

CHAPTER 5

What the Stones Had to Say

There is a wide range of stone, or lithic, material at Keatley Creek. There are fire-cracked rocks, granite boulders used as anvils, sandstone slabs for sharpening bone awls, coarse quartzite spalls, cherts, fine-grained igneous rocks, obsidian, finely ground nephrite celts, mica sheets, ochres, and a number of specialty items including shaped graphite, hammered native copper, carved serpentine, shaped marble, and slate pendants. There is a great wealth of information derived from all these various materials. In this chapter, I will focus on some of the highlights.

TOOL FORMATION PROCESSES

Materials for heating rocks, anvils, and quartzite spalls were available in the immediate vicinity of Keatley Creek, either eroding from the till or from the glacial outwash terraces of the Fraser River. When people needed these materials, they simply went out and gathered them. Stone materials for making flaked stone knives, scrapers, and projectile points were not so readily available. The nearest source for these materials was in the Hat Creek Valley, located 20 km away as the crow flies, over the Clear Range mountains where people went during the summer and fall to hunt (see Figures 1.2, 2.5). Here, there were some deposits of cherts, but primarily there were deposits of very fine, almost glassy, black, igneous rocks known as trachydacites. This type of material occurred as nodules up to 30 cm long in the highland streambeds. It seems certain that some of this material was worked in the mountains to obtain specialized shapes, such as roughed out versions of the bifacial knives (bifaces) used by hunters, and the long endscraper blanks used by women to work on hides (Figure 5.1). When people returned to Keatley Creek from their summer and fall hunting and plant gathering, they must have brought with them these specialized tool blanks. They would need these tools for winter work and spring food-gathering activities. It is also clear that people brought along other cobbles of unworked stone, or cores, to make small flake tools whenever they were required to cut or scrape something during the winter or spring. We find exhausted cores and considerable amounts of flaking debris in the housepits at Keatley Creek. Tools made from the cores seem to have been made “expediently,” or as needed. They were generally small, with some evidence of light resharpening, and often discarded after a short period of use. Larger flakes with longer use potential were sometimes stored against the walls.

The amount of stone available for performing tasks at the pithouses such as scraping hides, making bows and arrows, baskets, clothing, nets and fishing gear, and vari-

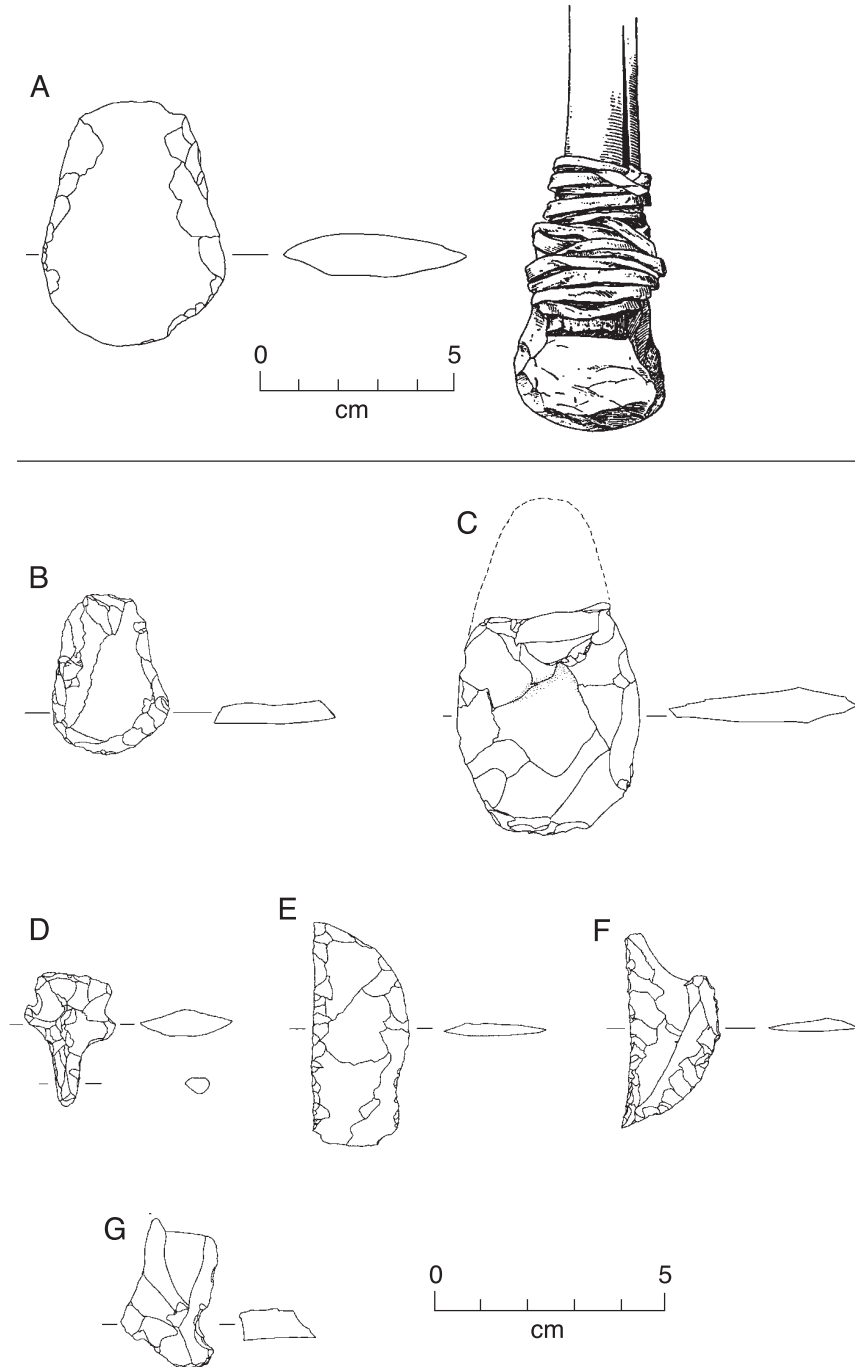


FIGURE 5.1. Some of the stone artifact types present at Keatley Creek include spall and end scrapers used by women for working hides (A, B), bifaces used as knives by hunters while on long forays (C), drills (D), expedient pressure-retouched knives (E, F), and notches (G).

ous ornaments was limited because of the 20 km distance from the mountain stone sources. In the winter, no more stone for tools could be obtained from the distant, snow-covered and frozen sources. The small size of most tools may have been one way of economically using the cores that were brought to the site; and the expedient manufacture of these tools as needed probably was one way of using only what was necessary from the cores for the infrequent and uncertain manufacturing activities carried out in the houses. Bifaces were also resharpened or finished, and other tools such as drills, hiderscrapers, and arrowheads or spearheads were made in the pithouses. These tools were kept and resharpened over long periods of time until they broke or wore out. Much of the small flaking debris became incorporated in the floor deposits. Because of the dusty nature of the floor sediments, a number of smaller tools seem to have been lost or covered with dust and forgotten, including several unbroken arrowheads. When large chipping debris became too dense or cumbersome, it was undoubtedly collected and dumped on the roof or rim.

Other materials such as nephrite, ochre, and obsidian also required special trips to procure, or else had to be obtained via exchange with other groups. Because these items are so infrequent in the overall artifact assemblage, I will not deal with them in detail.

BASIC DISTRIBUTIONS

The recording of artifacts in terms of small subsquares only 50 cm on a side adds a great deal of paperwork and analysis to archaeological projects. However, if spatial distributions are important for research goals, this is one of the best and most efficient ways of recording the necessary information. Being able to determine the spatial distributions of artifacts across the floors of housepits was very important for the FRICGA project since this information could tell us what happened, where it happened within the housepits, and how people arranged themselves both socially and economically within their dwellings.

Fire-cracked rocks

As an example of what basic distributions can tell archaeologists, let us examine the lowly, often denigrated and ignored, fire-crack rock. This is a class of relatively ordinary rocks that have been heated in a fire. In a housepit, these rocks were commonly placed in birch bark containers with water, dried roots, berries, and fish to make soups. The hot rocks quickly made the water boil. Outside the pithouses, rocks could be heated for use in roasting pits, sweat baths, and a variety of other minor activities requiring heat. After being heated and suddenly cooled by placing them in water a number of times, the rocks cracked and broke apart. When they became too small to use they were discarded and new ones took their place.

What could the distribution of fire-cracked rocks tell us about activities or social organization in housepits? Jim Spafford undertook an analysis and found out three very important things. First, as already noted in the discussion of roof formation pro-

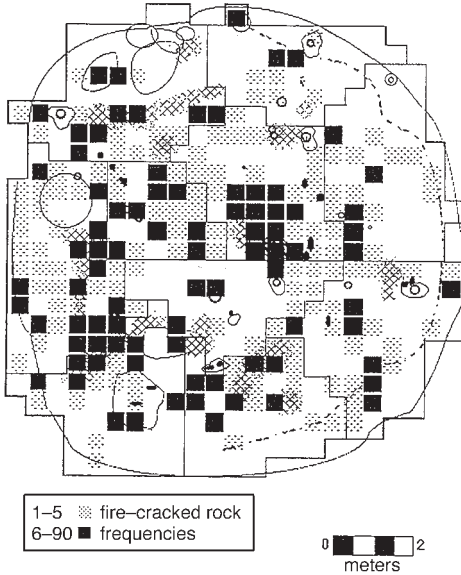
cesses, the analysis of fire-cracked rocks in the roof showed there were particular parts of the roof where people threw refuse that might be bothersome, especially bits of sharp-edged fire-cracked rock (see Figure 3.9). Presumably, these were areas of the roof that were not used or walked upon very much; they also correspond to the north-east part of the roof that has the least amount of winter sun.

Second, the distribution of fire-cracked rocks across the floor of the largest house-pit (HP 7) revealed a number of very distinct areas of dense rock deposits (Figure 5.2). What could this reveal about the fundamental divisions of space in this housepit, especially about the activity versus family divisions within the house? Melena Nastich, one of the few ethnographers of the Lillooet, recorded bits of Lillooet oral history. One of these selections, quoted in chapter 2, recounted how each family had its own pile of cooking rocks in the traditional houses. If you examine Figure 5.2 carefully, you will see there is a strong tendency for each dense cluster of fire-cracked rocks to be associated with a fire-reddened, or hearth, area. This is true of both the left and the right sides of the house although the largest clusters, like the largest hearths, tend to occur on the left side of the house. This is one indication that both sides of the house were occupied by a number of separate families, where the same types of activities took place, although perhaps not with the same intensity.

The third important piece of information the fire-cracked rocks provided was that there were clear distributions, not to mention clear associations, with hearth areas. This fact demonstrated that far from being churned and mixed beyond recognition, the sediments we had identified in the field as “floor” versus roof sediments were relatively uncontaminated, intact, floor deposits. If everything had been mixed-up, as some people had suggested, then the distributions of fire-cracked rock across what we thought were floors should have resembled the distribution of fire-cracked rock on the roofs (refer to Figure 3.9). There would have been no way that they could have become so closely associated with the separate hearth areas across the floor of House-pit 7. Thus, the distribution of fire-cracked rocks provided an important proof demonstrating that we had recovered relatively intact, uncontaminated living floors. When we first saw the full distribution of fire-cracked rocks across the Housepit 7 floor, the entire team of analysts breathed a great sigh of relief after many years of working on faith and preliminary indications. This observation meant that other patterns of tools, bones, and plants should also be meaningful.

Of course, the occurrence of fire-cracked rocks also indicated that people were cooking foods in these houses on a relatively regular, but by no means daily basis. The total fire-cracked rock from the entirety of Housepit 7 amounted to only about 1,300 fragmented floor pieces and 12,500 roof pieces. If the floor deposits accumulated over 20 years, this would only amount to 65 fragments of cooking rocks being used per year (and far fewer whole rocks) for the entire house. This is quite low given the high rate of breakage of these rocks. Usually, rocks can be used only about four to five times before breaking up. In the smaller houses, there are much smaller amounts of fire-cracked rocks, often clustered in one corner of the house, indicating even less frequent use.

Housepit 7 – Fire-Cracked Rock



Housepit 7 – Debitage

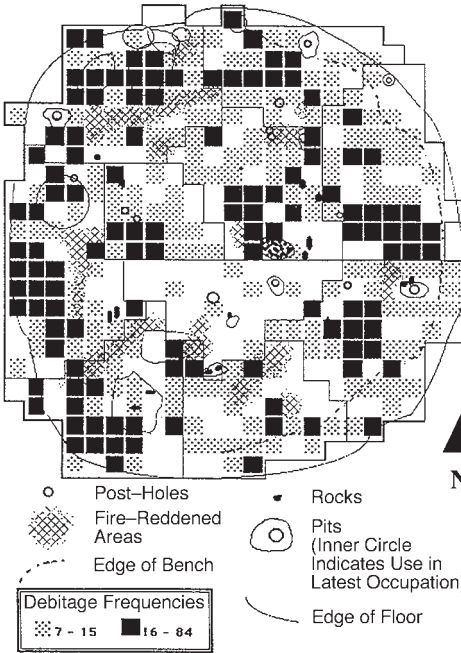


FIGURE 5.2. *Top: The distribution of fire-cracked rocks across the floor of Housepit 7 clearly shows that these rocks cluster adjacent to heavily fire-reddened areas. Other minor concentration may represent little used areas where broken rocks may have been placed for storage or provisional discard. As in other distribution maps, the straight lines on the floors indicate the division of the floor into “sectors” for the purposes of analysis. Sectors were determined by the location of hearths, major postholes, storage pits, and the clustering of artifacts.*

Bottom: The distribution of debitage on the floor of Housepit 7. Note that debitage clusters around hearths, especially in areas between the hearths and house wall, while fire-cracked rocks tend to concentrate on the opposite side of the hearths near the center of the house. There are two substantial clusters in the center of the floor near lightly fire-reddened areas that may represent domestic areas of people occupying the north half of the center of the floor. Both figures are from Spafford (1991).

Chips and tools

If each hearth in the house, whether on the left side or the right side, were the focal point of a domestic group such as a nuclear or extended family, then, like the repeated clusters of fire-cracked rocks associated with each hearth, there should also be other common tools and objects that each family would have needed and used. Probably the most common objects made and used by all families were stone tools and debitage debris that resulted from their manufacture. Jim Spafford (1991) examined the distribution of stone debitage on the floor and found a striking set of dense, stone artifact clusters associated with each hearth (see Figure 5.2). This strongly suggests that each of the two sides of the house were occupied by several distinct domestic groups, rather than people performing different activities on the left and right sides of the house. Moreover, there is a clear pattern of the debitage occurring mainly between the hearth and the adjacent wall (except for the hearth in the center of the floor), which may indicate that people who made stone tools did so in the comfort and warmth of their sleeping areas. This again strongly reinforces the conclusion that the floor deposits were intact.

Because pieces of waste like debitage are often viewed as encumbrances or dangerous for people walking barefooted, and because waste tends to accumulate in unacceptable amounts in any location inhabited for more than a few weeks, people inhabiting sites for long periods of time typically engage in housecleaning activities. People periodically gather up all waste larger than a few centimeters and place it in a special area or container for later disposal, or they throw it out directly. This is called *secondary refuse* since it does not occur where it was produced. Some objects slated for discard may also be placed in special areas on the chance that they might be useful someday. Studies by Michael Schiffer (1987) and Knut Fladmark (1982) have shown that while larger pieces of refuse are regularly removed from living areas, the small bits of waste that are produced where people work are rarely removed. They are simply too small to pick up and discard. On the sand and gravel floors of the Keatley Creek housepits, small fragments would have certainly been left behind.

Therefore, we took soil samples at regular intervals from the floors to determine whether the concentrations of debitage we recovered from our screens really represented the locations where people made stone tools, or whether the concentrations of debitage simply represented accumulations of secondary refuse from cleaning up the floors. Figure 5.3 clearly shows that the small bits of flaked stone correspond almost exactly with the location of the major debitage concentrations. Since most of this debitage is also relatively small (average size is about 2 cm), it, too, seems to have been considered not worth the effort of removing.

Jim Spafford also found that the distribution of all modified stone tools (rather than just the debitage waste), displayed exactly the same cluster pattern around hearths as the debitage, and has the same implications. In addition, when the specific types of tools surrounding each hearth are compared, about 50% of them are the same types and occur in the same proportions; that is, each hearth has *at least* 1 % arrowheads, 8% expedient knives, 9% scrapers, 17% utilized flakes, and so forth (Figure 5.4). This



FIGURE 5.3. The distribution of “mesodebitage” (flakes of stone between 1–10 mm in size) across the floor of Housepit 7. Such small waste material is generally thought to accumulate at the actual places where stone reduction took place. Note that the high densities of these materials correspond quite closely to the dense areas of large debitage in Figure 5.2, indicating that normal debitage concentrations reflect stone working activities rather than storage or cleanup activities.

same basic pattern, or tool kit, also occurs in the other houses we excavated. Given the limited numbers of tools associated with some of the hearths (40 to 50 tools), and given variations between individuals or families in aptitudes for different activities, the tools associated with each hearth are very similar to those at the other hearths. Whenever individual artifacts are affected by randomizing factors such as how often specific activities take place, haphazard cleanup of debris, and displacement by foot

traffic, then large numbers of artifacts are needed to accurately gauge the average overall assemblage composition of a group. Usually, archaeologists like to have 100 or more artifacts for a representative sample.

There are no indications that some tools were used more on the right side of the house than on the left, or vice versa (Figure 5.4). This also strongly reinforces the notion that hearths on the left and right sides of the house were focal points for a number of domestic groups or families rather than areas for different activities. Only a curious lack of debitage in the southernmost sector of the house and the central floor in front of this sector seem anomalous. But we shall return to this anomaly shortly.

Finally, granite boulders or cobbles that were found resting on the floor were probably used as anvils for breaking up bones and for similar activities. It is interesting that these boulders occur almost systematically between two hearths (or at least near a hearth) all the way around the interior of the house. The largest of these boulders occur in the left side of the house, once again indicating the presence of families at all the hearths, and perhaps more bone breaking occurred in this area. Abrading stones were also present around each hearth within the house.

ACTIVITY AREAS

If all the evident clusters seem to indicate there were a number of separate domestic units or families associated with the separate hearths in the housepit, what about activity areas? Are there no indications of special areas for different activities such that men and women might perform? If you carefully compare the top and bottom of Figure 5.2, you will notice that the clusters of fire-cracked rock have a strong tendency to occur on the side of the hearths toward the center of the floor, whereas the clusters of debitage occur on the opposite side of the hearths toward the house walls. Large biface fragments are associated with the locations of the fire-cracked rocks (Figure 5.5); notches also tend to occur in the center of the floors; and arrowheads, together with heavily retouched scrapers, tend to occur near the walls (Figure 5.5).

What do these distributions mean? In a number of myths and tales that James Teit recorded, wives are described as handing their husbands food across the hearth. This would seem to indicate that women habitually occupied one side of a hearth during meals (probably where they prepared food), while men occupied the other side of the hearth. The distribution of fire-cracked rocks versus the densest occurrences of debitage certainly seems to imply some such division of space. However, the situation is probably more complex since large bifaces are generally thought to be part of men's long-distance hunting tool kits, yet the fragments occur in the same general areas as the fire-cracked rocks that women used, although the flakes from resharpening these bifaces are found in the sleeping areas near the walls. It is possible that the parts of domestic areas closest to the center of the house were simply used for activities that tended to be dirty or messy such as cooking, butchering, hide working, or removing bark from arrow shafts, bow staves, spears, handles, or other wood objects.

In contrast, the heavily retouched scrapers near the walls probably represent stor-

Housepit 7 – Biface Fragments

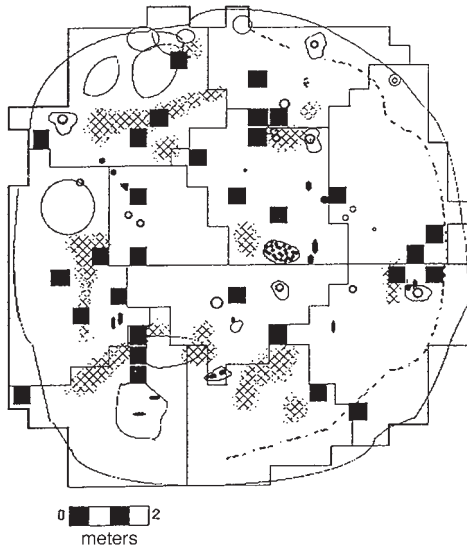
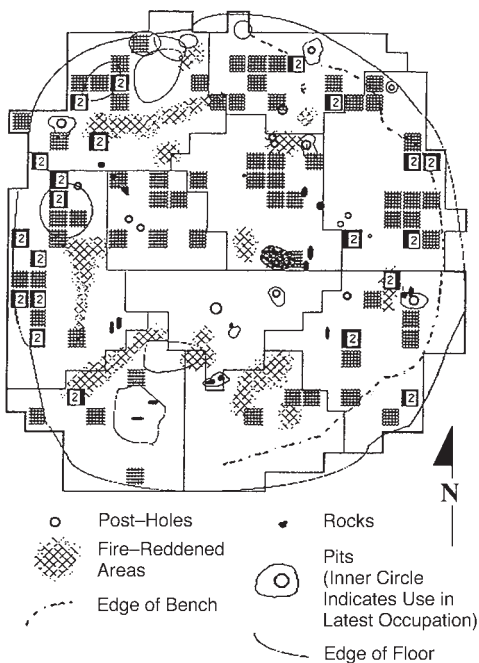


FIGURE 5.5. *Top: The distribution of biface fragments and bifaces on the floor of Housepit 7 showing their strong tendency to occur between the hearths and the center of the house. Bottom: The distribution of heavily retouched scrapers on the floor of Housepit 7 showing their strong tendency to cluster between the hearths and the wall of the house in a fashion that is complementary to the distribution of bifaces and some other artifact types. The location of these scrapers may represent storage or provisional discard behavior. Both figures are from Spafford (1991).*

Housepit 7 – Heavily Retouched Scrapers



age locations of commonly used items that had little value since most of them were left when the house was abandoned. Heavily retouched or resharpened tools that were near the end of their use-lives may have been provisionally discarded under sleeping platforms along the walls. The occurrence of whole arrowheads in the same areas near the walls probably represents items lost during storage or during manufacturing. Con-

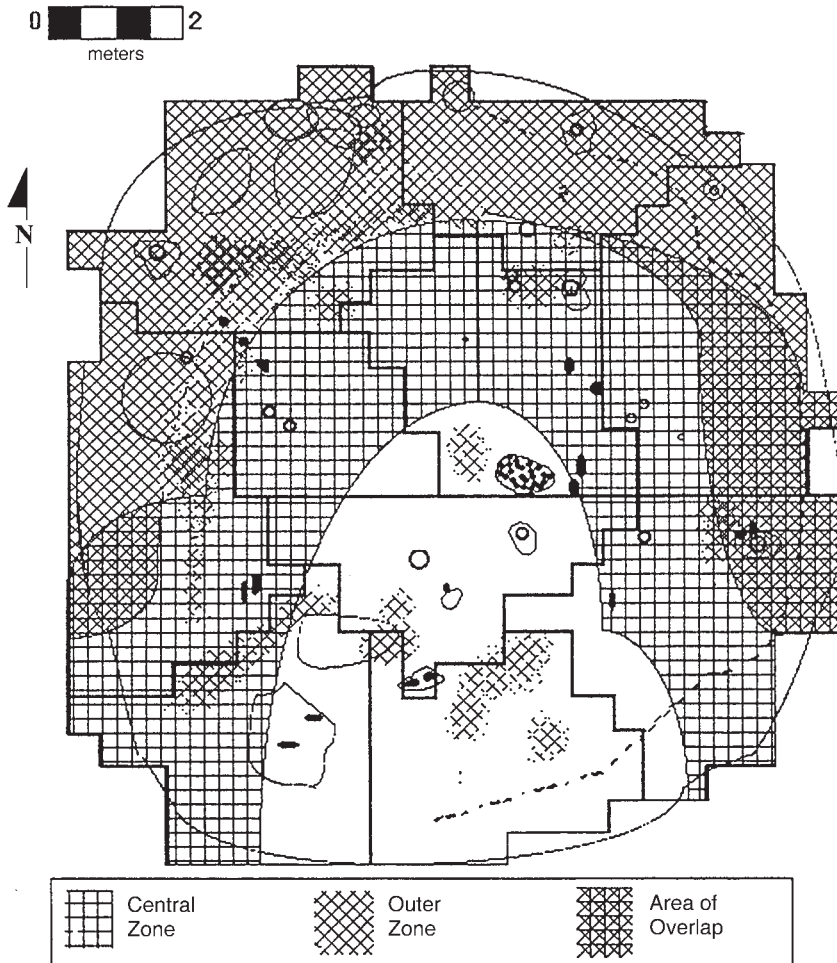


FIGURE 5.6. A schematic illustration of the basic division of the floor of Housepit 7 into general activity areas near the wall versus near the floor center. This division is based on tool distributions such as those in Figures 5.2 and 5.5 as well as others. Of special note is the breakdown of this division of activity areas in the southern and south central sectors (without any shading), which may have been special residential, sacred, or traffic sectors. From Spafford (1991).

siderable manufacturing must have taken place between the hearths and walls given all the stone debris found in these areas.

This pattern of some types of tools being concentrated between the hearth and the wall, while other types of tools are concentrated between the hearth and the center of the house is relatively strong and involves other kinds of tools, such as utilized flakes and notches. However, this pattern breaks down in one area of the house (Figure 5.6). This is the southern sector, the part of the central floor immediately in front of it that was previously mentioned. Not only does little debitage occur in this area, but also

there are few examples of any other stone tool types. The few that do occur there conform to the basic types found around the other hearths. In this southern sector, we have large developed hearths, we have storage pits, we have diminished amounts of stone materials, but with the same characteristics as the other hearths. The spatial separation of stone tool use also breaks down here. What was going on at this location? Was it vacant most of the time? Was it a side entrance area? Was it a sacred area? Or is it possible that it was the residential location of the most important family in the house—the house “chief” or administrative head? There are ample observations from the Northwest Coast native communities that the chiefs did little physical work. Most of their time was spent arranging loans, feasts, marriages, funerals, and displaying the wealth and success of the house by not performing physical work. It is perhaps not just a coincidence that the only nephrite fragment found in Housepit 7, and perhaps an ornamental one at that, came from a pit in the south sector. While it may be premature to determine exactly why this southern sector is so unusual, we at least have some very good leads. Future excavations of large houses should help to resolve this question.

PRESTIGE STONES

As noted at the outset of this chapter, there is a wide array of stone objects that can be considered prestige items. Most of these are unique or are represented only by two or three specimens. Examining the distribution of such objects is not very helpful, especially since virtually all of them were broken or lost and might have been kicked around, displaced by children playing, or possibly lost by visitors. Distributions are helpful only when there are large numbers of objects so that behavioral patterns can stand out from the random events that affect individual objects. Nevertheless, simply the presence of such prestige items, or their fragments, tells a great deal about the house and the community that owned or produced them.

For instance, nephrite is an attractive, green stone material that is very effective for cutting wood. It is almost indistinguishable from jade. It is also one of the toughest and hardest stones traditional societies ever attempted to use. Without industrial diamond-tipped saws, it takes about an hour to cut a groove in nephrite only 1–2 millimeters (mm) deep. There were many millimeters to cut in the manufacture of an adze blade (Figure 5.7). John Darwent (1996) estimates that at least 110 hours were required simply to cut out the adze blank. Many more hours were necessary to create the cutting edge and polish the surface. To cut nephrite, quartz sand was used with string or wood, the same technique used by the Chinese and Maoris to make their jade objects prior to the availability of industrial rock-cutting saws. The great amount of labor involved was one of the reasons jade and nephrite were so expensive in traditional societies. Nephrite was a sign of wealth, and it is entirely possible that much of the work done in the creation of nephrite objects was performed by slaves or servile members of the great houses. Some nephrite adzes were so long (45 cm) and narrow that they served exclusively as displays of wealth and status. A similar phenomenon is known for European Neolithic adzes. The mere presence of nephrite objects indicates

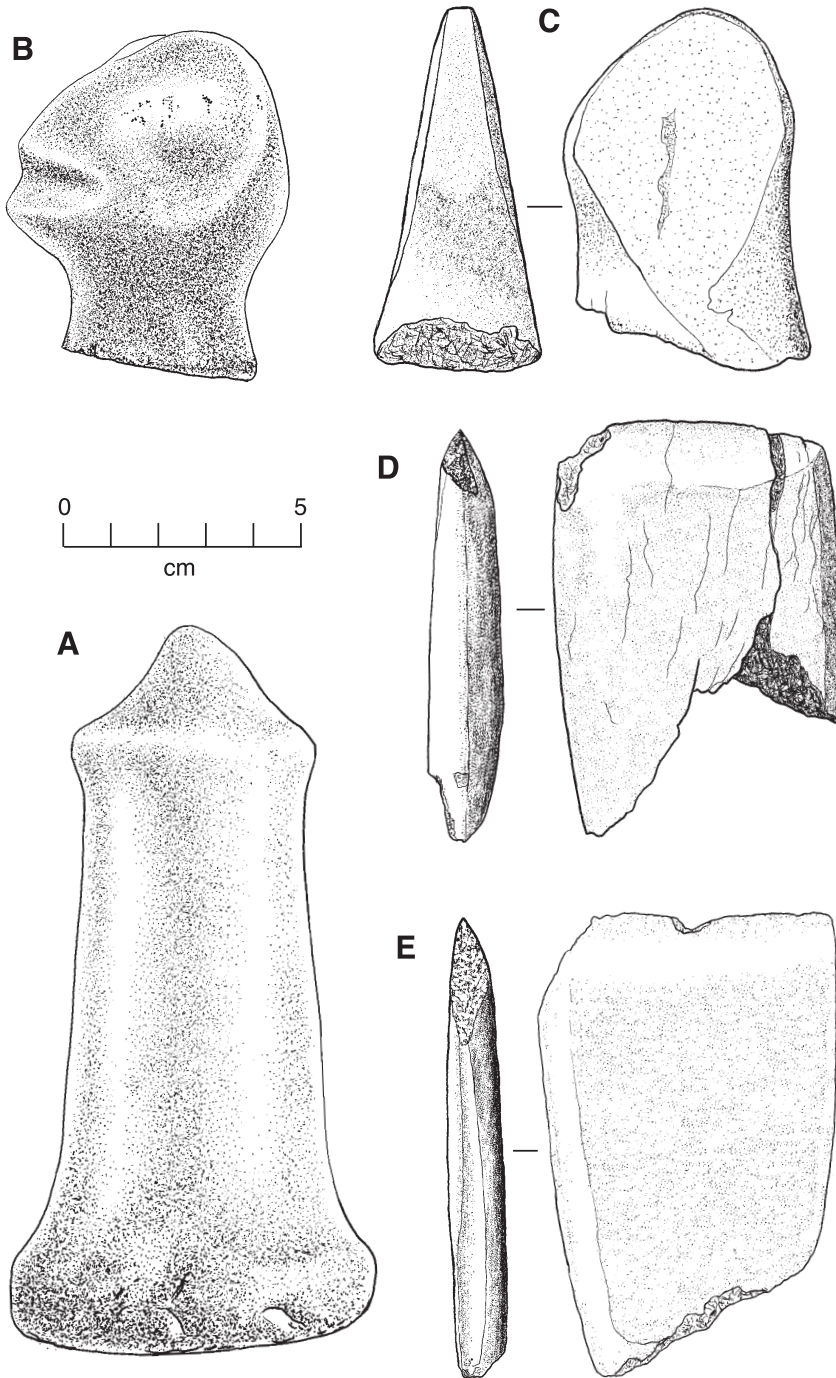


FIGURE 5.7A. Some of the prestige stone artifacts recovered from Keatley Creek included sculpted stone mauls (A, B), a unique piece of sculpted white marble that may have been the top of a maul (C), and nephrite adze blades (D, E).

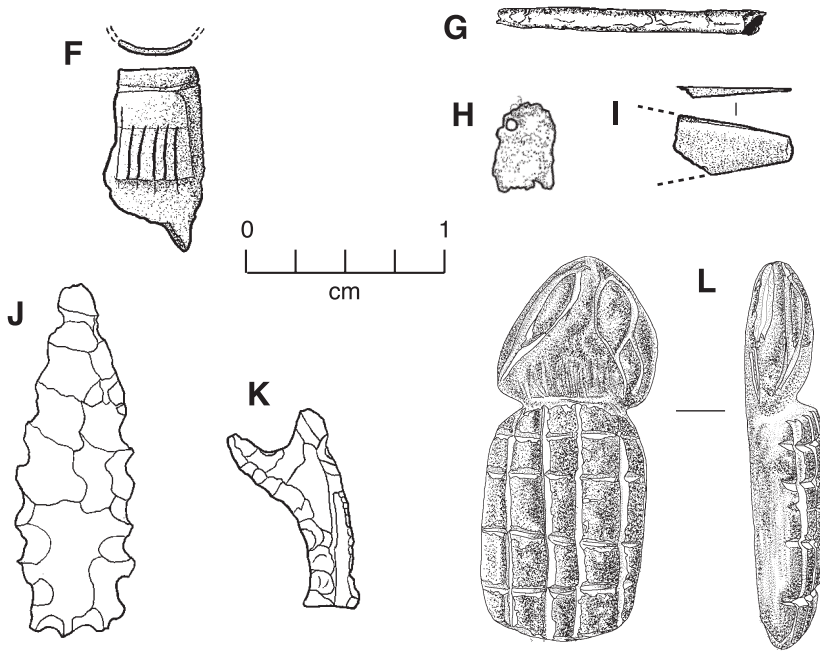


FIGURE 5.7B. Additional prestige stone artifacts recovered from Keatley Creek included decorated steatite pipe bowl fragments (F), a copper tubular bead (G), a fragmentary copper sheet with a carefully made hole (H), the tip of a thin nephrite tool or ornament (I), a serrated chipped stone pendant (J), part of a chipped stone eccentric (K), and a small stone sculpture with a serpentlike head (L).

a great deal about the social and economic inequalities that must have existed at Keatley Creek and many other Plateau communities.

Copper, too, was rare and difficult to work. Prehistorically, no copper objects larger than a silver dollar are known. Copper also features as a rare element of wealth and wonder in some of the tales James Teit recorded. In one tale, it is associated with the sun. At Keatley Creek, we recovered several fragmentary sheets of copper and one rolled tubular bead about the size of a wooden matchstick which had obviously been lost in one of the storage pits in Housepit 7 (Figure 5.7). No other metal such as gold, silver, or iron has ever been recovered from a prehistoric context in the Northwest or Canada.

We also recovered intriguing fragments of what can only be termed chipped stone “eccentrics” (see Figure 5.7). These are objects of chert or trachydacite that were chipped into thin and unusual forms, often resembling the silhouettes of animals. Such objects occur elsewhere in the world and are something of an enigma since no one knows exactly how they were used or why they were made. However, in most cases where they occur, such as the Classic Maya, the Mississippian centers of the United States, and the predynastic Gerzean settlements of Egypt, they are associated with pronounced social and economic inequalities.

There are also tubular, soapstone pipe fragments, similar to modern-day chillums, which were probably used primarily by chiefs, shamans, and the elderly—if the ethnographies are any indication. It is possible many common people smoked wooden pipes (wooden pipes are mentioned by Strong, 1959, p. 139) and only the most wealthy people used stone pipes. There are also crude slate pendants and fragments of white sheet mica. There is a shaped piece of marble that resembles an animal head from a pestle. And there is a small, carved piece of serpentine that seems to have a snake's head (refer to Figure 5.7). At the neighboring Bell site, even more elaborate sculptures were found in the grave of a young child. All of these objects represent an unusual investment of time and energy in the procurement and manufacture of items for display. Their use was predominantly a social one. They were used to advertise the success, wealth, and desirability of belonging to the group that owned them. The message they conveyed to individuals outside the corporate group was “Come! Join us. We can offer you fine objects of art, jewelry, fine smoking, wealth, power, and good times.” Thus, these objects tell us a great deal about the Keatley Creek community. The unusual effort involved in procuring or manufacturing these items makes sense only in a society where these objects were privately owned, or at least owned by families or corporate groups within the community. They have no real place in generalized hunter-gatherer communities where everything is shared. No one would put in all the hours of work and toil to make a nephrite adze only to have it “borrowed” by another community member, while the maker might never see it again. The person who put in all the effort to make such rare objects would receive no benefit for his work. The benefits would go to others. Labor-intensive prestige items make sense only where private property is recognized and where sharing is regulated.

SUMMARY

A great deal has been learned from simple stone tools. We could go into much greater detail in discussing the tool formation processes such as the procurement, the transport, the reduction and modifications, the sharpening techniques, and the discard of stone tools. But, for the present purposes, the most interesting results are found in examining the distributions of stone artifacts. These distributions clearly show that there were separate clusters of fire-cracked rocks, anvils, stone abraders, debitage, and tools associated with each hearth and storage pit in the largest house. Since these objects represent activities that were probably common to all families, the implication is that each hearth was occupied by a separate domestic group such as a family, extended family, or closely connected group of people. Each domestic area used by a “family” seems to have consisted of a sleeping, storage, tool-making zone between the hearth and the house wall, as well as a cooking-processing area on the other side of the hearth toward the center of the house floor. No clearly male versus female activity areas can be identified, although there are some probable female- and male-related activities. One zone of the living floor in the south stands out as different from the rest in terms of stone tool density and activity areas. This may have been the residence of

the principal house administrator and titular head. Although we have excavated only one large housepit, I would predict that these patterns will be typical of other large housepits in the region.

The wide range of prestige lithic objects recovered from the site indicates the presence of substantial inequalities in wealth, as well as a very entrenched notion of private property at Keatley Creek.