination by District 2 of the entire survey area, and perhaps a larger region beyond it.

The same tools we have applied to examine the degree of integration and centralization within districts can be applied to the Upper Daling survey area as a whole. The rank-size graph for the entire survey area (Fig. 4.13) yields an *A* value of -0.253, which would ordinarily be taken to indicate a fair degree of integration in a regional system. The error zone for 90% confidence, however, is wide enough that the rank-size line could easily stray into positive (convex) territory and still remain within the error zone, so we do not have much statistical confidence in this result. The whole survey zone clearly shows a considerably weaker indication of system integration than District 2 does. The centralization graph (Fig. 4.14) indicates that the survey area as a whole is substantially less centralized ($B = 0.509$) than either District 2 or District 3. These results do not encourage us to think of the Upper Daling survey zone as sociopolitically or economically well integrated, but they do not force us to rule out the possibility.

At such close distance, of course, the inhabitants of the Hongshan supra-local communities or districts of the Upper Daling region would unquestionably have interacted with each other to at least some degree. The sparsely occupied buffers between them, however, suggest that interaction between districts was at a much lower level of intensity than interaction within districts. The sparseness of occupation in these buffers more strongly discourages the idea of economic or sociopolitical integration encompassing a larger scale than a single small district. In a context like this where all interaction of any kind requires travel on foot, the cost of interaction does tend to draw populations with the high level of interaction implied by economic or political integration more closely together. In this case, sparsely occupied buffer zones would tend to fill in with settlement—at least ones environmentally capable of being occupied, as those in the Upper Daling region were. That this did not occur suggests a rather low level of interaction between districts—one too low to be consistent with sociopolitical integration or with substantial economic exchange and interdependence.

Finally, ceremonial activities are among the more conspicuous functions of the central places, and each district had its own ceremonial facilities. These were of basically the same character in all districts. Thus fundamental ritual functions seem to have been separately served within each district. Only at the Dongshanzui site has Hongshan public architecture been excavated in the Upper Daling survey area, so precise comparisons of the nature and sizes of structures in different districts are not possible. The indications we do have, however, do not suggest that such facilities were so much larger, grander, more numerous or qualitatively different in District 2, as might be expected if District 2 represented a superordinate level of political integration that subsumed neighboring districts as subsidiaries. It is nonetheless possible that ceremonial facilities at Dongshanzui did have some special characteristics of importance, a subject to which we will return below.

The discussion of higher-level integration has thus far been framed in sociopolitical terms, but much the same argument applies to economic integration as well, although economic integration is an even more multifaceted subject. High-volume exchange of goods of a quotidian utilitarian character between even neighboring districts seems very unlikely. In the first place, on the global scale of things, this is a region of relatively large-scale environmental homogeneity. Consequently neighboring districts mostly have very similar sets of available resources, so there is not often much difference in the potential for producing different kinds of goods in different places. For the most part, the river systems of northeastern China do not provide networks very propitious for facilitating transport of goods in systems of exchange, so transport would be overland on foot, and this is a notoriously costly means of transporting goods. If people in different districts developed much economic interdependence of any sort, there would be strong practical forces drawing them toward each other so as to minimize transport costs. So the presence of such sparsely occupied buffers between districts is an even stronger argument against economic integration.

In the Chifeng region (Chifeng 2011:111), the larger size of the regional survey area makes it possible to delineate some 20 Hongshan districts. With that larger sample,

有了这个更大的样本数量，我们可以清楚地观察到不存在更大尺度的空间模式（即多个社会政治或经济一体化的行政区围绕着更高级别的中心地点）。大凌河上游区域中那两个相当完整和另外两个可能不完整的行政区与赤峰地区观察到的模式十分吻合。它们有基本相同的空间范围，拥有相同种类的礼仪设施。赤峰和大凌河上游地区观察到的模式与下面的想法完全相符，即在红山文化分布的广大地区内，密集地分布着性质相似的社会政治单元，它们虽然超出了局部的尺度但规模仍然较小，在政治上各自独立，经济上基本自给自足。突出的礼仪建筑和与之相伴的精美墓葬表明某种程度的政治领导，极有可能是建立在宗教信仰和仪式角色之上 (Childs-Johnson 1991; Drennan 和 Peterson 2006; 郭 2006; 郭 1997a, 1997b; 李 2004, 2008; 吕 2001; Nelson 1991, 1994, 1995, 1996, 1997, 2002; Peterson 2006; 孙 2006; 滕 2006; 王 2006)。这些小规模的超地方性社会在尺度和复杂性上可以被划入通常称之为酋邦的范畴，出于比较的目的，我们将这样的行政区看作是红山文化的酋邦。不过，在使用酋邦这个词的时候，我们并非暗示红山文化社会必然拥有世界其它地方已知酋邦的全部特征，而是将其限定在我们讨论的范围内。

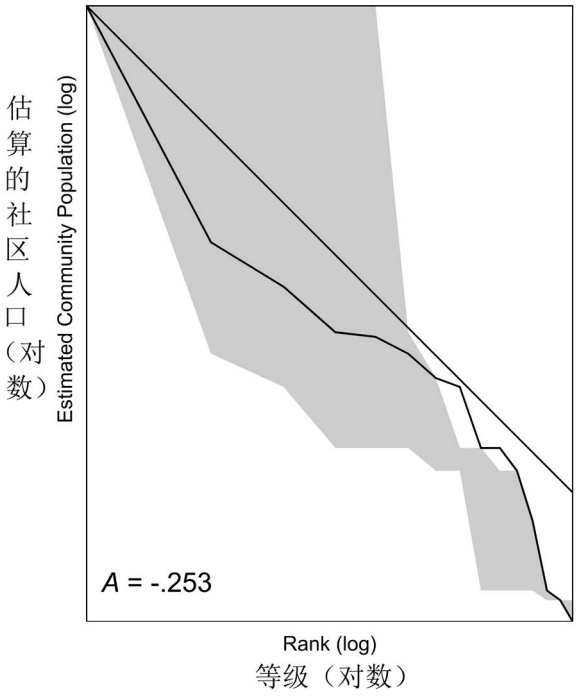


Figure 4.13. Rank-size graph of the entire Upper Daling survey area in Hongshan times with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 4.13 整个大凌河上游调查区域的红山文化等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

在类似大凌河上游或赤峰这样的地区，似乎没有人质疑红山文化时期存在超越几个相邻行政区的更大范围的，甚至是相当长距离的交换行为。通常用于制作装饰品的贝类跨越很长的距离，从遥远的沿海输送到内陆。红山文化中用来雕琢引人注目的玉器的玉料显然并非随处可得，因此一定存在着长途运输玉料的机制。少量物品的流动，尤其是用于制作奢侈品或象征意义物品的材料，可能会跨越很长的距离，并涉及一些非常不同的各自独立、自给自足的群体，但这些群体都没能形成任何形式的社会政治的一体化。更准确地讲，少量奢侈品或象征意义的商品在如此长距离的交换网络中所显示的一体化应当归于文化因素，而非经济因素。

与行政区内部的政治活动相同，行政区之间的互动可能在共同的宗教信仰和参加礼仪活动中占据重要地位。东山嘴遗址北部的石砌方坛和南部的圆坛为宗教活动中的大量参与者提供了宽敞的空间。在已经发掘的红山文化的礼仪设施中，这些遗迹是不常见的。它们可能与那些来自邻近甚至更远的行政区的人们所参与的仪式有关，从而产生了间歇性的、超越单个行政区的更大规模的区域性互动。由于大凌河上游区域其它行政区发现的公共建筑尚未进行发掘，我们很难进行比较分析，但那些地表痕迹表明，类似东山嘴的遗迹在这些行政区并不存在。东山嘴遗址没有随葬玉器的大型积石冢墓葬，表明在东山嘴遗址进行的礼仪活动并不包含对已故政治 - 宗教领袖的崇拜。相反，至少在一些仪式中，使用了孕妇形象的泥塑以及可能还有人牲，这可能表明了一种对丰产、生殖和自然崇拜主题的关注，并为大凌河上游及其周边地区的人群所共有。参与这种仪式可能是行政区之间一种主要的互动机制，包括那些远远超出相邻行政区范围的互动。考虑到所涉及的空间距离和地表聚落的分布，这种跨越行政区的礼仪模式的互动在程度上可能要远远弱于行政区内部的互动。频繁的礼仪互动可能在局部尺度领导权力和政治一体化的形成上扮演着主要角色。在更加遥远的地点举行的低频率的特殊仪式则很可能是文化一体化在更大的空间尺度上的主要表现方式。

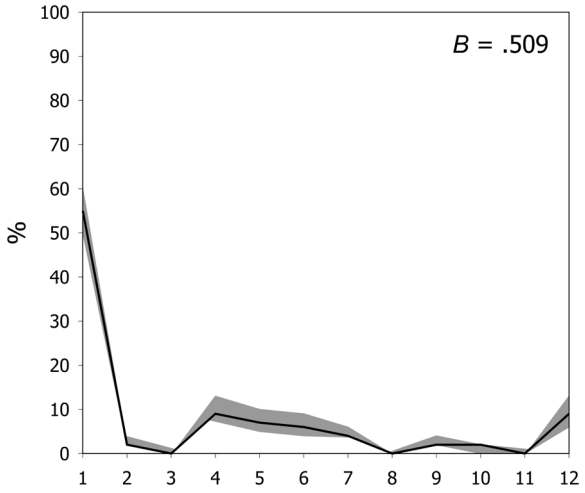


Figure 4.14. Centralization graph of the entire Upper Daling survey area in Hongshan times with error range for 90% confidence.

图 4.14 整个大凌河上游调查区域的红山文化集中化程度图以及对应 90% 置信度的误差区域

it is possible to see clearly the absence of the larger-scale spatial patterning that would correspond to the sociopolitical or economic centralization of multiple districts around a higher-level central place. The two fairly complete and two perhaps incomplete districts of the Upper Daling region would fit very comfortably into the pattern observed in Chifeng. They are in the same general size range; they have the same general kinds of ceremonial facilities. The patterns observed in both the Chifeng and Upper Daling regions, then, are entirely consistent with the idea that the large territory covered by the Hongshan culture was peppered with similar, repetitive, supra-local but still small-scale, politically autonomous, largely economically self-sufficient sociopolitical units. Ceremonial structures on a modestly monumental scale and the elaborate burials associated with them suggest a degree of political leadership, most likely grounded in religious belief and ritual roles (Childs-Johnson 1991; Drennan and Peterson 2006; Gu 2006; Guo 1997a, 1997b; Li 2004, 2008; Lu 2001; Nelson 1991, 1994, 1995, 1996, 1997, 2002; Peterson 2006; Sun 2006; Tang 2006; Wang 2006). These small-scale but supra-local societies fall in the general range of scale and complexity to which the label "chiefdom" has often been applied, and for general comparative purposes we do think of each of these districts as a Hongshan chiefdom. In using this term, however, we do not intend to imply that Hongshan societies necessarily shared with chiefdoms known for other parts of the world any additional characteristics beyond those we have already described.

At a larger scale than groups of neighboring districts within a region like Upper Daling or Chifeng, no one seems to doubt the existence of some degree of exchange, even at fairly long distance in Hongshan times. Shell, usually put to ornamental uses, arrived considerable distances inland from the coast. Sources of jade for the carvings for which the Hongshan archaeological culture is particularly noted are by no means ubiquitous, so some mechanism existed for moving this material over long distances. Such movement of small quantities of goods, especially of materials of luxury use or symbolic significance, though, is notoriously able to span long distances and include remarkably disparate independent, self-sufficient groups lacking any form of sociopolitical integration at any scale even remotely approaching the distance over which such goods are moved. The kind of integration indicated by such long-distance networks of exchange of small quantities of luxury or symbolic commodities is more accurately characterized as cultural than economic.

Interactions between districts may, like their internal politics, have had an important place for shared religious beliefs and participation in ritual activities. The double enclosure formed by stone walls associated with circular stone piles and low small circular platforms of the excavated structures at Dongshanzui would have created an open space in which large numbers of participants in religious activities could have gathered. These features are unusual among excavated Hongshan ceremonial facilities. They might be related to rituals attended by people from neighboring districts or even farther away, providing for intermittent interaction across larger regions than a single district. The surface traces of public architecture from other districts in the Upper Daling region do not suggest the presence of these features, although the comparison is difficult because none of them have been excavated. Conspicuously absent from Dongshanzui are large platform graves containing jade artifacts, which suggests that the ritual activities that took place at the Dongshanzui site did not include the veneration of deceased politico-religious leaders. The use of figurines of pregnant women, and perhaps also of human sacrifice, in at least some of these rituals, may instead indicate a concern with broader themes of fertility, fecundity, and nature worship shared by all Hongshan inhabitants of the Upper Daling region and beyond. Participation in such rituals could have been a major mechanism of interaction between districts, including at distances going well beyond just neighboring districts. Given the distances involved and the distribution of settlement on the landscape, such interaction in a ritual mode would clearly have been of considerably less intensity than that carried out within districts. Frequent ritual interaction seems likely to have played a major role in leadership and *political* integration at the local scale; much less frequent participation in special rituals at a variety of more distant locations may well have been the major means of *cultural* integration at a much larger scale.

Trajectory of Development and Decline

The Hongshan period is 1500 years long, and this poses obvious challenges to archaeological interpretation, particularly as regards delineating a trajectory of development for these societies. Within this period radiocarbon dates are

发展和衰退的轨迹

红山文化延续了 1500 年之久，这显然对从考古学上解释红山文化提出了挑战，尤其是对红山文化社会发展轨迹的阐释。红山文化的碳十四测年数据不是很多（参见第二章）。从牛河梁遗址积石冢获取的几个测年数据大多落在红山文化中间的五百年，至少有一个数据落在最后的五百年。从地层关系来看，在属于中间五百年的积石冢之下还叠压着更早的积石冢。这些明确的考古学证据表明，红山文化的酋邦似乎开始于红山文化的早期，并一直延续到末期。

东山嘴祭祀建筑遗址唯一的碳十四测年数据同样落在中间的五百年。属于红山文化非常早的碳十四测年数据来自于东山嘴地区探方 XD/XL 中的灰坑（距离祭祀建筑约 200 米，参见第三章）。这表明在东山嘴祭祀遗址所在的区域，地方性社区在红山文化的最初阶段就已经存在了。对东山嘴祭祀建筑旁边采集陶片的释光测年数据显示，这一地区可能在公元前 4000 年就已经有人居住，最晚可能一直延续到公元前 2000 年（参见第二章）。上述迹象表明，这个地方性社区以及围绕它的更大的行政区存在的时间非常长，从红山文化的初期延续到公元前第三千纪，这通常被认为已经进入到小河沿文化。我们不知道在这个地方性社区的初期是否已经存在任何的礼仪设施，但是到了中期（中间的五百年），这些设施的确已经出现了。

3 号行政区展现了一幅截然不同的画面。3 号行政区仅有的红山文化的碳十四测年数据来自于二布尺地区探方 XK 中的灰坑（参见第三章）。事实上，测年结果落在了红山文化的结束时间之后，即公元前 3000 年至公元前 2000 年这个时间段，通常被划归小河沿文化。在大凌河上游调查区域，仅获得 122 个小河沿文化的陶片（采集陶片总数为 20248）。这 122 个陶片来自 44 个采集单位，共计覆盖面积为 9 公顷（图 4.15）。根据如此少量的遗存计算，整个调查区域内小河沿文化的居民数量仅为 50 至 100 人，其中 2/3 的人口分布在 3 号行政区内，大多数在二布尺地区及另外一个村落。

对小河沿文化聚落遗存的解读一直十分困难。纵观整个东北地区，发现小河沿文化陶片的遗址数量非常少。蚌河下游流域调查仅在 4 处遗址发现了小河沿文化的遗物，比新石器时代早期的兴隆洼或赵宝沟文化的陶片数量还少（李 2008）。赤峰区域调查得到了相似的结果，共获得 435 个小河沿文化的陶片，仅占陶片总数的 0.6%（赤峰 2011）。仅从表面数字看，整个中国东北地区的宏观景象以及大凌河上游和赤峰地区的调查结果表明，小河沿文化的人口遭遇了毁灭性的减少。的确，之前已有学者（例如：李 2008；Liu and Feng 2012）提出，恶化的气候导致该地区几乎被完全放弃。然而，这种情况似乎不可能发生。即使毁灭性的人口骤减可能存在，这种现象也是极其少见的。对于那些指示这一现象的证据，我们需要格外仔细地加以检验。任何足以对人口数量造成影响的气候变动势必会遗留下清晰和一致的古气候方面的证据。但是，中国东北地区在公元前 3000 年左右的古气候数据十分不清楚，造成了对气温或降水量幅度的令人困惑和互相矛盾的解读（滕和 Shelach 2011）。这本身就是一种证据，表明当时并没有足够的气候变动可以对人口数量产生那么大的影响。此外，小河沿文化陶器中最具特色的精美陶豆以及将它们作为陪葬品随葬的多处墓葬（辽宁和赤峰 1998；内蒙古 2010b），都与那种少数残留的人群在恶劣的环境变化中勉强求生的画面不相一致。

另一种可能性是，现有的陶器类型学仅能鉴别公元前 3000 年至公元前 2000 年这一时期生活陶器的一部分，根据目前认定的小河沿文化陶片数量不能完全反映当时的人口数量。在这样的背景下，对小河沿文化陶器的认识在很大程度上依赖墓葬中的器物（辽宁和赤峰 1998；内蒙古 2010b；索和李 2006，2008），这种做法让人担忧。虽然对其它时期陶器的描述同样依赖于墓葬器物，但是，那些从居住遗址出土的其它时期的遗物能够帮助人们推测陶器的特征，来用于对区域聚落研究中的地表采集陶片进行分析。然而，关于小河沿文化居住遗迹的大多数地层信息仅仅来自两个遗址，即南台地和雪山（韩 2003；索和李 2009），后者所处的位置并不在通常所认为的小河沿文化的分布区内，并且是一处多个文化混合堆积的遗址。因此，相比其它时期，我们对小河沿文化日常陶器的认知要局限的多。不过，考虑到已知小河沿文化墓地的数量，在公元前 3000 年至公元前 2000 年这一时期内，一定存在着比考古学家已有认识多出很多的居住遗迹。问题可能在于，当遇到这些遗迹的时候，我们是否有能力将它们正确地鉴别出来。

我们可以自问，当缺少公元前第三千纪日常生活陶器的详细信息时，一些这样的陶片是不是在大凌河上游区域调查采集遗物的分析中被归为无法分类，从而实际上被隐藏起来呢？在大凌河上游调查所得的陶

not numerous (Chapter 2). Several dates for ceremonial platforms at Niuheliang fall in the middle third of these 1500 years. At least one is in the last third, and other ceremonial platforms are stratigraphically below those dated to the middle third. The kind of ceremonial architecture, then, that provides the most conspicuous archaeological indication of Hongshan chiefdoms appears to at least have its beginnings in the earlier part of the period and continue right through to the end of it.

The single radiocarbon date for the Dongshanzui excavated ceremonial architecture falls in the middle third of the period as well. Radiocarbon dates from very early in Hongshan times came from the pit feature excavated in Test XD/XL (Chapter 3) in the Dongshanzui area (at a distance of some 200 m from the platform). This suggests that the local community in which the Dongshanzui ceremonial platform was built had existed from very early in Hongshan times. Luminescence dates for ceramics immediately adjacent to the Dongshanzui excavated ceremonial structures suggest that this area was utilized from before 4000 BCE until perhaps as late as 2000 BCE (Chapter 2). This local community and possibly the larger district around it, then, show evidence of an occupation of very long duration, extending from the beginning of Hongshan times right on through the third millennium BCE, which is ordinarily assigned to the Xiaoheyan period. We do not know whether there were any ritual facilities in this community at its beginning, but by the second third of the period there were.

District 3 presents a rather different picture. The only radiocarbon dates for Hongshan occupation in District 3 are those from the pit feature excavated in Test XK in the Erbuchi area (Chapter 3). The dates actually fall after the end of the Hongshan period, during the 3000–2000 BCE span assigned to the Xiaoheyan period. In the Upper Daling survey area, Xiaoheyan sherds recovered totaled only 122 (out of 20,248 sherds). These sherds came from 44 separate collection units that covered a total area of 9 ha (Fig. 4.15). This small quantity of remains produces a population estimate of only 50–100 inhabitants for the entire survey area. Of this small estimated number of inhabitants, fully two-thirds are within Hongshan District 3, mostly in Erbuchi and one other village.

Interpretation of Xiaoheyan settlement remains has always been extremely difficult. Sites where Xiaoheyan ceramics have been identified are extremely scarce all across northeastern China. A survey of the Lower Bang valley reports Xiaoheyan materials at only four sites, fewer than produced sherds of either Xinglongwa or Zhaobaogou periods there during the early Neolithic (Li 2008). Results from the Chifeng regional survey are similar; the 435 Xiaoheyan sherds recovered are only about 0.6% of the total (Chifeng 2011). Interpreted at face value, the general picture across northeastern China as well as survey results for both the Upper Daling and Chifeng regions indicate a Xiaoheyan population decline of catastrophic proportions. Indeed, it has previously been suggested that deteriorating climate caused a near complete abandonment of the region (e.g. Li 2008; Liu and Feng 2012). This, however, seems unlikely. While such devastating demographic declines are not impossible, they are extremely unusual; evidence suggesting such a thing should be carefully examined. Any climatic shift of sufficient magnitude to have the demographic consequences imagined would certainly have left clear and consistent traces in the multiple lines of paleoclimatic evidence available. But the paleoclimatic data for around 3000 BCE in northeastern China are particularly unclear. They provide confusing and conflicting indications of the direction and magnitude of any change in temperature or precipitation (Teng and Shelach 2011). This in itself is evidence that there was no climatic shift sufficient to have the dramatic demographic impact attributed to it. Moreover, the elegant pedestal vessels that comprise the most characteristic Xiaoheyan ceramics, and the elaborate multiple burials in which they were placed as offerings (Liaoning and Chifeng 1998; Neimenggu 2010b), are inconsistent with the image of a tiny, remnant population attempting to eke out a living in the face of inhospitable environmental change.

A different possibility is that current ceramic typologies recognize only a portion of the sherds of the domestic assemblages of the period from 3000 to 2000 BCE, and that counting Xiaoheyan sherds, as currently defined, is not a full representation of the population of that millennium. In this context, it is worrisome that to a very large extent Xiaoheyan ceramics are known from vessels recovered in burials (Liaoning and Chifeng 1998; Neimenggu 2010b; Suo and Li 2006, 2008). The description of ceramics for other periods has also relied heavily on grave offerings, but for other periods materials recovered from residential sites have made it possible to extrapolate the characteristics needed for the analysis of sherds recovered from the surface in regional settlement study. Most of the available stratigraphic information about Xiaoheyan residential remains, however, comes from only two sites, Nantaidi and Xueshan (Han 2003; Suo and Li 2009), the latter of which is actually located outside the area traditionally ascribed to the Xiaoheyan culture, and yielded mostly mixed deposits. Our knowledge of utilitarian ceramics is thus much more limited than for other periods. Given the number of Xiaoheyan cemeteries that are known, however, there must be a larger amount of habitation remains dating to this period between 3000 and 2000 BCE than archaeologists have thus far recognized. The problem could lie in our current ability to properly identify these remains when we encounter them.

We can ask ourselves whether, in the absence of full information about domestic ceramics from residential contexts of the third millennium BCE, some such sherds are in effect "hiding" from our analysis as unclassified sherds from the Upper Daling regional survey collections. Of the sherds recovered by the Upper Daling survey, 517 (3%) could not be classified as to period. Even if every single one of these sherds actually dated to between 2000 and 3000 BCE, however, there are not enough of them to repre-

片中，有 517 个陶片（占全部陶片的 3%）无法被划分到具体的时期。然而，即便这 537 个陶片全部属于公元前 3000 年到公元前 2000 年这一时期，它们所代表的人口也不过是红山文化人口的极小一部分，不足以反映遗失的人口数量。将所有 517 个陶片加入到已识别的小河沿文化陶片中，对公元前第三个千年中的人口数量进行估算，结果仍然显示出一个毁灭性的人口骤减。非常重要的是，未识别陶片的属性排除了上述想法。517 个陶片中，仅有很少的一部分具备可以鉴别的特征，但是不能确定归属于哪个具体的时期，大多数是细小的、被腐蚀到无法辨认出特征的残片。如果大量的陶片无法识别是因为它们属于公元前 3000 年至公元前 2000 年的不被认识的陶器类别，这种情况是不可能的。公元前第三千纪中极低的人口数量是不能照这样解释的。

在这样的情况下，二布尺地区探方 XK 灰坑的陶片和碳十四测年数据（参见第三章）就非常有意思。灰坑堆积最下面的两个测年数据一致，并且明确地落在通常划定为小河沿文化的时间跨度里，然而，灰坑内的陶片却几乎全部属于红山文化。红山文化的陶片并非来自灰坑的最底部，其上面叠压着小河沿文化的陶片。红山文化和小河沿文化的陶片在灰坑的堆积中自上而下一直共存。虽然仅仅是一处遗迹，但可能暗示着在公元前第三千纪的早期阶段，家庭陶器组合一方面延续了红山文化的特征，同时新增加了一些小河沿文化的典型特征。4 个来自东山嘴遗址并被判断为红山文化陶片的释光测年数据（参见第二章）正好落在公元前 3000 年或稍后的时间点上，这一事实支持了一个推测，即许多被鉴定为红山文化的陶片也许属于小河沿文化。小河沿和红山文化的陶片经常在同一遗址中共存，并且彼此的地层并无明显的区别，清楚地表明这种情况并非是两个考古学文化在同一地区共存的结果。有种见解认为公元前第三千纪中的陶片继承了红山文化陶片的特征，有时候还结合了一些更容易被认为是小河沿文化的特征。这一见解与以下事实相符，雪山遗址出土一些有图案的小河沿文化陶器，与红山文化的同类器非常相似。看起来，在分析区域调查的采集物时，许多这类陶器的陶片，尤其是地表采集获得的那些细小残片，很可能被判断为红山文化。

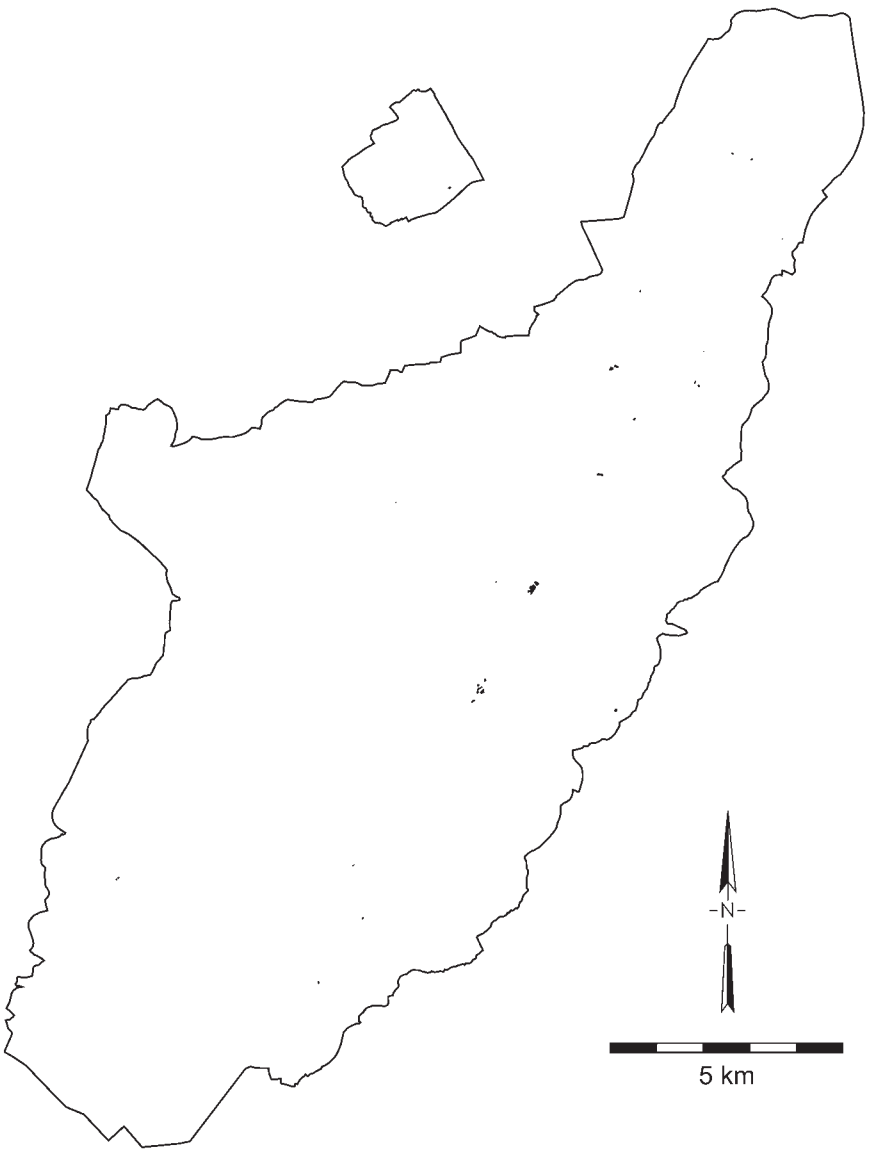


Figure 4.15. Distribution of collection units with Xiaoheyan period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

图 4.15 小河沿文化陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

与公元前第三个千年有关的另外一个问题涉及到夏家店下层文化的起始时间。正如第二章提到的那样，本报告的分析采用了普遍认可的公元前 2000 年作为小河沿文化的结束时间和夏家店下层文化的起始时间。然而，目前碳十四测年数据

sent a missing population even a tiny fraction the size of the estimated Hongshan population. Adding all these sherds to the identified Xiaoheyan sherds to make a population estimate for the third millennium BCE would still leave us with a catastrophic demographic decline. Most important, the nature of the unidentified sherds precludes this interpretation. Very few of them have recognizable features that just fail to fit into any known type; rather, they are mostly tiny, eroded fragments whose characteristics cannot be discerned. This would not be the case if a substantial number of sherds were unidentified because they comprised a hitherto undescribed ceramic class for 3000–2000 BCE. The extraordinarily low apparent population for the third millennium BCE cannot be explained away in this fashion.

The ceramics and radiocarbon dates from the pit feature in Test XK in the Erbuchi area (Chapter 3) are especially intriguing in this context. The two dates from well down in the pit fill are consistent and clearly in the time span usually assigned to Xiaoheyan, but the ceramics from the pit are mostly Hongshan. The Hongshan sherds are not from the very bottom of the pit, overlain by Xiaoheyan ceramics. Sherds of both periods come from both upper and lower portions of the fill in the pit feature. This is only one feature, but it could be a suggestion that the domestic ceramic assemblage dating to the earlier part of the third millennium BCE consists of a combination of sherds that continue the characteristics of Hongshan domestic ceramics with the addition of some other attributes readily recognizable as Xiaoheyan. The fact that fully half the eight luminescence dates for sherds from the Dongshanzui site classified as Hongshan (Chapter 2) fall at or after 3000 BCE adds support to the suggestion that perhaps substantial numbers of sherds classified as Hongshan actually pertain to the time period assigned to Xiaoheyan. That Xiaoheyan and Hongshan sherds regularly co-occur in the same sites without clear stratigraphic separation makes it clear that this situation is not that of two archaeological "cultures" occupying the same region contemporaneously. The notion that ceramics of the third millennium BCE continued to have "Hongshan" characteristics that sometimes did and sometimes did not combine with characteristics more readily recognizable as Xiaoheyan is consistent with the fact that some illustrated Xiaoheyan ceramics, such as those from Xueshan, include vessels with strong similarities to earlier Hongshan ones. It seems likely that many sherds from such vessels, particularly small ones like those obtained from surface collections, would be labeled Hongshan sherds in analyzing materials from regional survey.

An additional related concern about the third millennium BCE is the date assigned to the beginning of the subsequent Lower Xiajiadian period. As noted in Chapter 2, the analyses presented in this volume have used the commonly accepted date of 2000 BCE for the end of Xiaoheyan and the beginning of Lower Xiajiadian. The pattern of radiocarbon dates now available, however, suggests that this dividing line might well be more accurately situated some 250 years earlier, in 2250 BCE, shortening the time span allotted to Xiaoheyan by one-fourth. This idea is, however, countered by the very late luminescence dates for Hongshan sherds from Dongshanzui.

If any of these suggestions were to be confirmed eventually by the accumulation of additional evidence, it would have implications for our understanding of the relationship between District 2 and District 3. Even though this cannot be confirmed at present, it is worth exploring these implications as hypotheses to guide future research. The population estimates and all the rest of the analysis presented thus far in this chapter are calculated on the basis of stasis through the entire 1500 years of the Hongshan period. This is, of course, an oversimplification—settlements undoubtedly shifted their locations during the course of this 1500 years, resulting in some being abandoned and other new ones founded. This possibility is not really lost in the analysis, however. It is present in the role played by the densities of remains. Low densities could mean very sparse populations, or shorter spans of occupation, or both. The population estimates we have used, based as they are on both area and density of surface scatters and on lengths of periods, must thus be taken as averages through the time period involved. An estimate of 100 inhabitants for a Hongshan community, then, should be taken as an estimate of the average population of that community through the entire Hongshan period. If it could be determined that the community only existed through half the span of the Hongshan period, then the population estimate means an average of 200 inhabitants during the time it was occupied and 0 for the other half of the period.

In returning, then, to districts 2 and 3 and their relationship to each other, the implications of the current imprecise chronological control for the region must be considered. Up until now we have considered relationships between the districts in static terms, as if both were occupied throughout the Hongshan period. As noted above, however, it would be consistent with the radiocarbon and luminescence dates currently available to consider the possibility that settlement in District 2 began very early in Hongshan times, and continued right on through the third millennium BCE. District 3, on the other hand might have come into existence only late in Hongshan times and then persisted into the third millennium BCE, consistent with the particular concentration of identified Xiaoheyan sherds there.

This would, in the first instance, affect the estimated populations of the districts. The estimated average across 1500 years of 450–900 inhabitants for District 2 might change. At its most drastic extreme, this change could mean an estimated average of 300–600 across, say, 2250 years. We could also consider basing the District 3 population estimate on a span that begins at 3250 BCE and ends sometime before an earlier placement of the beginning of Lower Xiajiadian in 2250 BCE, say 3250–2500 BCE. All the sherds classified as Hongshan and Xiaoheyan, then, would be considered as representing occupation of this span. The result would be an estimate of the District

的规律表明，这一分界线如果向前提早大约250年，也就是公元前2250年可能更加准确，这样小河沿文化的时间跨度就缩短了约1/4。不过，东山嘴地区红山文化陶片非常晚的释光测年结果不支持这一想法。

随着更多证据的积累，如果上述任何推测最终被证实是对的，它将有助于我们理解2号和3号行政区的关系。即便目前无法证实这些推测，将它们作为理论假设并指导未来的研究，也是一件值得探索的事情。到目前为止，本章中的人口估算和所有其它分析都建立在将红山文化延续的1500年看成是静态整体的基础上。这当然是对问题的一种简单化处理，在这1500年中，聚落位置显然在不断变换，导致一些旧的地点被遗弃，随之又形成另外一些新的地点。不过，在分析中，我们并没有忽略任何可能性。在分析遗物密度的时候，就将其考虑在内了。低密度可能意味着非常稀疏的人口，或者更短的定居时间，或者两者皆有可能。我们所采用的人口估算方法建立在地表遗物分布的面积、密度以及时间跨度的基础上，因此，估算结果必须被看作是考古学文化延续时间的平均数值。如果一个红山文化社区估算的人口为100，这应当被理解为是该社区在整个红山文化时期的平均人口数值。如果我们可以确认该社区存在的时间仅为红山文化延续时间的一半，那么，该社区平均的人口就应为200。

回到2号和3号行政区以及它们彼此的关系问题上，我们必须将目前这种不精确的年代框架问题考虑在内。到目前为止，我们已经从静态的角度探讨了这两个行政区之间的关系，似乎它们存在的时间都贯穿了整个红山文化。然而，正如上面提到的，2号行政区的聚落可能形成于红山文化的早期，并且一直延续贯穿了公元前的第三个千年，这种可能性与碳十四和释光测年的数据相一致。而3号行政区可能直到红山文化的晚期才开始形成，然后一直延续到公元前第三个千年，这与其含有的尤为密集的小河沿文化的陶片相一致。

首先，这将影响到对行政区居住人口的估算。2号行政区在1500年中平均450至900个居民的结论将可能改变。在最极端的情况下，这种变化可能是在2250年的时间里平均居住人口是300至600人。我们同样可以根据3号行政区的时间跨度估算其人口数量，该区始于公元前3250年，结束于稍早于夏家店下层文化的起始时间（公元前2250年），相当于从公元前3250年到公元前2500年。那么，所有被鉴别为红山和小河沿文化的陶片将被认为是反映着这一时期的居住情况，经过计算，在750年的时间里，3号行政区平均居住了350至700人。虽然3号行政区的发展可能受到旁边2号行政区的影响，但它形成于红山文化，并延续贯穿到小河沿文化，这样的认识与前面叙述的考古证据相吻合。

我们并非要争论说后一种推测一定是对的。不过，它的确提供了一种更加实际和动态的视角去看待大凌河上游地区酋邦间可能存在的关系。这种更加实际和动态的观点是未来的研究应该努力为之的。后一种关于发展和衰退的理论假设与很小样本量的碳十四和释光测年数据一致，并帮助我们从现实的人类学角度理解小河沿文化陶片如此稀少的原因。必须承认的是，它与筒形器类型的年代序列并不十分相符。对于在牛河梁遗址的发掘，区分礼仪建筑中包含的较早和较晚的筒形器的口沿和底部是可能的，虽然很难精确地指明较早和较晚究竟对应测年学上的什么术语。3号行政区发现了大量早期的筒形器残片，而2号行政区的筒形器残片几乎都是晚期的形式。我们对已经提出的这些行政区发展和衰退的假设也因此产生了疑惑。讨论这种假设的意义在于可以促使我们的思维从一个非常静止的重构转向一个更加动态的版本，要更好地理解创造和终结这些行政区的社会变化的过程，就必须建立动态的重构。要想在这个方向上取得进步，能够产生更加精确的年代框架的创新性研究将扮演非常重要的角色。

本章中，我们从一个最简单和静态的推测开始，即红山文化与小河沿文化是清楚可辨并彼此区分的。首先，我们分别探讨了二者在整个文化期内人口的平均数量。真实情况肯定比这个更加复杂，但无论如何，我们必须选择一个研究的起点。地方性社区和行政区的人口数量因时间变化而变化，它们的最大人口数量将比我们本章中多个地方提到的估算数值要高。然而，无论假设的情况如何变化，重建的结果始终是一些小型的和自治的红山文化的酋邦组织。有可能这样的政治组织不仅是公元前4500年至公元前3000年的红山文化的特征，它同样延续到了公元前3000年以后。对于发生在公元前第三千纪的情况，我们可以做出如下的想象：小型酋邦逐渐衰退，区域人口以不明程度下降，夏家店下层文化以截然不同的文化、宗教、政治和经济动力开始逐渐发展。当然，如此的想象可能让我们严重地步入歧途。只有当更准确的红山文化和小河沿文化的年代框架以及公元前第三千纪更加丰富详细的家庭遗迹出现时，我们才会知道究竟是哪一种情况。

3 population of 350–700 inhabitants, on average, across this 750 years. This view of District 3 as developing early in Hongshan times, and persisting through what are usually labeled Xiaoheyan times, although perhaps shrinking alongside a growing District 2, is just as consistent with the actual evidence as the static one we have sketched out earlier in this chapter.

We do not argue that this latter suggestion is necessarily correct, but it does offer a more realistically dynamic view of the possible relationships between chiefly polities in the Upper Daling region—the kind of more realistically dynamic view future research should strive toward. This latter hypothetical scenario of development and decline is consistent with a very small sample of radiocarbon and luminescence dates, and helps us to make more realistic anthropological sense of the scarcity of sherds identified as Xiaoheyan. It must be admitted that it does not fit well with some indications of the chronological placement of *tongxingqi* sherds. For excavations at Niuheliang it is possible to distinguish between earlier and later examples of rim and base sherds of these ceramic cylinders that were incorporated into ceremonial structures, although it is difficult to pin down exactly what "earlier" and "later" are equivalent to in chronometric terms. District 3, however, did yield a substantial number of earlier *tongxingqi* sherds, while almost all the *tongxingqi* sherds from District 2 were of the later variety. This raises doubt about the growth-and-decline scenario for these districts we have imagined. The point of discussing that scenario at all is to push our thinking forward from a very static reconstruction to the more dynamic vision of these districts that will be needed in order to understand better the processes of social change that produced them and brought them to their end. Innovative research that yields more precise chronological control will have a vital role to play in progress in this direction.

We began this chapter with the simplest and most static assumption: that the Hongshan and Xiaoheyan periods were clearly recognizable and separate. And we initially discussed the population for each as an average number spread across the entire span of each period. The real story is almost certainly more complicated than this, but one has to start somewhere. To the extent that local community and district populations varied over time, their maximal populations would be larger than the estimates we have worked with through most of this chapter. Under any plausible set of assumptions, though, the reconstruction of small, autonomous, Hongshan chiefly polities is supported. It is possible that such political organization characterized not only the Hongshan period between 4500 and 3000 BCE, but also continued beyond 3000 BCE as well. We might imagine for the third millennium BCE the gradual political decline of small chiefly polities, regional population decline of unknown magnitude, and the beginning of the development of the rather different cultural, religious, political, and economic dynamics of Lower Xiajiadian societies. In imagining this, we might, of course, be going badly astray. We will not know which until there is better chronological control for Hongshan and Xiaoheyan times and more abundant documentation of third millennium BCE household remains.

Core and Periphery

Finally, the reconstruction of sociopolitical organization in the Hongshan core zone, as represented in the Upper Daling region, does not sound dramatically different from what has previously been suggested for the Chifeng region in what we have called the periphery, where monuments were less impressive and scarcer. The two surveys substantiate the impression that the Upper Daling region pertains to the core zone of monument construction, while public architecture is smaller and scarcer in the Chifeng region. Surface traces of Hongshan ceremonial architecture are at least 10 times more abundant in the Upper Daling region. Despite the disparity in ceremonial construction, Hongshan period demography and communities in the Upper Daling and Chifeng regions are quite similar.

Small chiefly polities occurred in both regions. The largest local communities in both regions had populations in the low hundreds (as estimated on average across the 1500 years of the Hongshan period). The Chifeng survey area is six times larger, so it is not surprising that it had five communities in this size range compared with the one in the Upper Daling region. The majority of local communities in both regions were farmsteads of one or two families. The population distribution in Chifeng tilts slightly more toward larger communities, with 59% of the estimated population in settlements larger than 50–100 (compared to 48% for Upper Daling). Chifeng districts seem a little smaller both spatially and demographically than the largest district in Upper Daling, at 3–5 km across and ranging up to a maximum population estimate of 400. Several Chifeng districts, however, were larger than the second largest in Upper Daling. The estimated population density of 4–8 persons/km^2 in the Upper Daling survey area is twice that of Chifeng, at 2–4 persons/km^2. Given the approximate nature of these estimates, however, and the fact that the Upper Daling survey area comprises a zone more tightly delineated around prime agricultural land, one should not read too much into this difference.

It is accurate to describe both regions, then, as characterized by small chiefdoms, numbering in the hundreds of inhabitants, and occasionally into the very low thousands. Their territories amounted to some tens of square kilometers, and they were consistently separated by sparsely occupied buffers that suggest that social interactions were much more frequent and intensive within districts than between them. Although there are disparities in population sizes between districts in both the Upper Daling and Chifeng regions, no one district stands out as enough larger than others to suggest a center of political integration of multiple districts in the mode of a paramount chiefdom dominating other subordinate chiefdoms politically or economically. At least some of the apparent disparities of

核心区与周边区

最终，重建后的红山文化核心区的社会政治组织（正如大凌河上游区域展示的那样）与我们之前对赤峰地区（礼仪建筑分布稀疏且普通，称之为周边区）的推测并没有什么显著差别。这两个地区的调查验证了一个印象，即大凌河上游地区属于礼仪建筑的核心区，而在赤峰地区，礼仪建筑的规模小并且数量少。大凌河上游区域红山文化礼仪建筑在地表的可见密度比赤峰地区高出十倍还多。在红山文化时期，两个地区虽然在礼仪建筑方面存在显著差异，但它们的人口数量和社区却非常相似。

在两个地区都出现了小型的酋邦。根据估计，整个红山文化约 1500 年的时间中，两个地区规模最大的地方性社区所拥有的平均人口不过是几百人。赤峰调查区的面积比大凌河上游调查区的面积大六倍，因而赤峰地区发现五个这样大的社区，而大凌河上游地区仅有一个，所以这个结果并不奇怪。两个地区的大多数地方性社区都是由一两个家庭组成的农庄。赤峰地区的人口稍微倾向于分布在规模更大的社区中，59% 的估算人口分布在拥有超过 50 至 100 人的聚落中，而在大凌河上游地区，这一比例为 48%。从空间范围和人口数量看，赤峰的行政区似乎比大凌河上游最大的行政区要稍小一些，横跨 3 至 5 公里，最大估算人口数量为 400 人。不过，赤峰地区的好几个行政区比大凌河上游地区第二大行政区要大。据估计，大凌河上游调查区域的人口密度为 4－8 人 / 平方公里，是赤峰地区（2－4 人 / 平方公里）的两倍。考虑到这些估算结果在本质上十分相似，并且大凌河上游调查区域包括一处围绕上等农田密集利用的区域，读者不应当对这些差异作过度的解读。

对这两个地区的准确描述应当是：以小型酋邦为特征，居住人口以百数计，偶尔达到几千人。它们的地域达到几十平方公里，彼此间始终被一些人口稀疏的过渡区分隔开，行政区内部比行政区之间的社会互动更加频繁和密集。虽然大凌河上游地区和赤峰地区的行政区在人口数量上存在差异，但是，没有一个行政区的规模大到足以证明存在着一个众多行政区的政治一体化的中心，即一个有着至高权力的酋邦通过政治或经济的方式统治着其余的附属酋邦。假如更加精确的年代框架能够帮助我们更充分地了解这些小型酋邦在不同时期的兴盛和衰亡，那么，至少可以消除一部分显著的人口规模的差异。

以礼仪建筑的密集程度和规模来讲，大凌河上游区域比赤峰地区更加发达，这与我们所预期的一致。不过，这种对于公共设施更大力度的投入并非是更广泛的社会政治一体化的结果。无论是以地方性或以超地方性的尺度而言，两个地区的社区模式都是非常相似的。同样地，这种对于公共设施的投入也并非是因为大凌河上游区域在更加富饶的环境中拥有更多和更加密集的人口数量所致。两个地区在人口密度上并没有任何有意义的差别，估算出的人口数量都异常地低，以两个地区生产食物的能力来看，这个结果远远低于预想的数值。有可能大凌河上游的社区存在更加明显的社会不平等，在财富累积方面有更大的差异，或者具备更深度的生产专门化，并且这些与表现更加强烈的礼仪建筑有关联。社区内部家庭之间关系的这些方面将带领我们超越本报告的范围来理解区域尺度上的聚落数据。在即将出版的关于东山嘴、三家和二布尺地区的密集性地表采集的报告中，我们将在地方性社区内部的单个家庭的尺度上作更加详细的研究，以及在更小的尺度上讨论社会角色、地位、财富和生产行为的差异。

demographic scale would diminish if greater precision of chronological control enabled us to take adequately into account the asynchronous waxing and waning of these small chiefdoms.

The Upper Daling region was more "developed" in terms of the abundance and scale of ceremonial architecture than the Chifeng region, as expected. This substantially greater investment in public works was not, however, the product of more extensive sociopolitical integration. At both local and supra-local scales, community patterning in the two regions was very similar. Nor did this discrepancy in investment in public works result from a substantially larger, denser population in the somewhat more productive environment of the Upper Daling region. There was no meaningful difference in regional population density between the two regions; estimated populations were surprisingly small in both, falling far short of any imaginable guess at the food-producing capacity of either. It could be that Upper Daling communities had more pronounced social inequalities, greater differences in wealth accumulation, or more intensive craft specialization, and that these were connected to the stronger expression of ceremonial architecture. These aspects of the relations between households within communities carry us beyond the scope of this report on the implications of regional-scale settlement data. They will, however, be taken up in a forthcoming report on the intensive surface collections in the Dongshanzui, Sanjia, and Erbuchi areas, which make it possible to focus in greater detail at the scale of individual households within local communities and to discuss differences in social roles, status, wealth, and productive activities at that smaller scale.

Chapter 5

Lower Xiajiadian through Liao Times

The research objectives that led to the work discussed in the previous chapters concerned Hongshan societies, but the Upper Daling regional survey recorded data on sites of subsequent periods as well. These results are presented in this final chapter because they do contribute to our knowledge of those later parts of the sequence. Their implications, however, are more limited because the Upper Daling region was selected and delineated as an ideal place to answer certain kinds of research questions about Hongshan societies. It is not the region one would have selected for the most enlightening research on subsequent periods. This volume, then, does not provide the best context for an extended treatment of the rest of the sequence. Carrying the archaeological analysis forward all the way to historic times, however, provides an interesting methodological perspective. The aim of this chapter, then, is to provide a basic reconstruction of changing settlement patterns in the Upper Daling region in later times, and to observe how the analytical approaches applied to Hongshan times work in historically documented periods. The third millennium BCE and Xiaoheyan ceramics have already been part of the discussion in Chapter 4 of the end of Hongshan sociopolitical patterns, so we continue here with the Lower Xiajiadian period.

Lower Xiajiadian Period (2000–1200 BCE)

The Lower Xiajiadian period represents the first appearance of bronze artifacts in northeastern China. They are not very abundant in sites that have been excavated, but knives and arrowheads are found in graves, together with sometimes numerous polychrome ceramic vessels and ornaments of jade, shell, and other materials (Guo 1995b; Neimenggu 1984; Zhongguo 1996). Graves with such offerings are sometimes more elaborately constructed; these are taken to indicate the accumulation of substantial wealth in the hands of elites (Flad 2001; Shelach 1999:110–115; 2001a). Many excavated residential structures are as small as 4 m in diameter and built of mud brick, but much larger ones (up to 25 m across, sometimes double-walled and made of stone) are also seen as evidence of economic inequalities (Shelach 1999:96–101). The quality of workmanship in bronze, ceramic, and jade artifacts suggests specialist producers. Cultivated millet was the main subsistence staple (Guo 1995b:160; Li and Gao 1985); pig bones are the most abundant among faunal remains from residential contexts that also include sheep, goats, and cattle (Chifeng 2011; Wang 2004:256). Elaborate fortifications consisting of walls, ditches, watchtowers, and gated entries have been excavated at a number of sites, and testify strongly to widespread conflict (Liaoning 2001; Neimenggu 2007, 2010a; Shelach, Raphael, and Jaffe 2011; Xu 1986). Lower Xiajiadian societies are customarily characterized as chiefdoms or petty states, representing sociopolitical integration but on a substantially smaller scale than had emerged by this time at Erlitou in the Central Plain. Known Lower Xiajiadian sites are much more abundant than those of earlier periods, all across the culture area, suggesting these political changes occurred during a period of general demographic expansion.

The Upper Daling regional survey recovered 3,866 Lower Xiajiadian sherds from 600 separate collection units that covered a total area of 132 ha (Fig. 5.1). This quantity of remains suggests quite substantial population growth from Hongshan times; Lower Xiajiadian population of the survey area is estimated at 3500–7000. The unsmoothed occupation density surface (Fig. 5.2) is the basis of a cluster analysis of collection units with Lower Xiajiadian sherds that delineates 226 local communities (Fig. 5.3). Only the three largest of these had populations above 300–600; none reached 1,000 (Fig. 5.4). Six more local communities exceeded the 100–200-person range. Fully 210 local communities had fewer than 50–100 inhabitants; the vast majority were not really even communities, but only farmsteads of one or two families. Even though farmsteads account for most of the occupation, only about 9% of the population lived this way (Fig. 5.5). Local communities over 50–100 represent about 72% of the Lower Xiajiadian regional population. As in Hongshan times, and probably for the same reasons of proximity to prime agricultural resources, the most favored settlement location continued to be higher ground adjacent to the flat valley floors.

The pattern of separate supra-local communities of modest size established in the Hongshan period continued into Lower Xiajiadian times as well. Six of these supra-local communities can be distinguished more or less completely in the mathematically-smoothed surface of Lower Xiajiadian occupation in Fig. 5.6 (with some settlements near the margins of the survey area not grouped with any of the readily recognizable districts). On average these communities were slightly smaller in spatial extent than those of the Hongshan period. Demographically, however, the

第五章

夏家店下层文化至辽代阶段

前面章节中所讨论的工作是以红山文化社会为研究对象，但大凌河上游区域调查同样记录了红山文化之后各时期遗存的数据。由于这些调查结果确实有助于我们对红山文化之后各时期的认识，因此，在最后一章中我们也对这些结果进行介绍。当初选择和界定大凌河上游调查区域的时候，看中这里是研究红山文化社会问题的理想地点，工作中也具有较强的针对性，所以调查结果对于红山文化之后各时期的启发较为有限。如果想获取红山文化之后最具启发性的研究，可能就不会选择大凌河上游地区。所以，本报告不对年代序列中晚于红山文化的部分进行过多的讨论。将考古分析一直延伸到历史时期也提供了一种非常有趣的方法学的视角。本章目的是基本重建大凌河上游地区较晚时代聚落模式的变化，以及观察用于分析红山文化的方法如何在有文字记录的历史时期内起作用。在第四章关于红山文化末期的社会政治模式的讨论中，已经部分探讨了公元前第三千纪以及小河沿文化的陶片，所以，我们在这里的讨论从夏家店下层文化开始。

夏家店下层文化 (2000 – 1200 BCE)

中国东北地区的青铜时代始于夏家店下层文化。在该文化已经发掘的遗址中，出土的青铜器物并不十分丰富，在墓葬中出土了青铜刀和箭头，数量众多的彩绘陶器，还有玉、贝以及其它材料制作的装饰品（郭 1995b; 内蒙古 1984; 中国 1996)。出土这些随葬品的墓葬有的建造十分精致，它们被认为是反映了大量财富集中于社会上层人群的手中 (Flad 2001; Shelach 1999: 110 – 115; 2001a)。许多已经发掘的夏家店下层文化的房址规模很小，直径仅为 4 米，由泥砖构建而成。但是，也存在更大规模的房址（空间分布达到 25 米，有时出现了由石头垒砌的双层墙壁），同样被看作是经济不平等的证据 (Shelach 1999: 96 – 101)。青铜器、陶器以及玉器所反映的工艺水平表明出现了专业化生产者。粟是主要的农作物（郭 1995b: 160; 李和高 1985)。居住遗址出土的动物遗存中，猪骨是最丰富的，但也包括了绵羊、山羊和牛的骨头（赤峰 2011; 王 2004: 256)。在一些遗址中发现了精心建造的防御工事，由围墙、壕沟、瞭望台以及城门组成，强烈地证实了冲突的普遍存在（辽宁 2001; 内蒙古 2007, 2010a; Shelach、Raphael 和 Jaffe 2011; 许 1986)。夏家店下层文化的社会通常被认为具有酋邦或小国的特征，代表着社会政治的一体化，但在程度上远远不如同时期中原地区的二里头遗址。夏家店下层文化已知遗址的数量比之前时期要多出许多，分散在该文化分布的区域内，表明这些政治变化发生在一个人口普遍扩增的时期。

大凌河上游的区域调查中，共获得 3866 个夏家店下层文化的陶片，这些陶片来自于 600 个采集单位，这些采集单位的总覆盖面积为 132 公顷（图 5.1)。这些遗物的数量表明，自红山文化之后出现了相当大的人口增长。根据估算，调查区域内夏家店下层文化的人口数量为 3500 至 7000。未经过平滑处理的居住密度图（图 5.2）为我们对包含夏家店下层文化陶片的采集单位进行聚类分析提供了基础，并划分出 226 个地方性社区（图 5.3)。只有 3 个最大的地方性社区的人口规模超过 300 – 600 人，但没有一个超过 1000 人（图 5.4)。另外 6 个地方性社区的人口超出了 100 – 200 人。210 个地方性社区的人口少于 50 – 100 人，严格来说，它们中的大部分甚至算不上社区，不过是由一两个家庭组成的农庄罢了。虽然大多数的居住遗迹属于农庄规模，但是仅有 9% 的区域人口居住在这些农庄里（图 5.5)。居民超过 50 – 100 人的地方性社区占有 72% 的区域人口。与红山文化相同，并且可能同样是为了接近优质的农业资源，夏家店下层文化最常见的聚落地点依然是那些既临近平坦谷底，又更高一些的地点。

同样地，红山文化确立的中等规模的超地方性社

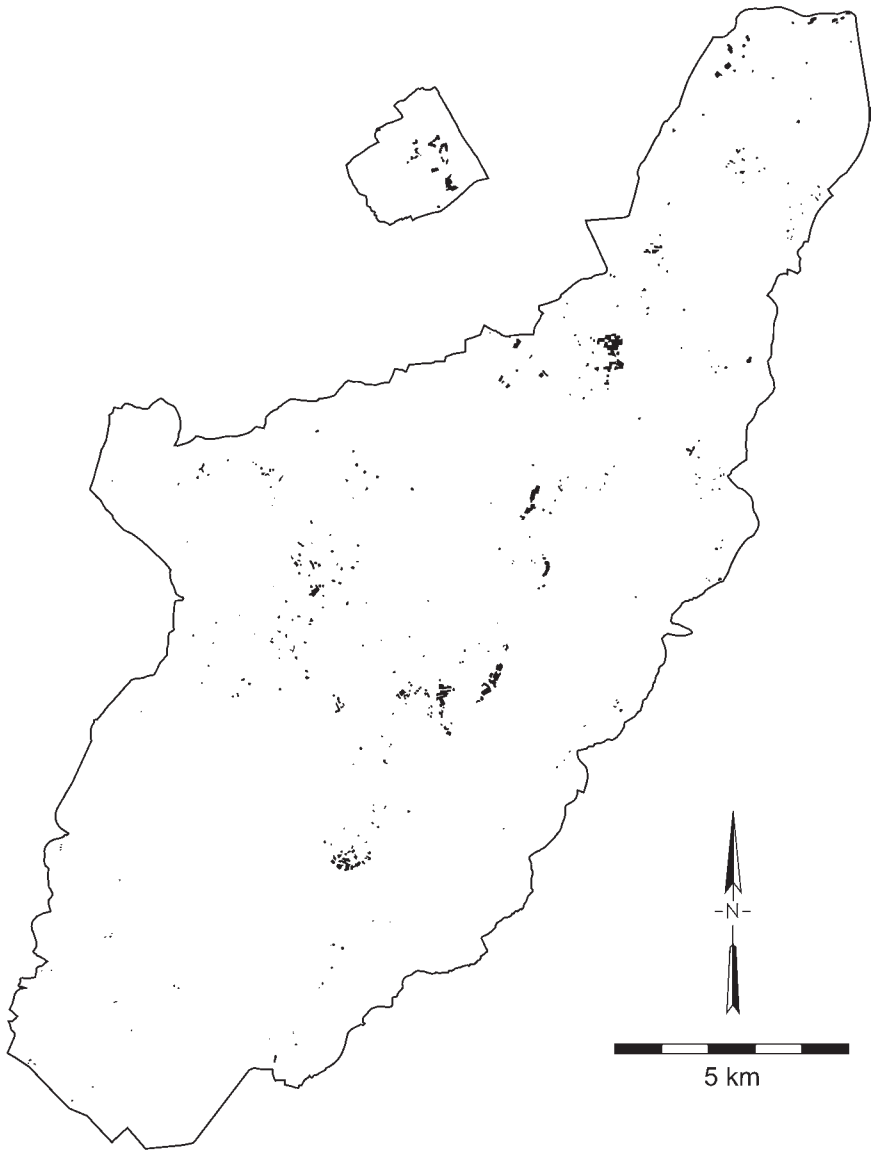


Figure 5.1. Distribution of collection units with Lower Xiajiadian period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

图 5.1 夏家店下层文化陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

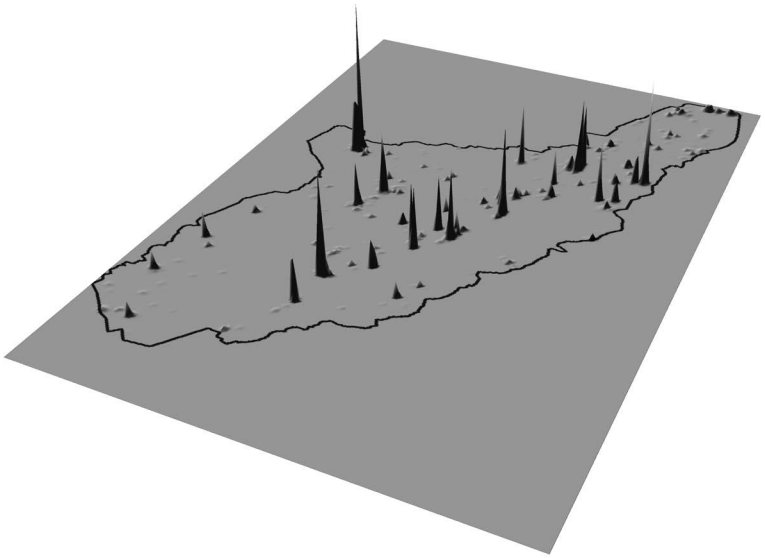


Figure 5.2. Unsmoothed surface representing Lower Xiajiadian period occupation. Available online in color—see Appendix.

图 5.2 未经平滑处理的夏家店下层文化居住密度图（彩色图片可以从网络上获取，参见附录）

区的模式延续到了夏家店下层文化。从经过数学平滑处理的夏家店下层文化的居住密度图中（图 5.6），大约可以划分出 6 个超地方性社区（一些临近调查区域边缘的聚落没有被归入到那些容易被识别出的行政区）。平均来说，这些社区在空间延伸范围上要稍小于红山文化的社区。然而，就人口而言，夏家店下层文化的行政区是红山文化的两倍至三倍。夏家店下层文化行政区通常的人口规模为 500 至 1000 人，有一个行政区的估算人口达到 1200 至 2500 人。

在夏家店下层文化的等级 - 规模图中，A 值为 0.213（图 5.7），表明整个调查区域并没有合并在一个独立的体系中。与红山文化的情形相同，这些行政区是分离和自治的。将行政区隔离开的过渡区非常明显，居住在过渡区的人口非常稀少。从行政区内部的情况来看，大部分表现出很好的一体化程度，并且以一个地方性社区为中心（图 5.8）。在大凌河上游地区，只有一个地方性社区表现出很强的防御性，正是这个中心社区统治着位于调查区最西北的行政区。该处聚落位于山地里农业资源最丰富地区的后方，由山坡上一处面积广阔、居住相对密集的区域组成。自此处往上，坡度陡然增加，直达孤立的山顶，山顶被围墙和壕沟围绕，面积大约为 1 公顷。在这个山顶上，地表的陶片非常密集。这是一处令人敬畏的易守难攻的堡垒，也是大凌河上游调查区域内唯一能确认的夏家店下层文化的防御工事。

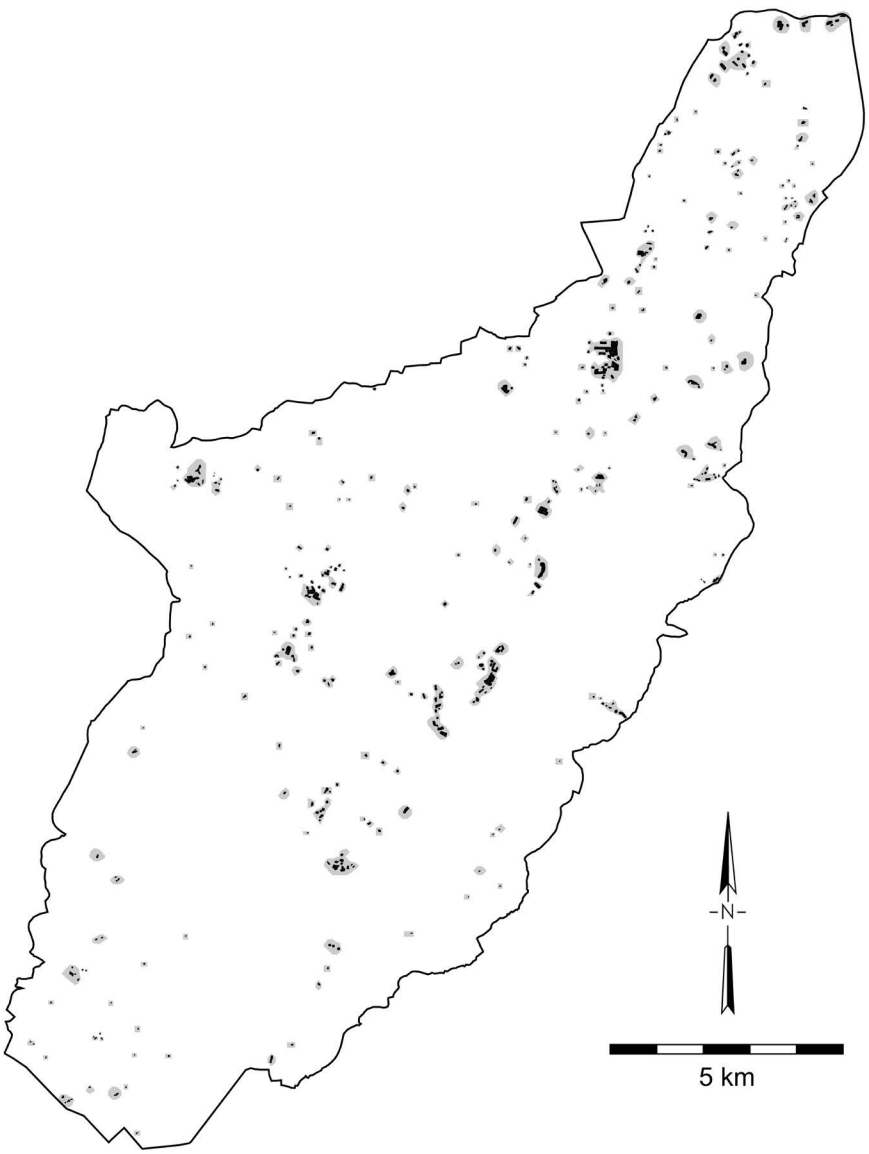


Figure 5.3. Collection units (black) clustered into Lower Xiajiadian local communities (gray). Available online in color—see Appendix.

图 5.3 采集单位聚集形成夏家店下层文化地方性社区（灰色表示地方性社区，黑色表示采集单位，彩色图片可以从网络上获取，参见附录）

大凌河上游地区的夏家店下层文化的聚落模式没有令人意外之处。它们与前人对夏家店下层文化的研究完全一致，并且聚落的发展趋势与赤峰地区完全相符（赤峰 2011）。在人口剧烈增长的背景下，红山文化确立的那种超地方性但在空间上比较小型的政治单元模式被延续下来。大凌河上游地区夏家店下层文化的估算人口大约是红山文化估算人口的五倍（图 5.9），虽然这的确是非常剧烈的增长，但我们应该注意到，在赤峰地区，从红山文化到夏家店下层文化的人口变化幅度甚至更加剧烈。

夏家店上层文化阶段 (1200 – 600 BCE)

夏家店上层文化阶段大致与历史上中原地区的西周处于相同的时代。二者都以丰富多彩的铜器著称，包括精美的大型礼仪容器、武器和甲胄、车器、个人装饰品，以及各种用途的工具和器皿。中原地区制作的青铜器经常被输送到东北地区。墓葬中显示了比以往更加强烈的财富不平等（Shelach

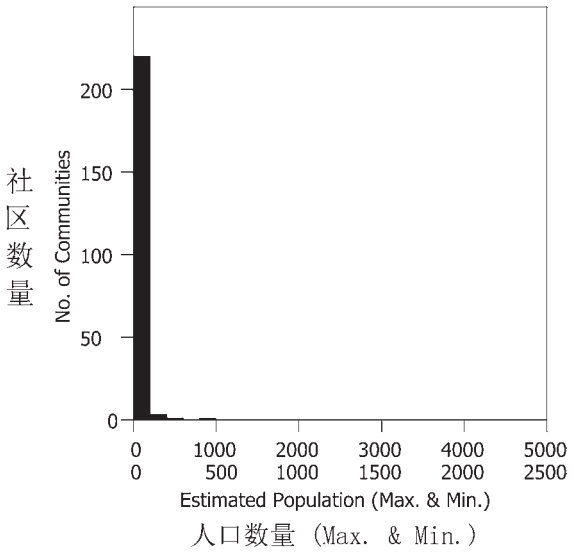


Figure 5.4. Histogram of Lower Xiajiadian local communities by number of communities in each population range.

图 5.4 不同人口规模的夏家店下层文化地方性社区数量的柱状图

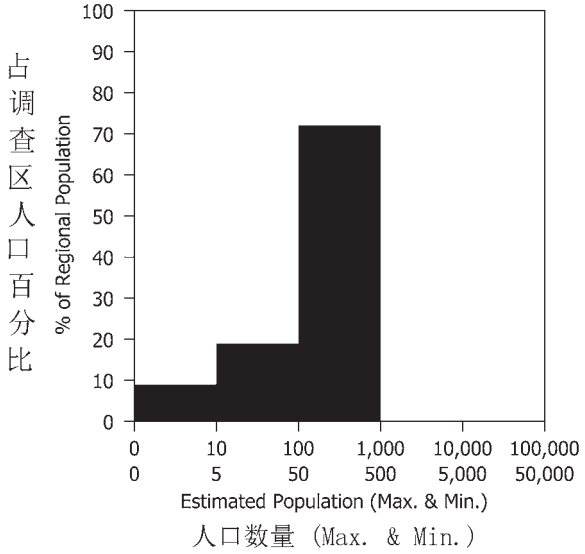


Figure 5.5. Histogram of Lower Xiajiadian local communities by percent of regional population in each population range.

图 5.5 不同人口规模的夏家店下层文化地方性社区所占区域人口比例的柱状图

Lower Xiajiadian districts were two to three times the size of Hongshan supra-local communities. The modal population for Lower Xiajiadian districts was 500–1,000, with one reaching an estimated population of 1,200–2,500.

The rank-size pattern for Lower Xiajiadian, with an *A* value of 0.213 (Fig. 5.7), suggests that the entire survey area was not integrated into a single system, but that the districts were separate and autonomous, as they had been in Hongshan times. The buffers that separate them spatially are clearly marked and very sparsely occupied. Internally, most districts seem well integrated, and centered on a single local community (Fig. 5.8). Only one local community in the Upper Daling region represents the heavily fortified, often hilltop, sites well known from excavated and surveyed Lower Xiajiadian remains elsewhere. It is the central community that dominates the northwesternmost district. Located well back from the most productive agricultural resources of the region in the rising mountains, this settlement consists of a large and relatively dense area of occupation on upper hill slopes. Above this, the slopes rise very steeply to the isolated crest of the hill, which is surrounded by a substantial wall and ditch that encircle an area of about 1 ha. Surface sherds are extremely dense on this hilltop as well. It would be a formidable redoubt to attack, but it is the only very conspicuous indication of Lower Xiajiadian fortifications recorded in the survey.

Lower Xiajiadian settlement patterns in the Upper Daling region, then, present few surprises. They are entirely consistent with what is known about Lower Xiajiadian times from previous research, and settlement trends parallel those documented in the Chifeng region (Chifeng 2011). The pattern of supra-local, but still spatially quite small, political units that was established in Hongshan times persists in a context of sharp population growth. The estimated Lower Xiajiadian population of the Upper Daling region is some five times that estimated for Hongshan times (Fig. 5.9). While this is, indeed, a strong increase, it is worth noting that in the Chifeng region the population change between Hongshan and Lower Xiajiadian times was even stronger.

Upper Xiajiadian Period (1200–600 BCE)

The Upper Xiajiadian period was largely contemporaneous with the historically known Western Zhou in the Central Plain. Both are characterized by a proliferation of bronze artifacts of many kinds, including especially elaborate and often quite large ritual vessels, arms and armor, chariot fittings, personal adornments, and tools and utensils for a variety of practical tasks. Bronze objects produced in the Central Plain were often imported to the northeast. Burials show more substantial inequalities of wealth than before (Shelach 1999:163–177, 2001a). Offerings include the entire variety of bronze artifacts just mentioned, as well as gold, shell, and stone ornaments; ceramic vessels; sacrificed animals; and stone axes, hoes, and reaping knives; bone needles; and other tools. Graves themselves were often made of stone slabs and covered with small mounds of earth; they could contain wood or stone coffins. Stone or mud brick houses are generally less than 10 m in diameter (Liaoning 1983; Liu and Xu 1981; Zhongguo 1974, 1975). The argument for specialized producers based on the quality of workmanship seen in bronze, stone, and other objects, is even stronger than it was for Lower Xiajiadian. The evidence for fortifications, so abundant in the Chifeng region

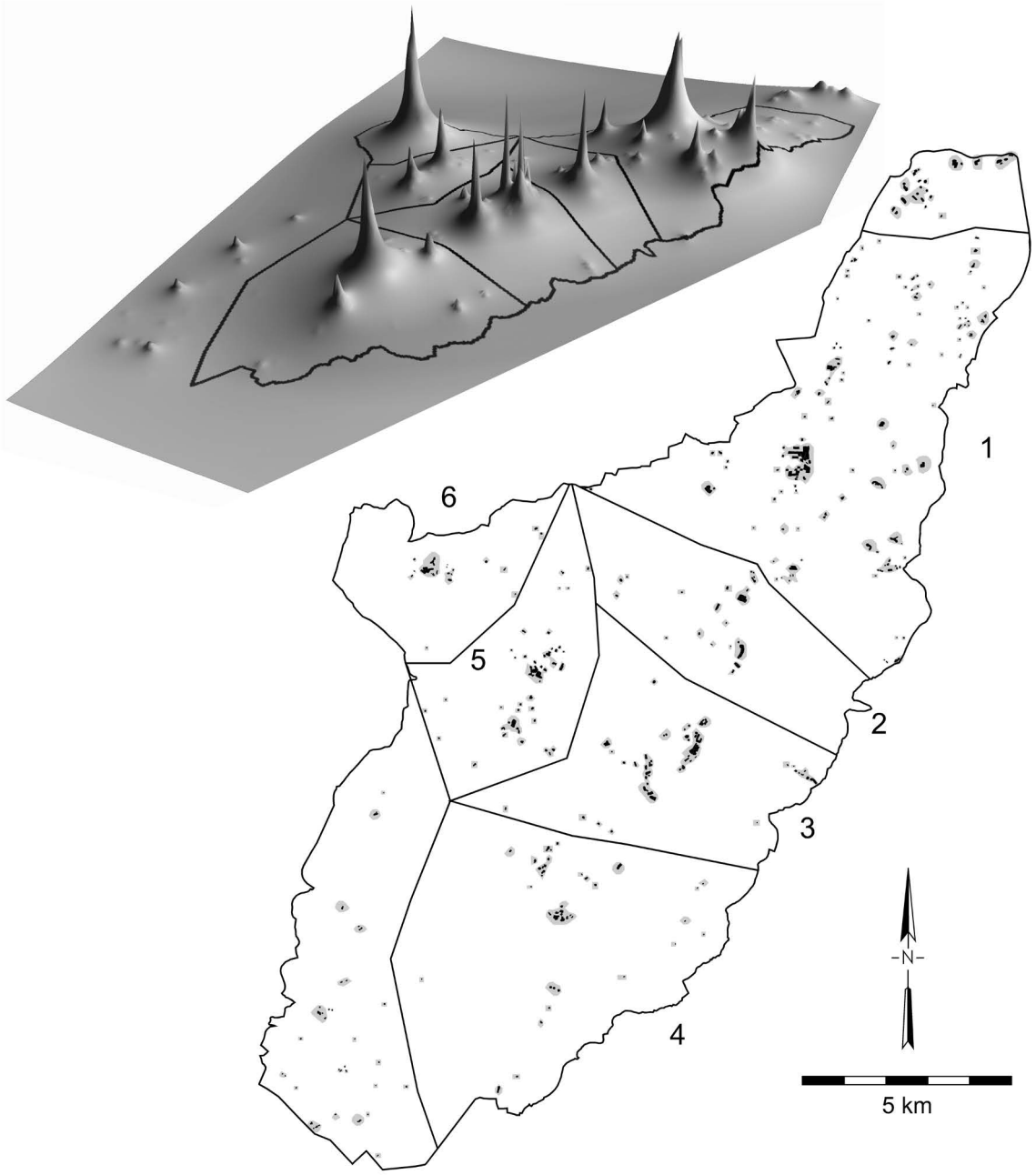


Figure 5.6. Smoothed surface representing Lower Xiajiadian occupation and map of supra-local communities or districts. Available online in color—see Appendix.

图 5.6 平滑处理的夏家店下层文化居住密度图和超地方性社区或行政区的地图（彩色图片可以从网络上获取，参见附录）

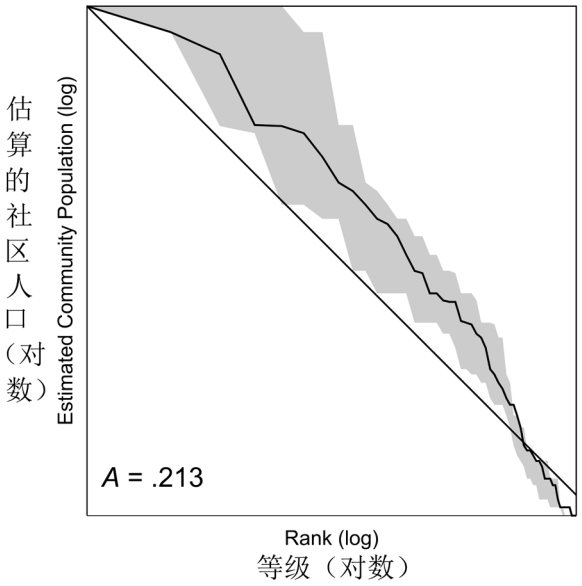


Figure 5.7. Rank-size graph of the entire Upper Daling survey area in Lower Xiajiadian times with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.7 整个大凌河上游调查区域的夏家店下层文化等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

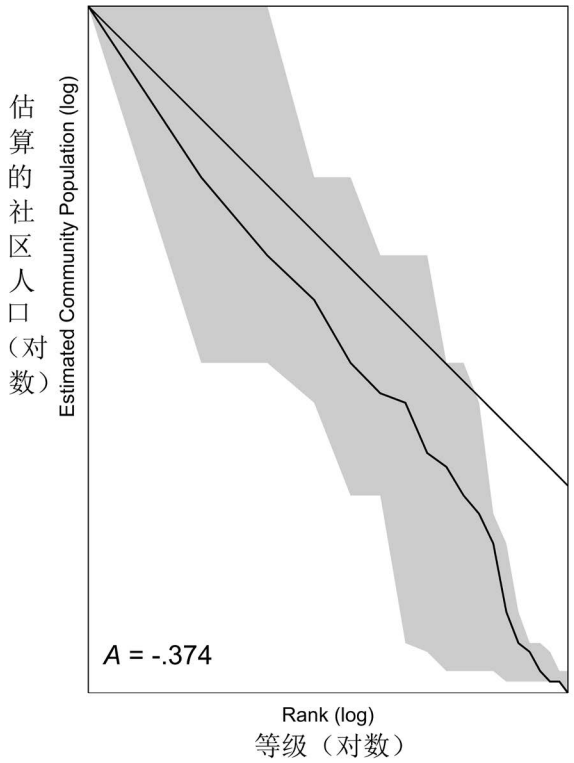


Figure 5.8. Rank-size graph of Lower Xiajiadian District 1 with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.8 1 号夏家店下层文化行政区的等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

in Lower Xiajiadian times, quite considerably diminished. This suggests a reduction in actual conflict even though arms and armor are conspicuous in elaborate Upper Xiajiadian graves. These military burial offerings have been attributed to the role played in the projection of identity and power by a warrior ethos and connections to northern steppe regions (Shelach 2009). It has even been suggested that the Upper Xiajiadian archaeological culture represents the pastoral nomadic people that figure so prominently in early Chinese history (e.g. Bunker 1990; Linduff 1997; Qiao 1992; Shelach 1999; Tian 1995). Settlement study in the Chifeng region, however, shows fully sedentary residence patterns with subsistence focused on cultivated millet and domesticated pigs, supplemented by sheep, goats, and cattle (Chifeng 2011; see also Wang 2004:257). Attempts such as that of Liu and Feng (2012:1189) to make "the collapse of the agriculture-based Lower Xiajiadian Culture" and the "rise of pastoral nomadism" in northeastern China a simple effect of climate change thus founder on the fact that the purported "major shift from sedentary agriculture to pastoral nomadism" did not occur across the area in which Lower and Upper Xiajiadian materials are distributed.

In the Upper Daling survey area 5,102 Upper Xiajiadian sherds were recovered from 645 separate collection units that covered a total area of 140 ha (Fig. 5.10). The Upper Xiajiadian population of the survey area is estimated at 7,500–15,000, about double that of Lower Xiajiadian.

The unsmoothed occupation density surface (Fig. 5.11) is the basis of a cluster analysis of collection units with Upper Xiajiadian sherds that delineates 174 local communities (Fig. 5.12). Three of these local communities exceeded the 500–1,000 inhabitant range; one reached 2,000–4,000 (Fig. 5.13). An additional 10 have populations above 100–200. A total of 154 local communities had fewer than 50–100 inhabitants; the vast majority were again only farmsteads of one or two families. This large number of farmsteads, however, accounts for an even smaller proportion of the population (3%) than in Lower Xiajiadian times (Fig. 5.14). Over half the population lived in larger settlements than any that had previously existed in the Daling survey area—three local communities that could loosely be called "towns." These towns are distinguished by patches of very high surface artifact densities, which indicate particularly compact, nucleated occupation, often associated with more extensive zones of less compact settlement. As in Lower Xiajiadian times, and probably for the same reasons, the most favored settlement location continued to be higher ground adjacent to the flat valley floors.

As for other periods, several separate supra-local communities a few kilometers across are evident in the mathematically-smoothed surface of Upper Xiajiadian oc-

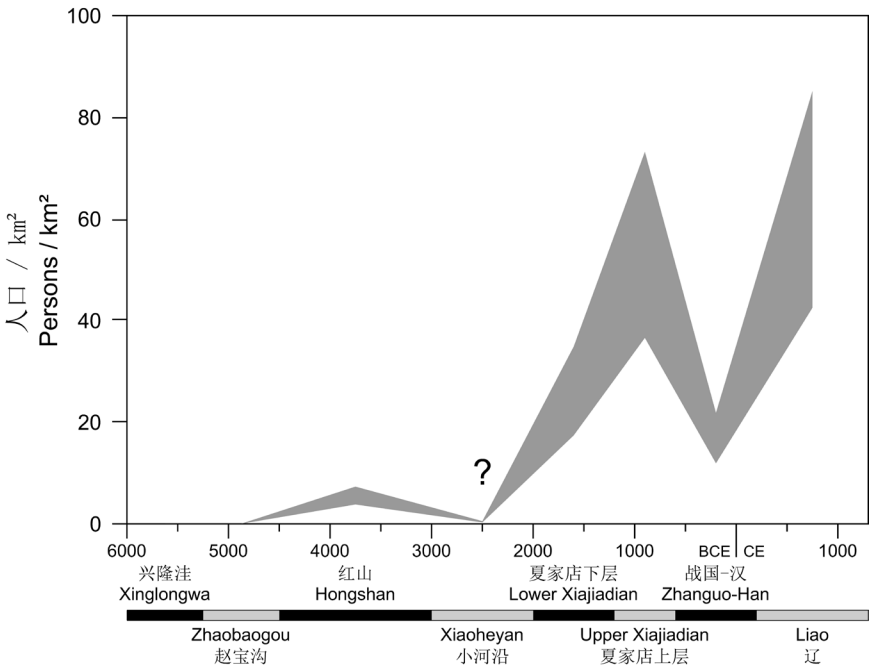


Figure 5.9. Estimated population in the Upper Daling survey area through time (maximum and minimum estimates shown).

图 5.9 大凌河上游调查区域各时期的估算人口数值
(图中显示了最小的和最大的估算人口)

1999: 163 – 177, 2001a), 陪葬品包括上述提到的所有青铜器类型，也包括金和石质的装饰品、陶器、动物牺牲，还有石斧、石锄和收割用的石刀，以及骨针和其它工具。墓葬本身常常由石板构成，上面覆盖着小土堆，墓葬内可能有木质或者石质的棺材。由石头或者泥砖建造的房屋通常直径小于 10 米（辽宁 1983; 刘和许 1981; 中国 1974, 1975)。根据青铜器、石器和其它器物的制作工艺推断出专业化生产者的存在，这种论断较之夏家店下层文化时期更有说服力。赤峰地区在夏家店下层文化十分多见的防御工事在这一时期急剧减少，这表明，尽管夏家店上层文化阶段的墓葬中包含不少武器和甲胄，但当时的冲突实际上反而减少了。这些与军事行为有关的随葬品是北方草原地带武士身份和权利的映射 (Shelach 2009)。有学者（例如，Bunker 1990; Linduff 1997; 乔 1992; Shelach 1999; 田 1995) 曾提出，夏家店上层文化是一个在早期中国历史中扮演着重要角色的游牧民族。然而，赤峰地区的聚落研究却显示了完全定居的居住模式，以栽培粟和驯养家猪为主，以山羊、绵羊和牛为辅的生计方式（赤峰 2011; 同时参见 王 2004: 257)。还有学者 (Liu and Feng 2012:1189) 试图论证由于气候变化的影响导致农本经济的崩溃和游牧经济的兴起，但是在夏家店下层和上层文化分布区内，从定居农业到游牧经济的重大转变根本就没有发生过。

在大凌河上游的区域调查中，共获得 5102 个夏家店上层文化阶段的陶片，它们来自于 645 个采集单位，这些采集单位的总面积为 140 公顷（图 5.10)。根据估算，这一时期的人口数量为 7500 至 15000, 大约是夏家店下层文化的两倍。未经过平滑处理的居住密度图（图 5.11）为我们对包含此时期陶片的采集单位进行聚类分析提供了基础，并划分出 174 个地方性社区（图 5.12)。这些地方性社区中，有三个社区的居住人数超出了 500 – 1000 人，有一个社区达到了 2000 – 4000 人（图 5.13)。另外 10 个社区的居住人数超出了 100 – 200 人。总共有 154 个地方性社区的居住人数低于 50 – 100 人，不过，大多数的地方性社区仍然是由一两个家庭组成的农庄。尽管农庄的数量很多，但居住人数在整个区域人口中的比例甚至比夏家店下层文化更低，只占 3%（图 5.14)。超过一半的区域人口居住在更大的聚落中，这些聚落比大凌河上游调查区域中任何之前的聚落都大，有三个地方性社区可以被笼统地称之为镇子。这些镇子可以通过地表非常高的遗物密度区块来区分，暗示着非常紧凑和核心型的居住模式，并经常与更为广泛的、不那么紧凑的聚落区域联系在一起。与夏家店下层文化相同，并可能是出于同样的原因，夏家店上层文化阶段最垂青的聚落地点依然是那些临近平坦谷底的高地。

和其它时期一样，通过数学平滑处理，我们在夏家店上层文化阶段的居住密度图上划出了几个横跨数公里的超地方性社区（图 5.15)。在调查区域的北面和西面，一些行政区可能部分地延伸出了调查边界。在三个完整的行政区的中心，均有一个前面描述过的那种镇子（在平滑处理后的密度图上表现为三个最高峰)。行政区的典型人口规模和最大人口规模大约是夏家店下层文化的两倍（分别为 1000 – 2000 人和 2500 – 5000 人)。

夏家店上层文化阶段的等级 - 规模图与夏家店下

cupation in Fig. 5.15. Some of these districts may extend beyond the limits of the survey area to the north and west, but three of them seem fully delineated within its boundaries. Each of the three has at its center one of the towns mentioned above (visible as the three tallest peaks in the smoothed surface). Modal and maximal district populations are about twice what they had been in Lower Xiajiadian times (now 1,000–2,000 and 2,500–5,000, respectively).

The rank-size pattern for Upper Xiajiadian is very similar to that for Lower Xiajiadian, including an *A* value of 0.227 (Fig. 5.16). The entire survey area was thus not likely integrated into a single system, but composed of multiple autonomous districts. The buffers that separate them spatially are even more clearly marked than before and very sparsely occupied. All three districts that are more or less completely represented within the survey area are internally well integrated, and each is centered on a single town (Fig. 5.17). In some cases this centralization is extreme, as in the southernmost district, where the dominant town contains 95% of the entire district population.

The estimated population change from Lower Xiajiadian times into Upper Xiajiadian times was not as great as between Hongshan and Lower Xiajiadian times, but population growth did continue to be strong (Fig. 5.9). The pattern of small autonomous polities persisted yet again, and the degree to which the populations of these supra-local communities were concentrated into a single central town increased. Both characteristics are fundamentally similar to the patterns recorded in the Chifeng region (Chifeng 2011). The high degree of nucleation in at least some sectors of the towns suggests a considerable intensification of interaction of some sort among the inhabitants of these more compact communities. Sometimes such an increase in the compactness of settlements is associated with an increase in productive specialization and economic interdependence among the inhabitants (cf. Peterson and Drennan 2005). The large undefended towns would probably not have emerged in conditions of regional conflict, and there is no sign in the Upper Daling region of the fortifications that were conspicuous at one settlement during Lower Xiajiadian.

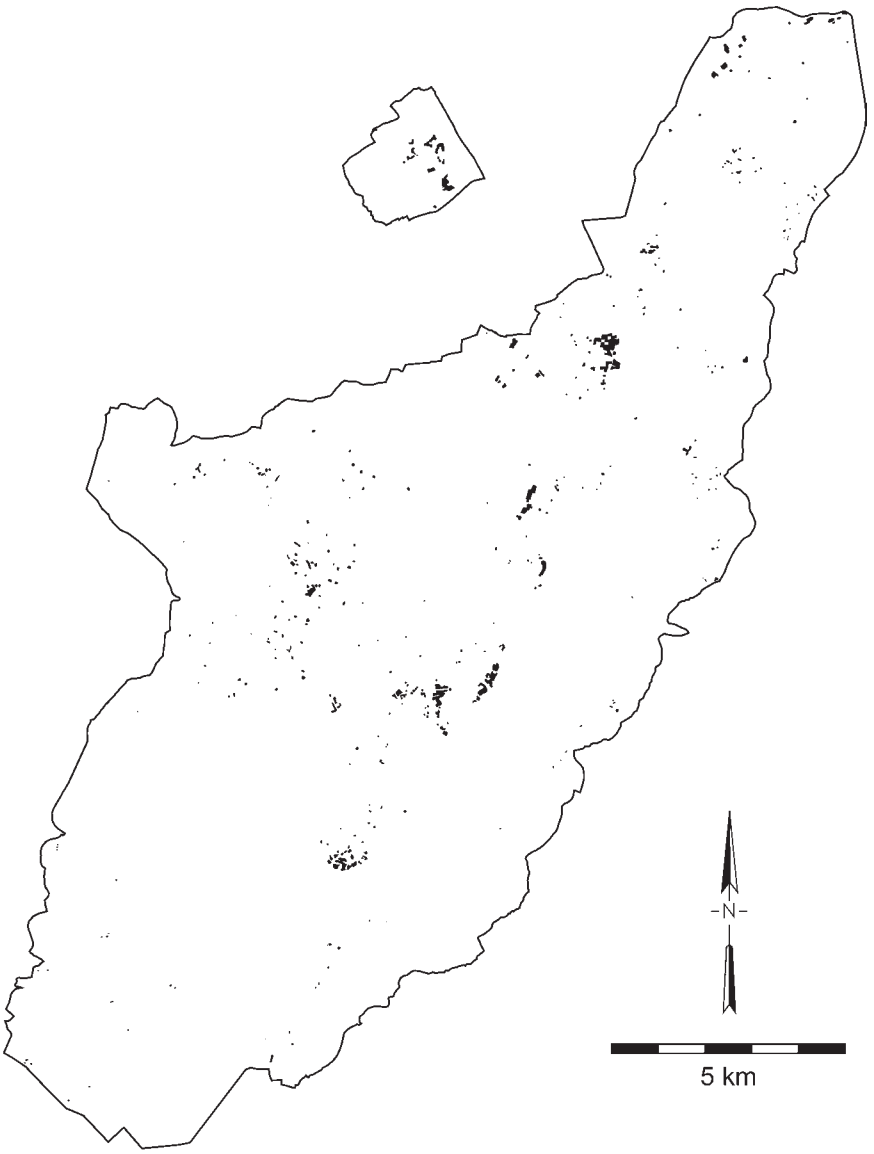


Figure 5.10. Distribution of collection units with Upper Xiajiadian period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

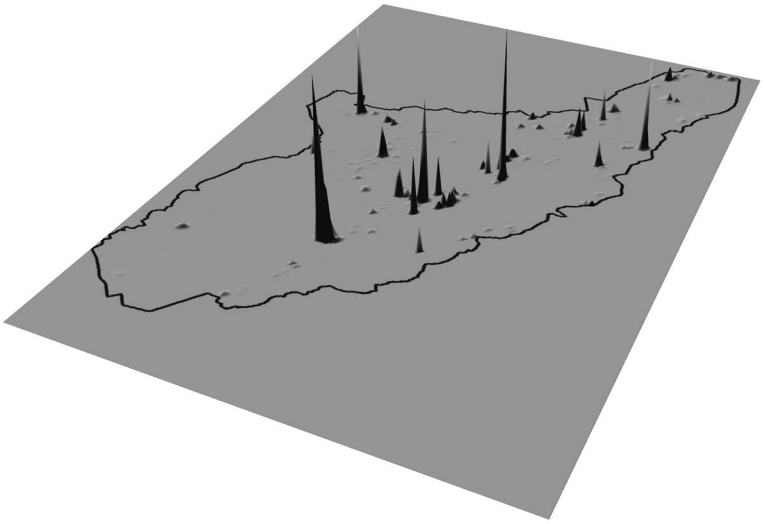
图 5.10 夏家店上层文化阶段陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

Zhanguo-Han Period (600 BCE–200 CE)

The Zhanguo-Han period was marked in northeastern China by the emergence of the historically documented state of Yan, with its capital in what is now Beijing, over 300 km from the Upper Daling region. Before the end of the Zhanguo (Eastern Zhou or Warring States) period, the Yan state was conquered and incorporated into the larger Qin and then finally Han states with even more distant capitals. The Upper Daling region thus came to represent a small patch of distant hinterland in a succession of integrated polities on a vast scale. This political integration facilitated a much greater degree of long-distance movement of foodstuffs and craft goods as well, made possible

Figure 5.11. Unsmoothed surface representing Upper Xiajiadian period occupation. Available online in color—see Appendix.

图 5.11 未经平滑处理的夏家店上层文化阶段居住密度图（彩色图片可以从网络上获取，参见附录）



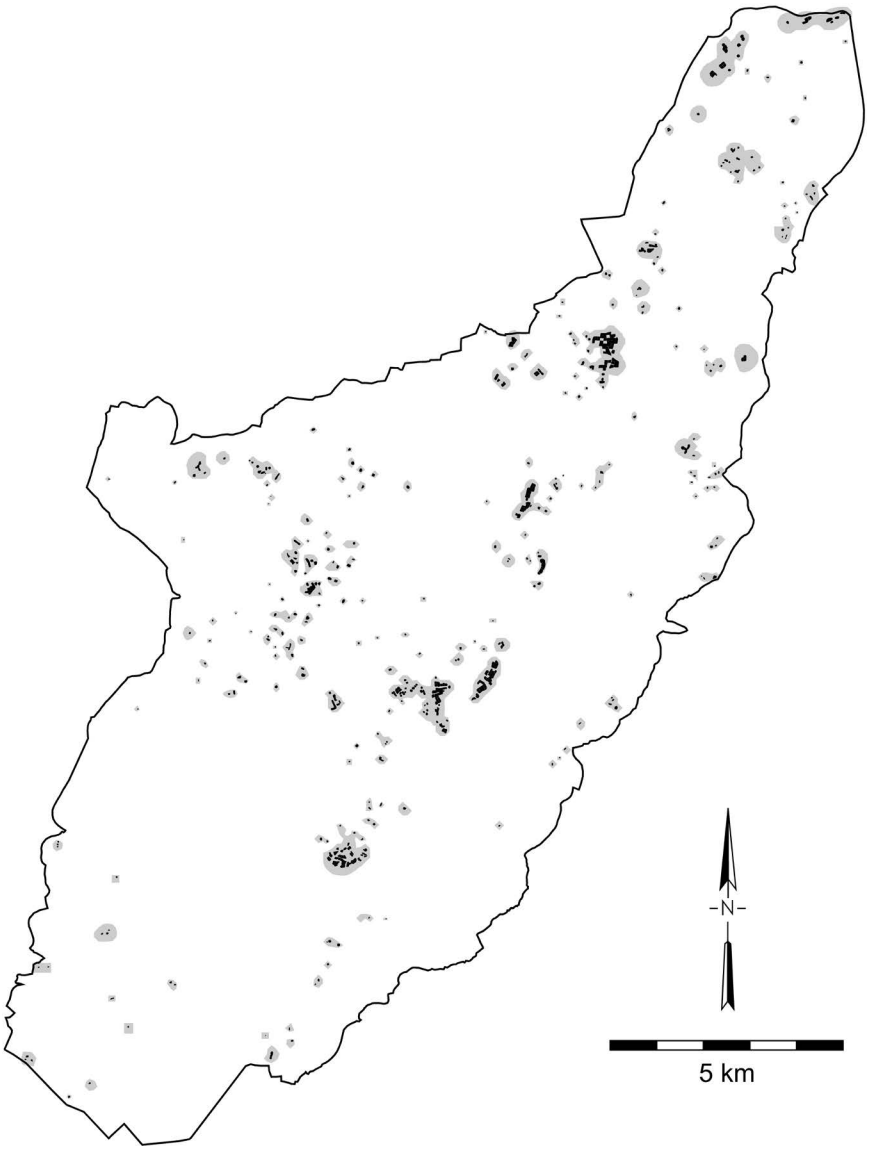


Figure 5.12. Collection units (black) clustered into Upper Xiajiadian local communities (gray). Available online in color—see Appendix.

图 5.12 采集单位聚集形成夏家店上层文化阶段地方性社区（灰色表示地方性社区，黑色表示采集单位，彩色图片可以从网络上获取，参见附录）

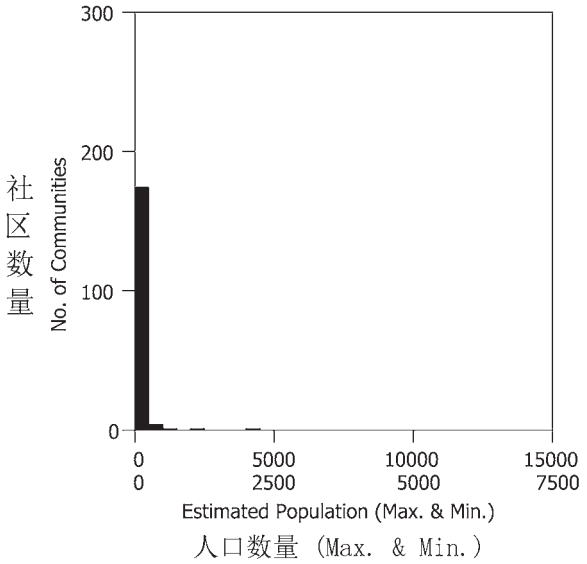


Figure 5.13. Histogram of Upper Xiajiadian local communities by number of communities in each population range.

图 5.13 不同人口规模的夏家店上层文化阶段地方性社区数量的柱状图

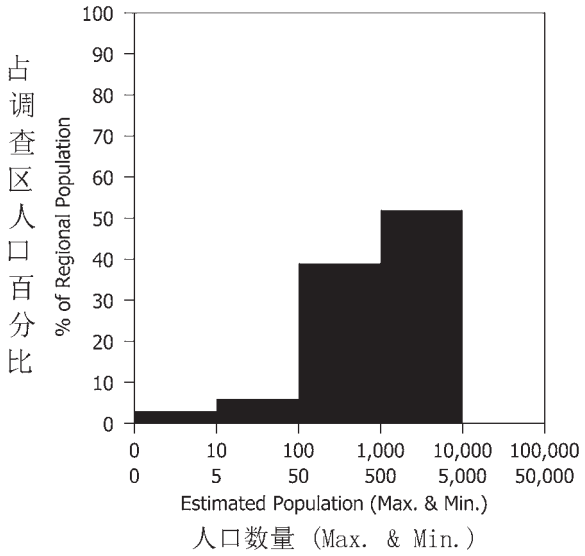


Figure 5.14. Histogram of Upper Xiajiadian local communities by percent of regional population in each population range.

图 5.14 不同人口规模的夏家店上层文化阶段地方性社区所占区域人口比例的柱状图

by horse-drawn transport. Iron tools, of course, also greatly increased agricultural productivity. In contrast to earlier periods, for Zhanguo-Han times in the Upper Daling region, archaeological settlement study's contribution to previous knowledge is not to provide a broader and more comprehensive view of relationships between settlements, but rather to focus in on the impact of truly large scale political integration and commerce on a hinterland region.

In the Upper Daling survey area 3,618 Zhanguo-Han sherds were recovered from 960 separate collection units that covered a total area of 207 ha (Fig. 5.18). The Zhanguo-Han population of the survey area is estimated at 2,000–4,000, a reduction by about two-thirds back to levels below those of Lower Xiajiadian times. The unsmoothed occupation density surface (Fig. 5.19) is the basis of a cluster analysis of collection units with Zhanguo-Han sherds that delineates 327 local communities (Fig. 5.20). The largest of these is estimated at 200–400 inhabitants, about one-tenth the size of the largest Upper Xiajiadian town (Fig. 5.21). Fully 287 of these local communities, representing 18% of the regional population, were only farmsteads of one or two families. The disappearance of all the larger settlements, and the dramatic increase in the proportion of the population living in farmsteads (Fig. 5.22), represent a sharp ruralization of the earlier largely town-dwelling Upper Xiajiadian population. Settlement is much more broadly scattered throughout the Upper Daling survey area; the tendency toward clustering is weaker than in earlier periods and supra-local communities are not easily delineated.

The existence of historical records for Zhanguo times provides knowledge of the large scale political environment in which the Upper Daling region participated, and makes it clear that social and economic development was centered elsewhere. Zhanguo documents, however, provide little specific information about hinterlands so distant from important political capitals. Probably the most important known Zhanguo place near the Upper Daling region was the archaeological site of Huajingou, just outside the southern boundary of the survey area, where the existing remains of rammed earth walls enclose an area 300 x 180 m. Fuller historical detail becomes available in the Han period. As many as three Han counties are specifically named in and around the Upper Daling survey area. The walled county seat of Bailangxian lies only 5 km to the southwest; Shichengxian probably corresponds to the archaeological site of Huangjiadian 12 km farther southwest; and Guangduxian was at an undetermined location to the north of the survey area. Thus it seems that no settlement even as important as a Han county seat is included in the Upper Daling archaeological survey.

This picture is entirely consistent with the archaeological remains recorded. Huajingou and the Han period county seats would have had populations of 5,000 people or perhaps substantially more. The largest Zhanguo-Han local community in the survey area, at 200–400 people, falls far short of this level, and clearly would have been subordinate to one of the higher-order walled towns outside the survey area. Lacking the anchor provided by a large central place, the smoothed surface (Fig. 5.23) gives undue importance to this modest village. Even so, it is clear that this village fails to exert any strong centripetal forces on the regional population. The rank-size pattern for the entire survey area is more convex than ever before, with an *A* value of 0.367 (Fig. 5.24), but the evidence of small autonomous polities

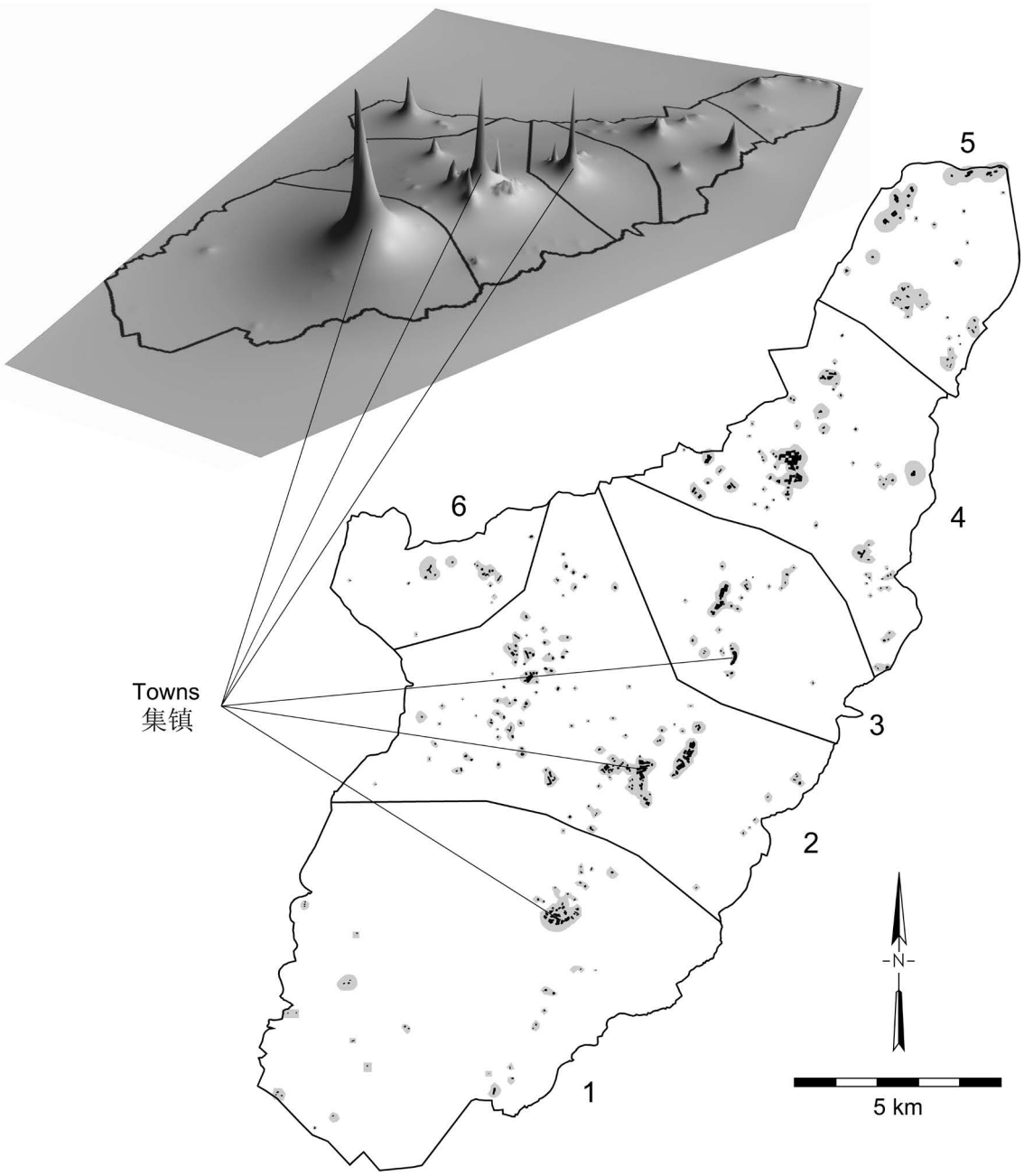


Figure 5.15. Smoothed surface representing Upper Xiajiadian occupation and map of supra-local communities or districts. Available online in color—see Appendix.

图 5.15 平滑处理的夏家店上层文化阶段居住密度图和超地方性社区或行政区的地图（彩色图片可以从网络上获取，参见附录）

层文化十分相似，A 值为 0.227（图 5.16）。因此，整个调查区域在这一时期仍然不太可能被整合为一个独立的体系，而是包含了多个独立的行政区。与之前的时期相比，行政区之间的过渡区域在空间上更加明显，居住人数也非常的稀少。调查区域内大体上比较完整的三个行政区在内部是高度整合的，均以一个独立的镇子为中心（图 5.17）。在一些例子中，这种集中化是非常极端的，例如位于最南端的行政区，处于统治地位的镇子包含了整个行政区 95% 人口。

从夏家店下层文化到夏家店上层文化阶段，估算出的人口变化并不如红山文化到夏家店下层文化的人口变化幅度大，不过，人口确实在持续强劲增长（图 5.9）。小型自治的政治单元模式依然延续着，并且超地方性社区将人口聚集到一个中心镇子的程度在增

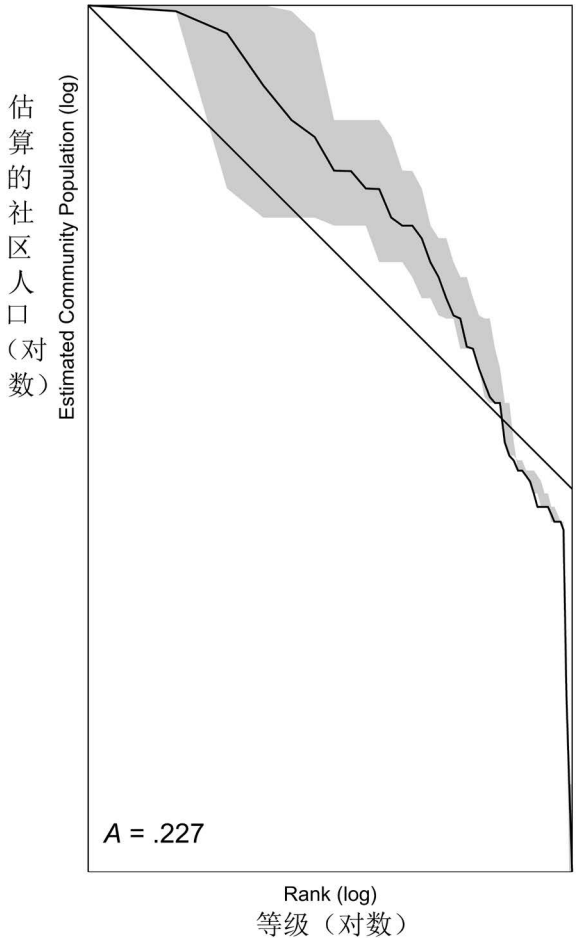


Figure 5.16. Rank-size graph of the entire Upper Daling survey area in Upper Xiajiadian times with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.16 整个大凌河上游调查区域的夏家店上层文化阶段等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

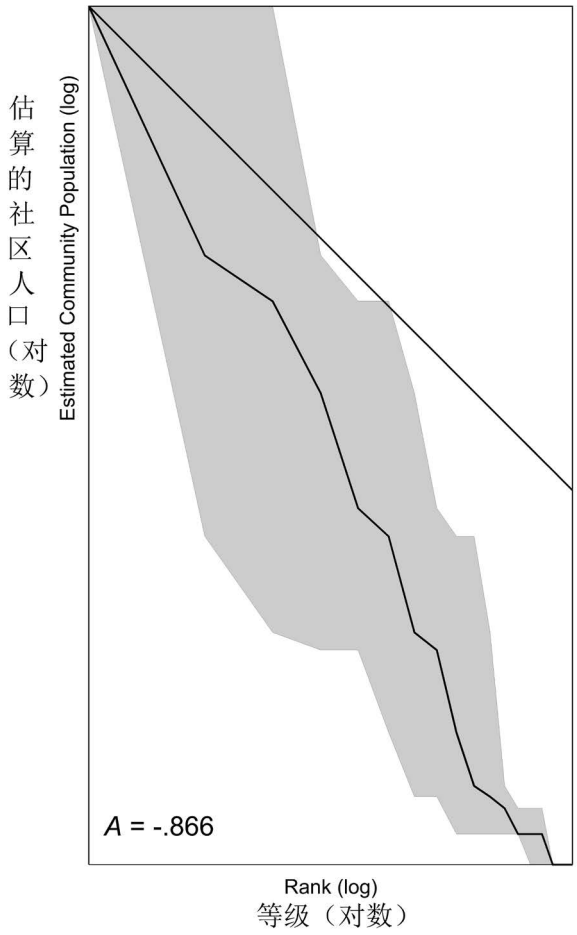


Figure 5.17. Rank-size graph of Upper Xiajiadian District 2 with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.17 2 号夏家店上层文化阶段行政区的等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

that had persisted through all the earlier periods has disappeared entirely.

The ruralization seen in the Upper Daling region is clearly not an adequate overall generalization about Zhanguo-Han settlement and demographic trends. It is an accurate characterization of the trends that might be observed in many places—places that, like the Upper Daling survey area, were rural peripheries of low-level administrative centers that were themselves in very peripheral positions within the large political entities of Zhanguo-Han times. In contrast to earlier times, Zhanguo-Han political integration had attained a scale far beyond the reach of archaeological settlement analyses, which must thus be interpreted in terms of this larger context.

Liao Period (200–1300 CE)

The period referred to here as Liao includes the Liao dynasty proper (907–1125 CE), as well as politically more turbulent periods before and after it. The Liao domain was substantially larger than the Yan state, although not approaching the maximum size of the Han empire. In contrast to distant Yan and Han capitals, however, the Liao central capital of Zhongjing was located only about 75 km north of the Upper Daling region. In Liao times, then, Upper Daling settlement analyses concern an imperial heartland, not fringes.

In the Upper Daling survey area 3,957 Liao period sherds were recovered from 1,413 separate collection units

强，这两个特点与赤峰地区记录的模式基本相似（赤峰 2011）。至少在镇子的某些部分，核心化的程度很高，这表明在这些更加紧凑的社区中，居住者之间的某种互动有着相当的强化。有时候，这种聚落紧凑程度的增强与居住者之间在专业化生产和经济互相依赖上的增加有关联（参见 Peterson 和 Drennan 2005）。存在区域冲突的环境中，不可能出现大型的、无防御设施的镇子。在大凌河上游区域，没有任何迹象表明夏家店上层文化阶段拥有像夏家店下层文化那样的防御工事。

战国 - 汉代
(600 BCE – 200 CE)

中国东北地区的战国 - 汉代以史书中记载的燕国的出现为标志。燕国的首都位于今天的北京市，距离大凌河上游区域 300 多公里。在战国结束之前，燕国被更为庞大的秦国所征服和兼并，并最终成为汉王朝的一部分，汉的都城更加远离大凌河调查区域。因此，大凌河上游区域只是一系列庞大的一体化政权的一小片遥远的辖地。这种政治一体化为食物和手工业产品在更大程度上的远距离运输（以马作为运送工具）提供了便利。当然，铁器工具也极大地提高了农业生产力。与大凌河上游区域之前的时期不同，战国 - 汉代的考古聚落研究对我们已有认识的贡献不在于提供了一个关于聚落关系的更加广阔、更加全面的视角，而在于专注研究大规模的政治一体化和商业对一个偏僻地区的影响。

在大凌河上游的区域调查中，共获得 3618 个战国 - 汉代陶片，它们来自于 960 个采集单位，这些采集单位的总覆盖面积为 207 公顷（图 5.18）。根据估算，调查区域内战国 - 汉代的人口数量为 2000 至 4000，这个数字比夏家店下层文化的人口数量下降了大约 1/3。未经过平滑处理的居住密度图（图 5.19）为我们将包含战国 - 汉代陶片的采集单位进行聚类分析提供了基础，并划分出 327 个地方性社区（图 5.20）。最大的一个地方性社区拥有大概 200 至 400 人，大约是夏家店上层文化阶段规模最大的镇子人口的 1/10（图 5.21）。18% 的区域人口居住在其中的 287 个社区中，这些社区全部是由一两个家庭组成的农庄。更大规模的聚落消失了，并且居住在农庄中的人口比例也急剧增加（图 5.22），这代表着之前夏家店上层文化阶段主要以镇子为中心的人口居住模式剧烈地转向了乡村

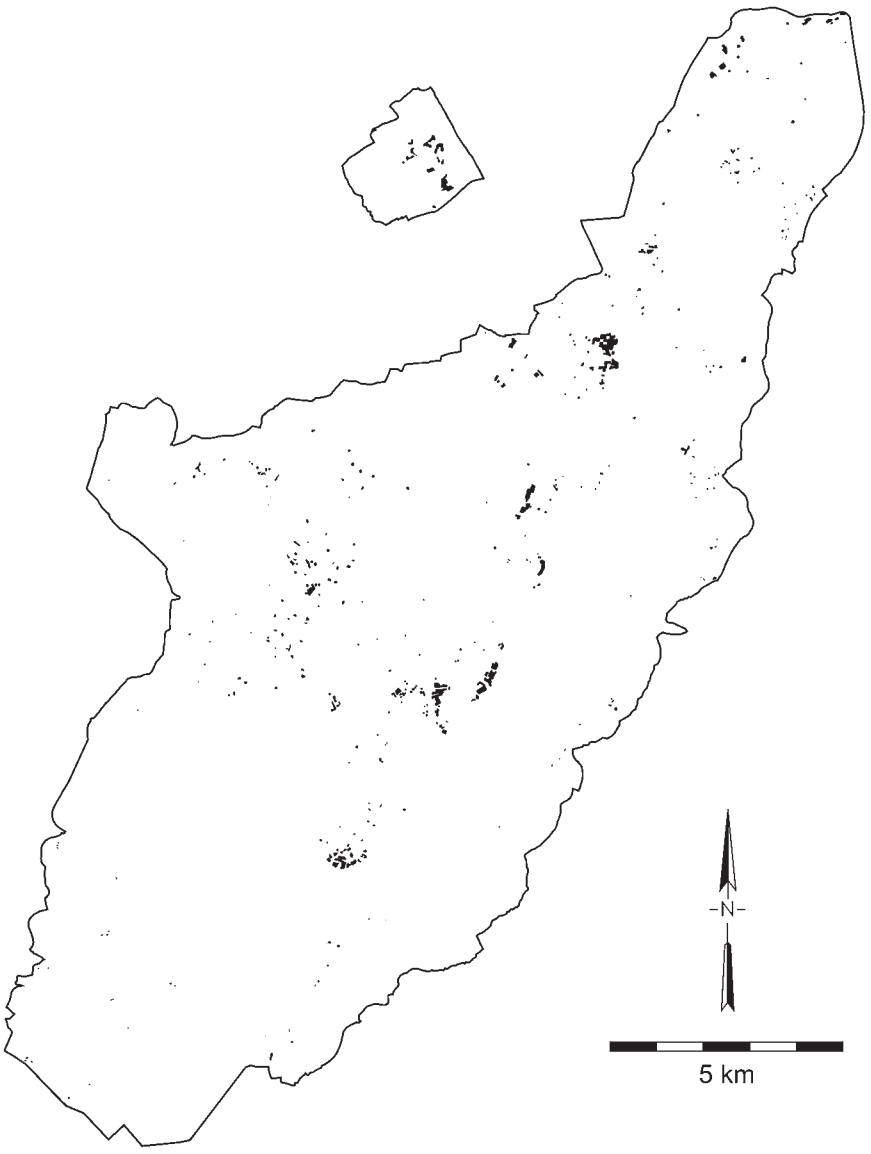


Figure 5.18. Distribution of collection units with Zhanguo-Han period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

图 5.18 战国 - 汉代陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

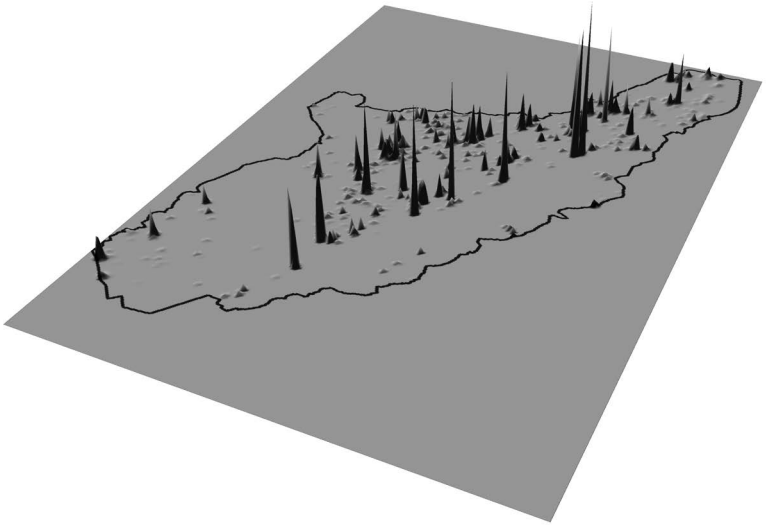


Figure 5.19. Unsmoothed surface representing Zhanguo-Han period occupation. Available online in color—see Appendix.

图 5.19 未经平滑处理的战国 - 汉代居住密度图（彩色图片可以从网络上获取，参见附录）

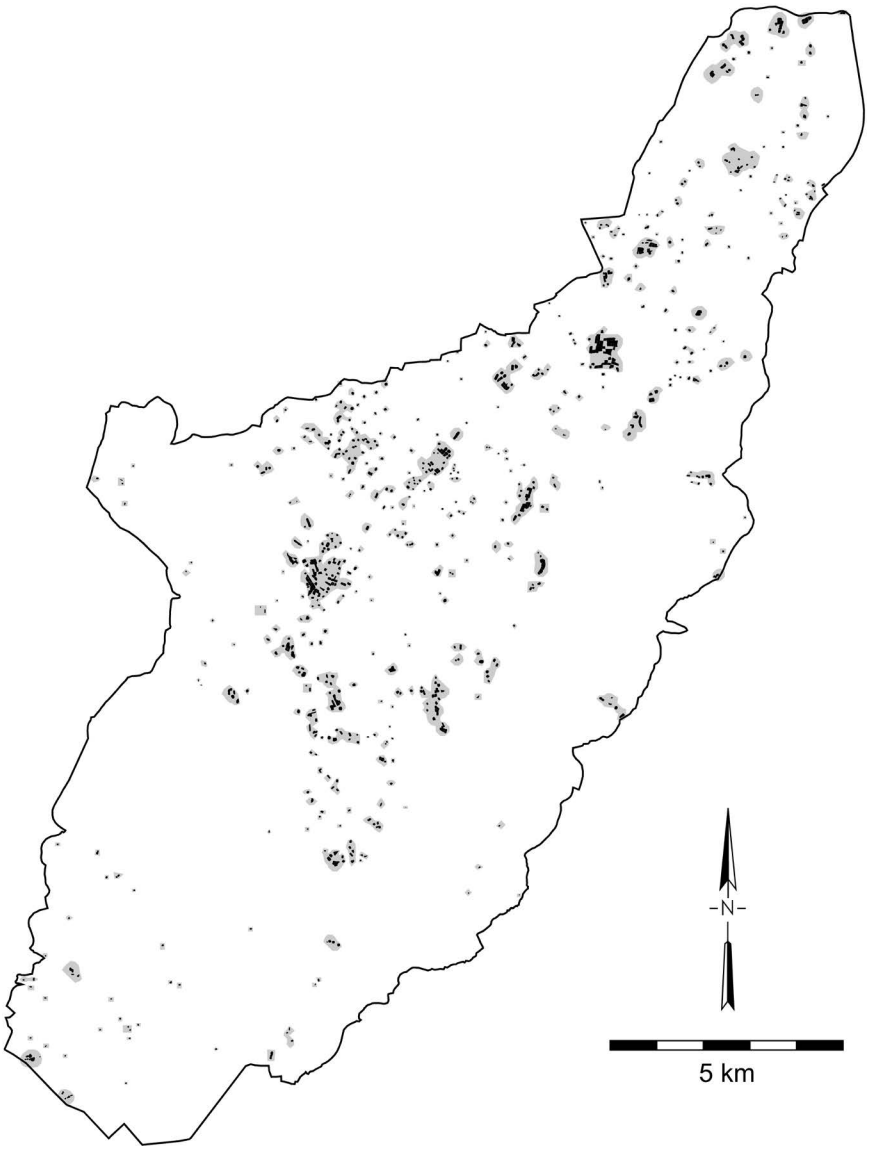


Figure 5.20. Collection units (black) clustered into Zhanguo-Han local communities (gray). Available online in color—see Appendix.

图 5.20 采集单位聚集形成战国 - 汉代地方性社区（灰色表示地方性社区，黑色表示采集单位，彩色图片可以从网络上获取，参见附录）

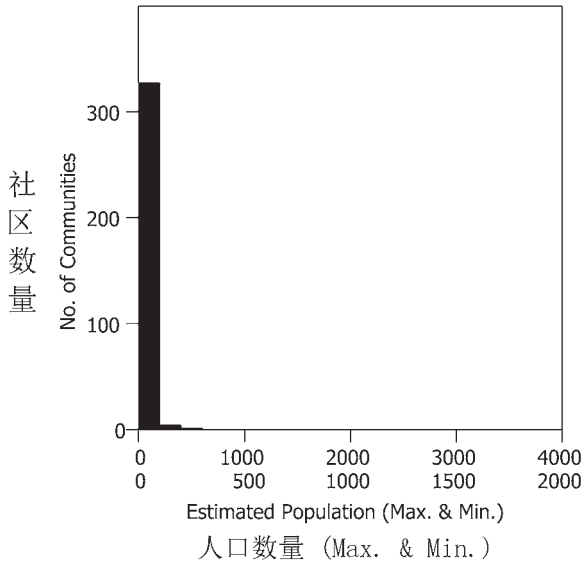


Figure 5.21. Histogram of Zhanguo-Han local communities by number of communities in each population range.

图 5.21 不同人口规模的战国 - 汉代地方性社区数量的柱状图

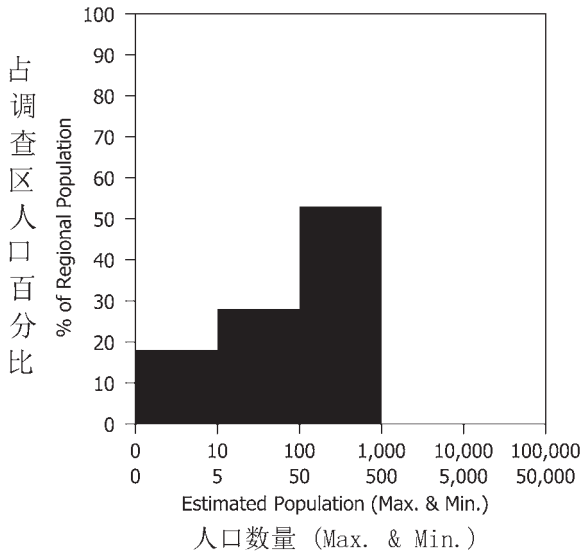


Figure 5.22. Histogram of Zhanguo-Han local communities by percent of regional population in each population range.

图 5.22 不同人口规模的战国 - 汉代地方性社区所占区域人口比例的柱状图

化。相比之前的时期，聚落更加分散，形成集群的趋势比较弱，很难划分出超地方性社区。

通过文献记载，我们知道了战国 - 汉代整体的政治环境，也非常清楚地知道当时的社会和经济中心在哪里。然而对于大凌河上游这个远离重要政治都城的偏僻地区，文献几乎没有提供什么具体的信息。化金沟可能是已知的、与大凌河上游区域临近的最为重要的战国遗址，该遗址正好位于调查区南部边界之外，在那里至今还保留着战国时期的夯土墙，城址的面积为 300 米 ×180 米。直到汉代才有了更加详细的历史文献资料。在大凌河上游调查区域的周边地区，有三个明确命名的汉代县城。白狼城，坐落于调查区域西南方向 5 公里处；石城县，可能对应着黄家店城址，在调查区域西南方向约 12 公里处；广都县，位于调查区域的北面，但具体位置不详。在大凌河上游调查区域内，似乎没有一个聚落的重要性可以跟汉代的一个县城相提并论。

这幅景象与考古记录完全一致。化金沟遗址和汉代县城的所在地可能拥有 5000 甚至更多的居住人口。调查区域内规模最大的战国 - 汉代的地方性社区只有 200 至 400 人，远远低于前者的人口水平，它显然应该从属于调查区域以外某个地位更高、有城墙的县城。由于调查区内缺少一个大型的中心性地方社区，所以在平滑处理后的居住密度图上（图 5.23），这个中等规模村落的重要性就被过分突显出来。尽管如此，可以清楚看到，这个村落并没有对区域人口产生任何强烈的向心力。整个调查区域的等级 - 规模图比以往任何时期更加凸出（图 5.24），A 值为 0.367，但是能够证明像之前各时期那类的小型自治政治单元存在的证据却完全消失不见了。

大凌河上游区域所见的这种乡村化显然不足以反映战国 - 汉代的聚落和人口趋势的整体情况。但它准确刻画了许多像大凌河上游这样的地区可能出现的各种趋势的特征，这些地区是那些较低层次的行政中心的边缘，而这些较低层次的中心又处于大型政治实体非常边远的位置。与之前的时期不同，战国 - 汉代的政治一体化已经达到了聚落考古分析力所不及的程度，因此必须在更广大的背景上进行解释。

辽代阶段
(200 – 1300 CE)

我们在此提到的辽代阶段包括了辽代（AD 907 – 1125）以及之前或之后在政治上非常动荡的时期。虽然辽的版图没有达到大汉帝国的最大版图，但比燕国的版图要大得多。与遥远的燕国和汉王朝的都城不同，辽代的中心都城中京就坐落在距离大凌河上游地区以北仅 75 公里的地方。所以，辽代大凌河上游的聚落分析考虑的是帝国中心地带，而不是边缘地带。

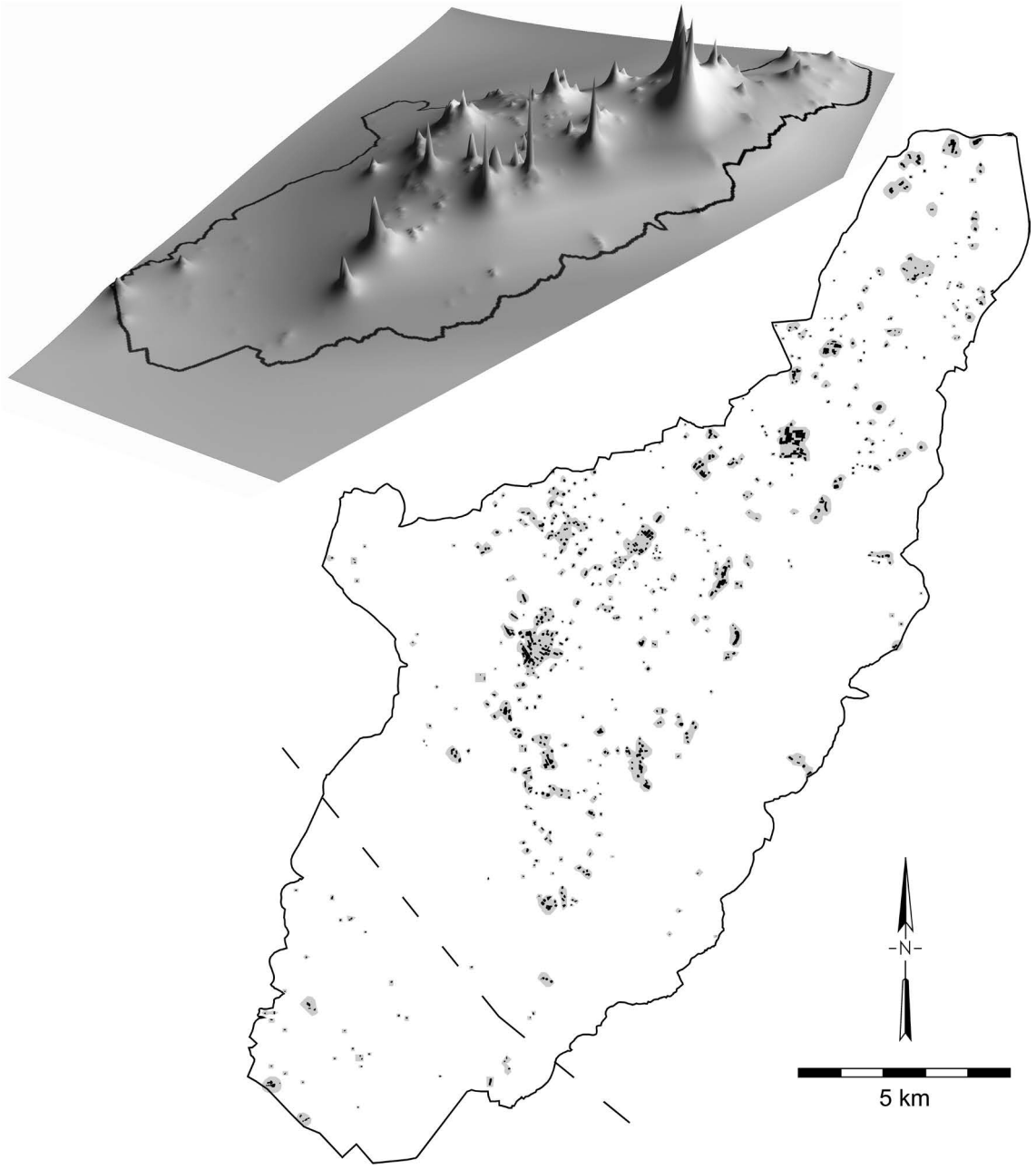


Figure 5.23. Smoothed surface representing Zhanguo-Han occupation and map showing possible southern limit of a supra-local community or district. Available online in color—see Appendix.

图 5.23 平滑处理的战国 - 汉代居住密度图和一个超地方性社区或行政区的疑似南端边界的地图（彩色图片可以从网络上获取，参见附录）

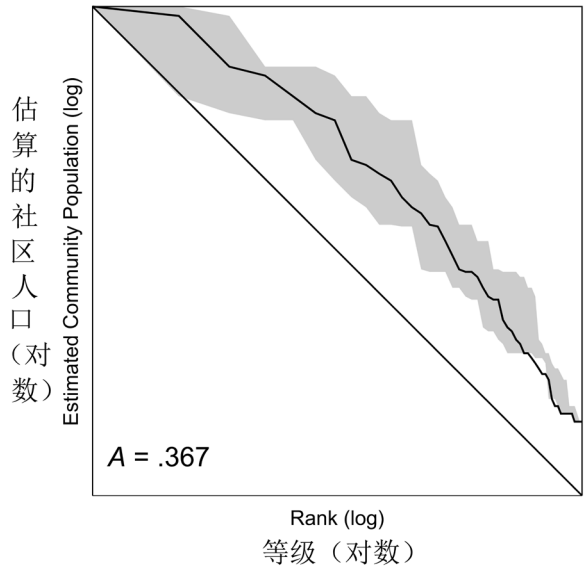


Figure 5.24. Rank-size graph of the entire Upper Daling survey area in Zhanguo-Han times with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.24 整个大凌河上游调查区域战国 - 汉代等级 - 规模图以及对应 90% 置信度的误差区域 (估算人口的中位数在 10 以下的小村落或农庄未被计入在内)

在大凌河上游的区域调查中，共获得 3957 个辽代阶段的陶片，它们来自于 1413 个采集单位，这些采集单位的总覆盖面积为 285 公顷（图 5.25)。然而，所有这些数据中一个至关重要的部分却并非由通常的调查方式得来。历史上记载的作为中级管理中心的利州城就位于大凌河上游调查区域内，正好被今天的喀左县城叠压。在喀左县城的中心，保存着一座辽代的佛塔和一座寺庙，由于这一地区已经完全被现代的建筑和道路覆盖，因此，根本无法用常规的方法进行调查。

幸运的是，近年来，当地进行了许多的建设活动，从而为当地的文化遗产官员提供了一个很好的观察和记录基本建设发现的考古遗物的机会。事实上，喀左县城内的基础建设发掘没有发现任何早于战国 - 汉代的遗存。因此，在对更早期的调查结果进行分析时，我们就不必对这座无法进行调查的城市的存在给予特殊的考虑。战国 - 汉代的遗物非常少见，即使在喀左县城周边开展过调查的地区，战国 - 汉代的遗物数量同样十分稀少。很显然，喀左县城所在的区域，战国 - 汉代的居住遗迹极少，调查地图中缺失的那一小部分数据也不需要作特殊的补偿。

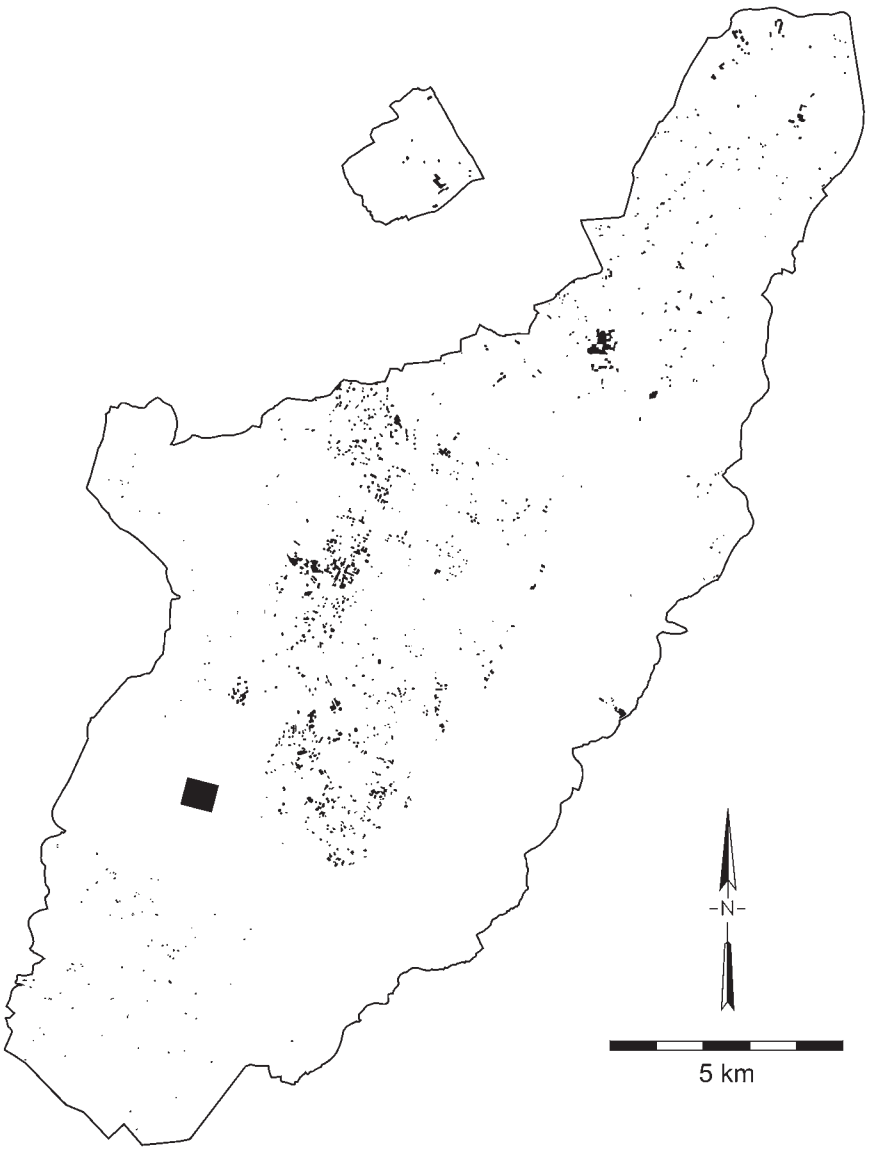


Figure 5.25. Distribution of collection units with Liao period sherds. Available online in color, and data available in the online GIS dataset—see Appendix.

图 5.25 辽代阶段陶片采集单位分布图（本插图的彩色版本可以从网络上获取，数据可以从网络上的 GIS 数据集获取，参见附录）

that covered a total area of 285 ha (Fig. 5.25). A vitally important piece in these data, however, did not come from survey data in the usual way. The historically known mid-level administrative center of Lizhou is located in the Upper Daling survey area, directly under the modern city of Kazuo. A tall pagoda and a temple dating to Liao times have been preserved within the area of downtown Kazuo, but this area could not be surveyed by the usual methods because it is entirely covered over by modern buildings and paved streets.

Fortunately quite a lot of construction activity has occurred in this zone in the recent past, and this has provided local cultural heritage officials a good opportunity to observe and record any archaeological remains encountered in excavations for foundations. Materials of periods earlier than Zhanguo-Han are virtually never seen in construction excavations within modern Kazuo city. Thus no special considerations arise from the presence of an unsurveyable city for analysis of the survey results for those earlier periods. Zhanguo-Han materials are found only very rarely. Zhanguo-Han materials are also quite scarce in the area around the modern city where survey can be carried out. Thus it is clear that Zhanguo-Han occupation in this sector of the survey area was minimal, and the small amount of data missing from the survey maps requires no special compensation.

This is decidedly not the case for Liao times. The walls of Lizhou are recorded in historical sources as enclosing an area 500 by 600 m, which is firmly located in the eastern sector of modern Kazuo in an area that corresponds well to these dimensions. There is also an area extending westward some 200 m from the western wall of Lizhou in which abundant Liao-period remains are found. A short distance outside the survey area to the south are the remains of the Liao dynasty walled town of Longshanxian. Sherds dating to the Liao period are dense on the surface within the remains of Longshanxian's walls and in the surrounding area extending 100 m or more beyond the walls. In the Chifeng survey region, the Liao dynasty town of Songshanzhou could be surveyed because it is not covered by modern occupation, and sherd densities there were also high, averaging 2.47 sherds/m^2 (Chifeng 2011). The Liao period map for the Upper Daling region has thus been augmented to include a rectangle of 500 by 600 m to represent the walled area of Lizhou as well as another rectangle of 200 by 600 m along the western wall to represent the known area of occupation outside the walls. These rectangles have been assigned surface sherd densities of 2.5 sherds/m^2, based on those observed at the generally similar Liao town in the Chifeng region.

The Liao period population of the survey area is estimated at 8,500–17,000 people, a substantial rebound from the survey area's Zhanguo-Han low (Fig. 5.9). Fully 84% of the population of the survey area lived in Lizhou (Figs. 5.26 and 5.27). The remaining 1,500–3,000 people who did not live in Lizhou were broadly dispersed across the landscape, mostly in innumerable small hamlets and farmsteads, although four small but highly compact villages can also be discerned (Fig. 5.28). The largest of these four local communities has an estimated 150–300 inhabitants; the smallest only 25–50 (Fig. 5.29). The broad dispersal of farmsteads and small hamlets may result from intensive cultivation to provision Lizhou, as well as to meet the demands of imperial taxation. It would be practical for farmers investing substantially increased labor in cultivation to live on or near the fields that they farmed, a circumstance known to produce such a pattern in other contexts (Chisholm 1970; Drennan 1988; Peterson and Drennan 2005; Stone 1993).

For the first time in the sequence, the rank-size pattern indicates strong integration across the entire survey area, with an *A* value of -3.535 (Fig. 5.30). This is an extreme example of the kind of log-normal or primate pattern that did not appear for any previous period. It is also not at all surprising, since precisely this was already well known from historical sources. This rank-size graph from archaeological information thus does not add much to our knowledge of Liao period organization. It does, however, show how the rank-size pattern for thorough regional integration differs from the patterns we have observed for all previous periods—rank-size patterns from which we have concluded that full regional integration was not present.

Historical documentation about administrative centers outside the Upper Daling survey area also makes possible a similar evaluation of the methods applied to the delineation of districts for earlier periods. The Lizhou supra-local community or district is known to be a county (Fusuxian) in the Liao administrative structure. Longshanxian was a

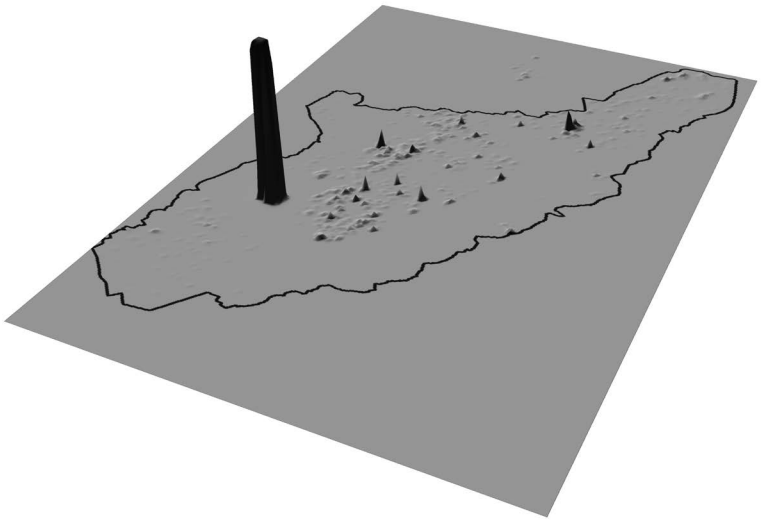


Figure 5.26. Unsmoothed surface representing Liao period occupation. Available online in color—see Appendix.

图 5.26 未经平滑处理的辽代阶段居 住密度图

（彩色图片可以从网络上获取，参见附录）

到了辽代，情况就绝对不是这样了。文献中记载的利州城坐落在今天喀左县城东部，面积为 500 米 ×600 米。由利州城西城墙向西延伸约 200 米的范围内，发现了丰富的辽代遗物。在调查区南端以外非常近的地方，是辽代龙山县城。在城墙内以及城墙外约 100 米左右的地表，我们发现了密集的辽代陶片。在赤峰调查区，辽代的松山州由于未被现代建筑覆盖，因此可以进行调查，发现陶片密度也非常高，平均达到 2.47 个陶片 / 平方米（赤峰 2011）。于是，我们扩大了大凌河上游区域辽代的地图，将一个 500 米 ×600 米的长方形区域（代表利州城的面积）和一个 200 米 ×600 米的长方形区域（代表西城墙外已知的居住面积）包括进来。根据在赤峰地区大体相似的辽代城址所观察到的数据，我们将 2.5 个陶片 / 平方米作为这两个长方形区域的地表陶片密度。

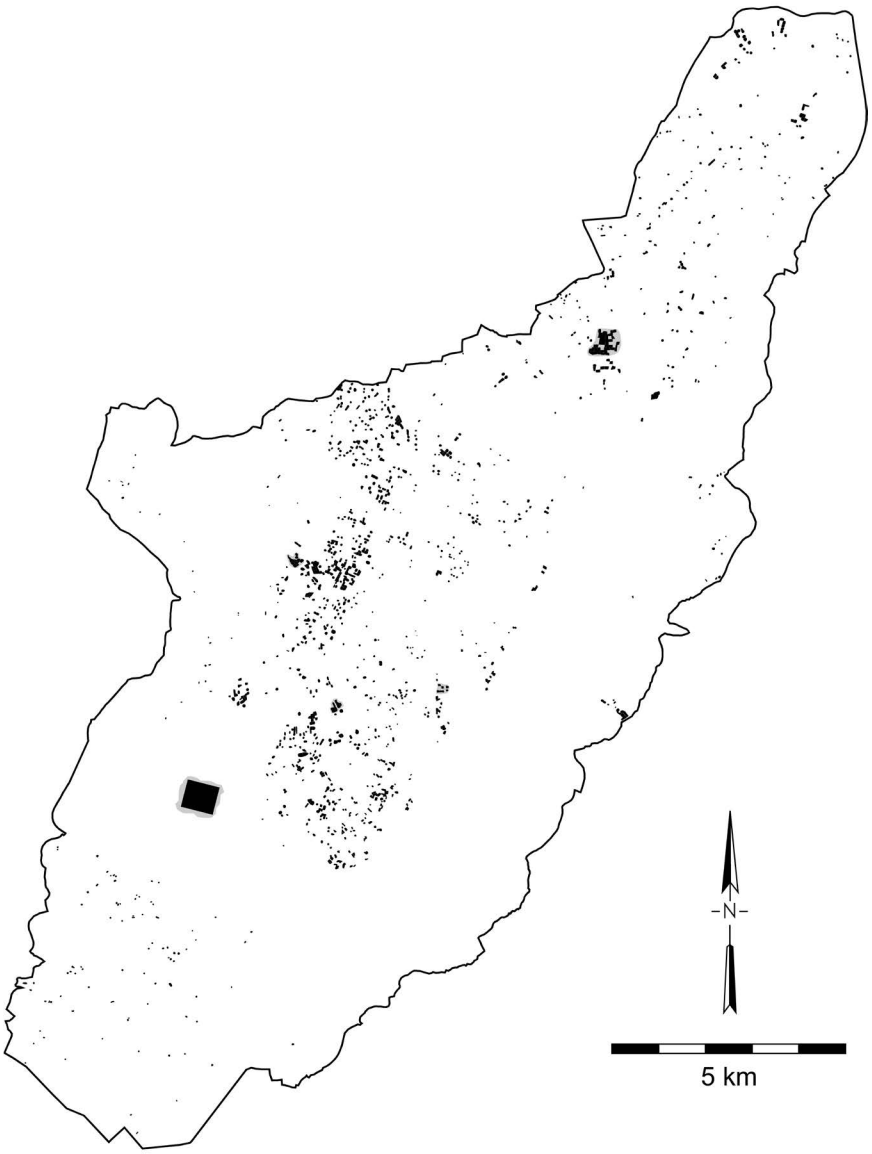


Figure 5.27. Collection units (black) clustered into Liao local communities (gray). The vast majority of collection units are not shown here as clustered into any local community because they correspond to very low-density occupation interpreted as dispersed farmsteads rather than nucleated communities. Available online in color—see Appendix.

图 5.27 采集单位聚集形成辽代阶段地方性社区（灰色表示地方性社区，黑色表示采集单位，大多数采集单位的居住密度非常低，这些低密度的居住状况应当被看作是分散的农庄而非核心型的社区，因而没有将它们划分到任何地方性社区中，彩色图片可以从网络上获取，参见附录）

根据估算，调查区域内辽代阶段的人口数量为 8500 至 17000，是对战国 - 汉代较低人口水平的一个巨大反弹（图 5.9）。84% 的人口居住在利州城（图 5.26 和图 5.27），剩余的 1500 至 3000 人则广泛地分布在调查区域内。尽管可以看到四个小型但高度紧凑的村落，但大部分人还是居住在数不胜数的小村子和农庄里（图 5.28）。在这四个地方性社区中，规模最大的有大约 150 至 300 人，最小的仅有 25 至 50 人（图 5.29）。农庄和小村落的广泛分布可能是缘于供给利州城的精耕细作，以及满足帝国税收的需要。农业生产需要投入大量劳动力，因此农民住在田地边上或附近是实际的需要，这种情况所产生的模式在其它的环境中也出现过（Chisholm 1970; Drennan 1988; Peterson 和 Drennan 2005; Stone 1993）。

从等级 - 规模图中，我们看到，在大凌河上游地区的年代序列中第一次出现了强烈的、覆盖整个调查区域的一体化，A 值为 -3.535（图 5.30）。这是一个极端的例子，如此形态的对数正态分布曲线或首位型结构在之前的任何一个时期内都不曾出现过。由于高度一体化的事实已经被历史文献所证实，因此，这个结果也就不值得大惊小怪。从考古信息得到的等级 - 规模图并未将我们对辽代社会组织的认知提升多少，然

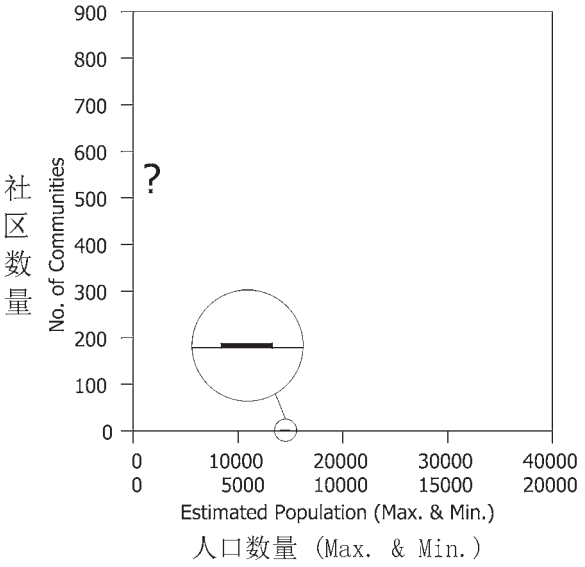


Figure 5.28. Histogram of Liao local communities by number of communities in each population range. The question mark at the left is a reminder that there is a large number of dispersed farmsteads that have not been counted as true local communities, and that even the four nucleated villages are extremely small compared to Lizhou.

图 5.28 不同人口规模的辽代阶段地方性社区数量的柱状图（左侧的问号是为了提醒读者，大量分散的农庄没有被当作真正的地方性社区而计入在内，与利州相比，即便是那四个核心型的村落都显得非常小）

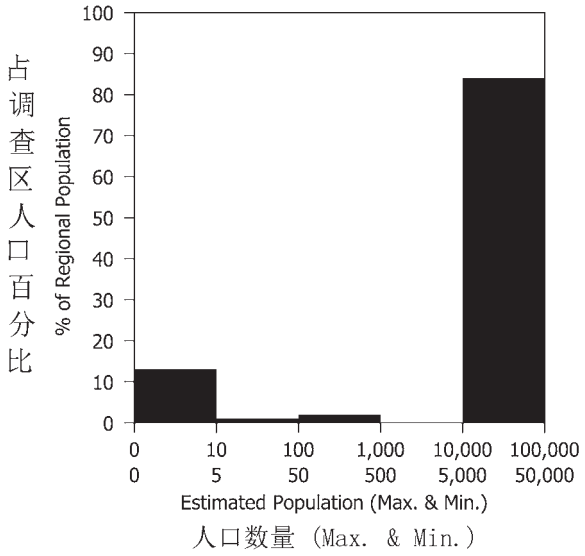
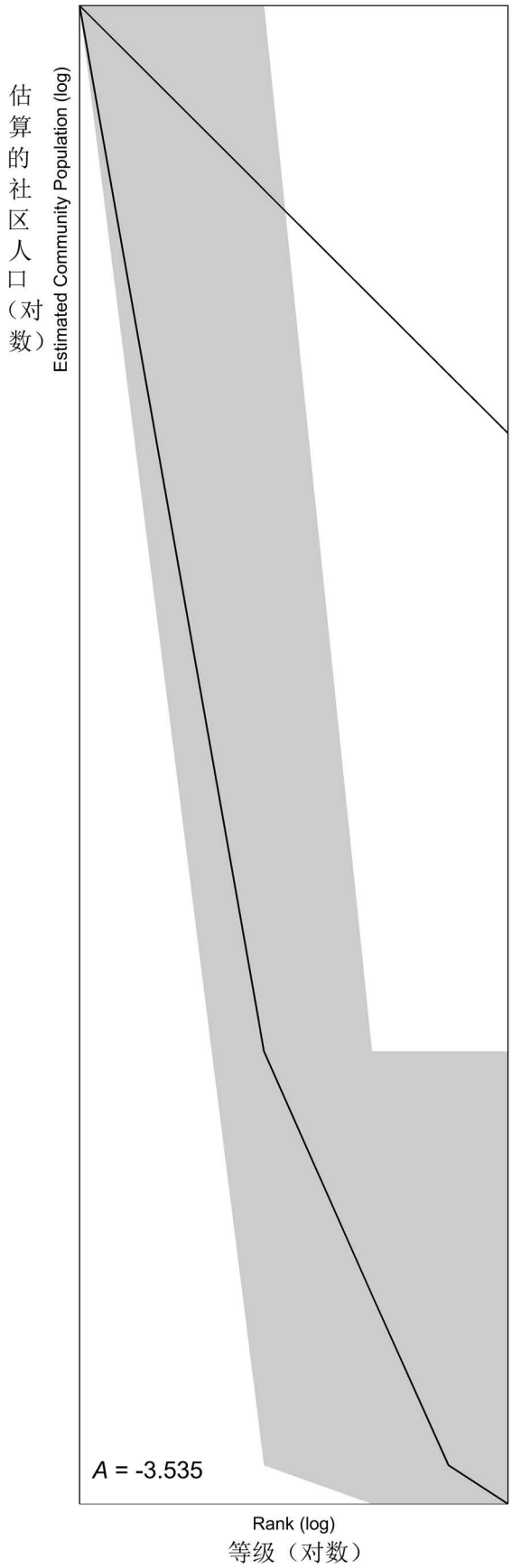


Figure 5.29. Histogram of Liao local communities by percent of regional population in each population range.

图 5.29 不同人口规模的辽代阶段地方性社区所占区域人口比例的柱状图

walled county seat 30 km south of Lizhou, subordinate to a different mid-level administrative center known as Tanzhou. A third walled town, Fushuxian, 28 km north of Lizhou, headed a county subordinate directly to the Liao capital at Zhongjing. If Lizhou's district reached halfway to the neighboring county seats, then it would be about 30 km across, and its northern extreme would fall within the boundaries of the archaeological survey. As it turns out, within the survey area, settlement density, decreasing northward from Lizhou, reaches a minimum, suggesting a limit to the Lizhou district, and then shows signs of increasing again toward Fushuxian still farther north. This is the basis of the line suggesting a limit to the Lizhou district in Fig. 5.31. This limit occurs at just about the expected 15 km distance derived from historical knowledge of neighboring districts. We thus conclude our discussion of the final period, and this volume, with a second example in which the analytical approaches applied to delineating community organization in the archaeological record in chapters 4 and 5 converge with what is known from historical sources.



而，它向我们展示了区域一体化的等级 - 规模图与所有之前时期的非区域一体化的等级 - 规模图的区别。

历史文献关于大凌河上游调查区域之外的行政中心的记载也使得我们可以对较早时期行政区的划分方法进行类似的评估。在辽代的行政结构中，位于利州的超地方性社区或行政区被称之为县（阜俗县）。龙山县是一座有城墙的县城，坐落在利州以南 30 公里处，附属于另一个中级行政中心潭州。第三个有城墙的县城是富庶县，坐落在利州以北 28 公里处，隶属于辽代的首都中京。如果利州的行政区延伸到距离相邻县城一半的位置，那么，它的覆盖范围将达到约 30 公里，并且其最北端将在考古调查的范围之内。最终的结果表明，在调查区域内沿利州城以北的方向上，聚落密度逐渐降低，并最终达到最低值，表明此处是利州行政区的边界。接着又有迹象显示，在朝着更北面的富庶县的方向上，聚落密度逐渐增加。这是图 5.31 中判断利州行政区边界的依据。这个界限正好出现在约 15 公里的位置，与史书中对相邻行政区的记载一致。在第四章和第五章里应用考古数据划分社区组织的方法运用在这里的结果与历史文献的记载相符，我们就此结束最后一个时期的讨论以及本报告。

Figure 5.30. Rank-size graph of the entire Upper Daling survey area in Liao times with error zone for 90% confidence. (Small hamlets or farmsteads with a median population estimate less than 10 are omitted.)

图 5.30 整个大凌河上游调查区域辽代阶段等级 - 规模图以及对应 90% 置信度的误差区域（估算人口的中位数在 10 以下的小村落或农庄未被计入在内）

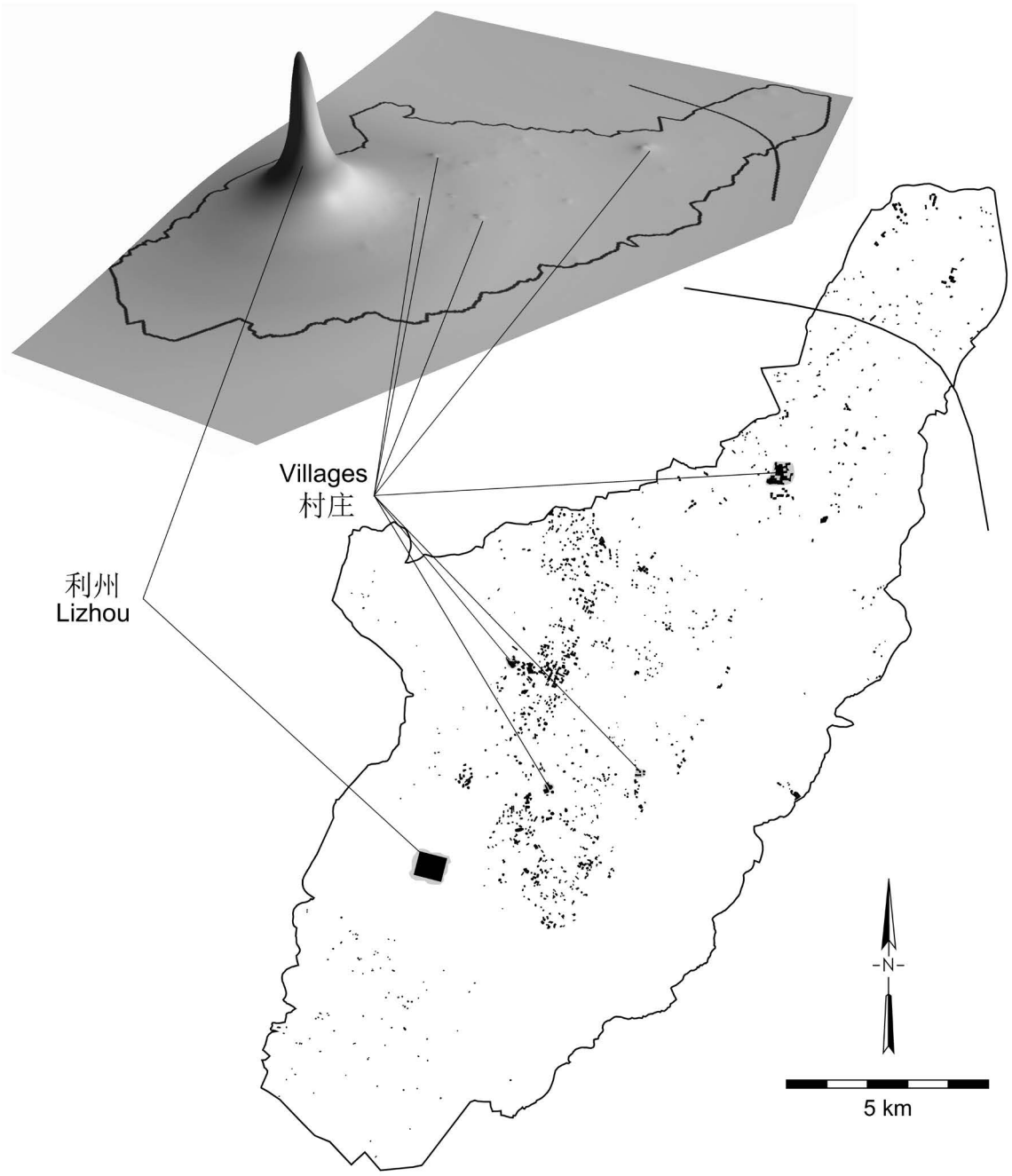


Figure 5.31. Smoothed surface representing Liao occupation and map showing possible northern limit of the Lizhou supra-local community or district. Available online in color—see Appendix.

图 5.31 平滑处理的辽代阶段居住密度图和超地方性社区或行政区（利州）的疑似北端边界的地图（彩色图片可以从网络上获取，参见附录）

Appendix

Electronic Access to Color Illustrations and the Full Dataset

Detailed data from the research reported on in this volume are available in digital form online in the Comparative Archaeology Database provided by the Center for Comparative Archaeology at the University of Pittsburgh. The objective of the online database is to provide detailed primary data in a form directly amenable to further analysis by computer, and thereby complement printed volumes such as this one in serving the fundamental function of an archaeological report—making available the full datasets upon which conclusions are based so that interested scholars can explore them further. It is hoped that this will facilitate comparative analysis firmly grounded in archaeological data. Since digital media, standard formats, and means of access all evolve, and since the Comparative Archaeology Database will attempt to keep pace with this evolution, it is impossible to provide permanently valid full descriptions here of the contents of the database and of means to access them. As of this writing, the detailed datasets on which this study is based are directly accessible to Internet users via the following URL:

http://www.cadb.pitt.edu/

The files containing the data can be downloaded via the tools provided in web browsers such as Chrome, Firefox, Opera, Safari, and Internet Explorer. An alternative means of contacting the Comparative Archaeology Database is by e-mail:

cadb@pitt.edu

Current information about the datasets and access to them (as well as about other contents of the Comparative Archaeology Database) can be obtained via the Internet or e-mail as described above.

Stratigraphic Data

Complete details of each of the stratigraphic tests discussed in Chapter 3 are available for browsing. These data include stratigraphic profiles, and the specific context that corresponds to each individual excavation unit, including the specific contexts and associations of the radiocarbon samples discussed in Chapter 2.

Magnetometry Data

Complete results of the magnetometer survey discussed in Chapter 3, and the relationship of magnetic anomalies with excavation data are available for browsing. High-resolution images of the magnetometer survey are available for download.

Quantitative and Spatial Data

The complete dataset for the Upper Daling settlement study reported in chapters 4 and 5 is available in a variety of formats. Since these may change through time, they are not described in detail here. The objective, however, is to provide formats that are most accessible for import to the widest possible array of application software for further examination and analysis. The settlement data are provided in full detail, collection unit by collection unit for the entire survey zone. There are both quantified data on materials recovered from each collection unit and the exact location of each collection unit as a GIS polygon. Both settlement data (period by period) and environmental information are provided in the form of map layers for import to GIS software. Quantities of all materials recovered from each excavation unit (see Stratigraphic Data, above) are also provided.

Color Images

Many of the photographs, maps, and other graphics that appear in black and white as illustrations in this volume are also available as color images in the Comparative Archaeology Database. This includes settlement and environmental maps, which are available both in data formats for analysis (see Quantitative and Spatial Data, above) and in color image formats for browsing.

附录

彩色插图和完整数据集的电子获取方式

关于本报告涉及的详细研究数据，可以通过匹兹堡大学比较考古学中心的“比较考古学数据库”在线查询。建设在线数据库的目的是提供详细的原始数据，便于直接利用计算机进行更深入的分析，从而达到对印刷版本的考古报告基本功能的补充作用。由于提供了本报告研究结论所依据的全部数据集，感兴趣的学者就可以进行进一步的分析。我们希望能够促进高度依赖于考古数据的比较分析。考虑到数字媒介、标准格式和获取方式的不断升级，并且“比较考古学数据库”也将努力跟进这些改变，因此，对于数据库的内容以及它们的获取方式，我们不可能在这里提供永久有效和完全的描述。在本报告编写之时，详细的数据集对网络用户直接开放，访问地址为：

http://www.cadb.pitt.edu/

包含数据的文件可以通过网页浏览器（如 Chrome、Firefox、Opera、Safari 和 Internet Explorer）提供的工具下载。另外，用户也可以通过电子邮件与“比较考古学数据库”取得联系：

cadb@pitt.edu

有关数据集及其获取方式（或者“比较考古学数据库”的其他内容）的信息，可以通过上述互联网或电子邮件的方式获得。

地层数据

本报告第三章中讨论的发掘探方的完整地层信息均可在线浏览。这些数据包括探方剖面图和每一个发掘单元的相关背景，以及第二章中讨论的碳十四样本的背景和关联。

磁力勘测数据

本报告第三章中讨论的磁力勘测的完整结果，以及磁力异常现象与发掘数据的关系均可在线浏览。还可以下载高分辨率的磁力勘测图片。

定量和空间数据

本报告第四章和第五章中报道的大凌河上游聚落研究的完整数据集以多种格式呈现。考虑到这些格式可能会随时间而变化，在此不对它们进行细致描述。不过，我们的目的是提供能够导入到尽可能多的应用软件，且使用最为广泛的数据格式，以满足进一步检验和分析的要求。提供的聚落数据非常详尽，包含整个调查区域的每一个采集单位，既有每一个采集单位获取遗物的定量数据，又有每一个采集单位的确切地点（表现为 GIS 多边形）。各个时期的聚落数据和环境信息均以图层的方式呈现，可以被导入到 GIS 软件中。此外，还提供了每一个发掘单元（参见地层数据）出土遗物的数量信息。

彩色图片

本报告以黑白形式出现的许多照片、地图和其它图像，在“比较考古学数据库”中，都提供了彩色版本。这包括了聚落和环境地图，既有分析所用的数据格式（参见定量和空间数据），也有可用于浏览的彩色图像格式。

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