FROM THE field

Doing Regional Archaeological Settlement Patterns Survey in Northeast China

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For the better part of the last decade, my colleagues and I have been doing regional archaeological settlement patterns survey in the Western Liao River Valley of northeast China, one of four areas outside the Central Plain where complex societies arose comparably early. The first of these complex societies emerged during the Hongshan period (4500 BCE–3000 BCE), and is best known today for their jade-yielding burials and ceremonial architecture. Although these aspects of Hongshan society have been studied for many years, until recently we knew little about the regional distribution of residential occupation in areas with ritual remains. Our work has focused on (among other things) documenting the human communities that built and used Hongshan monuments in two separate regions of the Western Liao River Valley—in Chifeng, eastern Inner Mongolia, and in Kazuo, western Liaoning Province—for comparison with those of other areas.

In both regions, we followed standard procedures for systematic pedestrian survey, covering a total of about 1,200 square kilometres in Chifeng and 200 square kilometres in Kazuo. Teams of three to five people walked back and forth across the landscape at intervals of 100 metres in Chifeng and 50 metres in Kazuo. Navigation was by compass, GPS, and printouts of high resolution satellite imagery of the regions, with teams covering about 1 square kilometre or more per day. As surface remains of ancient occupation were encountered on survey, teams stopped to record the areas over which these remains were spread and to collect samples of ceramic sherds. Areas of occupation larger than the target size for each region (1 hectare in Chifeng and 0.25 hectare in Kazuo) were carved up into smaller units and collected separately to more accurately assess the size and occupational densities of multi-component settlements during different archaeological periods. All ceramics were carried back to our field lab for identification as to the archaeological period(s) represented. Sherd densities were later calculated for each collection unit by period to be used as proxies for prehistoric population. The locations and extents of collection units were drawn directly on the printed satellite imagery and later digitized into electronic maps. The resulting GIS were then linked to databases of the analyzed ceramics recovered from each collection unit and period-by-period maps of human occupation across each survey area were produced.

Upon completion of fieldwork, these maps were used to create GIS surfaces (one for each archaeological period) to help us delineate prehistoric community structure in the two survey regions. In these surfaces, concentrations of ancient occupation appear as peaks rising from flat unoccupied planes, whose bases demarcate clusters of settlements; the higher the peak, the larger the settlement cluster's estimated population. We have labelled these clusters *small local communities* (groups of villages, hamlets, and/or dispersed farmsteads) because their residents appear to have been in more frequent interaction with one another than with their more distant neighbours. Manipulating these surfaces mathematically reveals even larger sociospatial structure (where this exists) by grouping small local communities into larger more populous ones—entities we are accustomed to calling *supra-local communities, districts,* or *polities*. Although complex societies can differ in terms of demography, composition, or internal dynamics, they are always supra-local in scale.

During the Hongshan period, the Chifeng region was home to some 4,000 to 8,000 people, while the population of the much smaller Kazuo survey area is estimated at between 750 and 1,500. In both regions, most of these people lived in settlements organized into small supra-local communities or districts; we identified about twenty of these in Chifeng, and four in Kazuo. This is the equivalent of one district every 50–60 square kilometres. 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. Each

The power of divination was reserved for the ruler, who possessed the vessels necessary for performing rituals. The richly decorated bronze vessels of the Shang Dynasty have been described as "the politically all-important ritual symbols" (Chang 1994, 68). The significance of these vessels went beyond the considerable effort involved in acquiring tin and copper and the skill needed to cast such elaborate forms. The bronze vessels were used in rituals that were the exclusive domain of royalty and nobility as essential tools of political authority, tying together ritual, warfare, and political power. The power of the rulers flowed not from their identification with a god, but from their

was composed of as many as 10 small local communities, often with a larger one in the centre. Chifeng districts ranged from 3–5 kilometres across and had estimated populations of between 100 and 500. In Kazuo, supra-local communities incorporated 100–700 people, and measured 4–8 kilometres across. In neither region is there indication of any larger or more central district that dominated others, so each supra-local community is taken to be a small, independent polity or "chiefdom," although similarities in material culture indicate a high degree of interaction between them. Differentiation in Hongshan burial treatment suggests social hierarchy was the central organizing principle of these communities, while concentrations of ritual architecture in the central settlements of districts highlight the important integrative role that ceremonial activities must have played in community coalescence.

Compared to other chiefdoms, the Hongshan districts of Kazuo and Chifeng were spatially and demographically very small. Early complex societies in China's Yellow River Valley, for example, were 10 kilometres or more across and organized populations two to five times greater than those of their Hongshan contemporaries. Outside Asia, several well-known chiefdoms (Cahokia, Moundville, Middle Formative Basin of Mexico, Regional Classic Alto Magdalena, Early Intermediate Santa Valley, and pre-contact Hawai'i among them) had district populations ranging from 4,000 or 5,000 up into the tens of thousands, spread over areas many tens or hundreds of kilometres across. Regional populations and occupational densities in these areas were corresponding higher than in the Hongshan period in northeast China. Unlike Chifeng and Kazuo, several were also the only chiefly polity present in their regions, while others were one of a small handful of polities. If the Chifeng and Kazuo survey regions are representative of the larger area of which they are a part, the entire Western Liao River Valley may have been home to thousands of supra-local communities during the fifth and fourth millennia BCE.

Our research has contributed to a better understanding of the origins of social complexity outside China's Central Plain by documenting variation in chiefdom organization at the regional scale. The next stage of our research includes studying the organization of statuses and economic activities within Hongshan communities through remote sensing of previously identified occupation areas, the analysis of surface-collected household artifact assemblages, and stratigraphic excavation. In so doing, we hope to arrive at a more comprehensive understanding of the internal dynamics of these chiefly communities for comparison with others around the world. ▲

FIGURE 12.15 Dr. Christian Peterson on survey in the Chifeng region in 2007.
The Chifeng International Collaborative Archaeological Research Project.

essential role in connecting the human world with the divine. Archaeologists are able to trace the outlines of elaborate rituals of feasting and sacrifice used by Shang rulers to harness the power of their ancestors and of divine forces.

On Shang sites, elite burials exhibit a significant focus on feasting (Nelson 2003). This is a break from earlier periods, when evidence for feasting was found in burials of people from all levels of society. The emphasis on feasting at elite burials appears to indicate that during the Shang Dynasty the world of the ancestors was socially stratified. As Sarah Nelson (2003) writes, "By this point, social stratification