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THE ANCIENT PAST OF KEATLEY CREEK: VOLUME III: EXCAVATIONS & ARTIFACTS

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THE ANCIENT PAST OF KEATLEY CREEK

VOLUME III: EXCAVATIONS AND ARTIFACTS

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KEATLEY CREEK VOLUME III: EXCAVATIONS AND ARTIFACTS

Preface

Brian Hayden

This is the final report of the Fraser River Investigations into Corporate Group Archaeology Project, a project that has lasted for 13 years. This has certainly been one of the great intellectual and collaborative undertakings of my lifetime. I trust that readers will recognize in the many contributions that make up this report, the remarkable interweaving of many divergent disciplines, lives, and perspectives into a united interpretation of the social and economic organization of a prehistoric community on the Northwest Plateau. This report is special for a number of reasons. Firstly, the nature of the archaeological remains at Keatley Creek are in my estimation, one of our most important national and world heritage treasures. The site is extraordinary in terms of its size for people following a hunter-gatherer way of life (with an estimated peak population of 1,200 -1,500). The large houses are extraordinary for pithouses and the preservation of organic remains and stratigraphy is excellent.

Secondly, this report is special because it seeks one of the most elusive entities archaeologists have sought from the beginnings of their systematic exploration of the past: notably, the basic social and economic and political organization in specific prehistoric societies. How did this organization mold the lives of people on a day to day basis? There have been many professional archaeologists who have said that such questions cannot be answered. There have been many others who adamantly maintain that such questions can be answered. However, while both sides have reveled in pronouncements, few archaeologists have successfully demonstrated how even basic aspects of social or economic organization can be reconstructed from the remote past.

The previous volumes demonstrated that with determination, collaboration, and a little luck, a fairly detailed reconstruction of past social and economic organization is certainly possible. This was the goal of the project from the beginning: to understand the social and organization of unusually large houses (residential corporate groups). The results have sometimes been surprising and intellectually exhilarating, as the following chapters document.

Third, as alluded to above, this report is remarkable for the unusual breadth of data and disciplines that have all contributed to making this report a landmark study in prehistoric archaeology. While I originally defined the basic problem orientation of the project, I have had the good fortune to have been aided from the outset by a remarkable team of collaborators, excavators, and analysts in specialized fields. I consider the substantial success of this project to be a tribute to all of them. Many of the authors of the following chapters helped plan the excavation and analytical strategies to be pursued from the outset of the project, and many were on the first field crew that tested the first housepits in a hesitant and hopeful manner, unsure as to whether we would find any intact or recognizable living

floor deposits upon which much of the fate of the project depended. Diana Alexander, Karla Kusmer, Dale Donovan, Dana Lepofsky, and Mike Rousseau were all members of that first field crew and planning committee. They helped modify our strategy as new realities confronted our initial idealistic models, and they continued their involvement in the project over the years in analyzing the overwhelming amounts of material recovered. I consider this final report on the work at Keatley Creek as one of the best examples of what collaborative, interdisciplinary archaeology can produce.

Fourth, this report is special because it substantially increases our depth of understanding in the study of complex hunter-gatherers. Complex hunter-gatherers have become very prominent in the theoretical domain of archaeology in the past two decades because they now appear to be the key to understanding most of the important cultural developments of the last 30,000 years of prehistory, including the emergence of prestige technologies, economic-based competition, private ownership, socioeconomic hierarchies, slavery, domestication of plants and animals, sedentism, and many tangentially related phenomena. This report also provides a major contribution to the systematic and detailed study of site formation processes which have rarely been documented in any thorough or systematic fashion.

Finally, this report is special because substantial parts of it have been built upon an in-depth understanding of the living descendants of the prehistoric Plateau peoples. We were priviledged not only to read early ethnographic accounts of traditional Plateau lifeways as recorded by James Teit and others, but also to be able to work with a number of elders from the surrounding First Nations communities. From them we learned a great deal about traditional practices and especially how resources were used. This valuable information constituted a study of traditional resource use that was exceptional in its coverage and documentation of traditional lifeways. This study was published by the University of British Columbia Press under the title of: A Complex Culture of the British Columbia Plateau (Edited by B. Hayden). I certainly would like to extend my very deep gratitude to everyone in the native communities that aided us in this work, and especially to former Chief, Desmond Peters, Senior, of Pavilion.

The quest to recover past social and economic organizations on the Plateau has been long and arduous, and it has led to many unexpected ventures, both geographical and intellectual. I have been constantly surprised by new facts, new relationships, new perceptions, new conclusions, and new questions. However, the quest has never become dull or boring. If anything, it has been too interesting and too captivating. At times, it has been difficult to hold all the threads together in order to make a coherent fabric of the past at Keatley Creek and to create coherent theoretical images of the past. However, the main themes have remained clear and resilient. The venture has been a wonderful growing experience, even if I have at times been exhausted by the endeavor.

I am confident that as a result of the excavations at Keatley Creek, the new conceptual, methodological, and theoretical approaches that I and the other analysts have developed will stimulate further advances in the exciting area of documenting and understanding past social and economic organization. However, many of the advances that we associate with this project have been fortuitous and serendipitous. I certainly did not foresee or plan for all of them. Many of the advances were developed by interested students and analysts who became intrigued by the project and developed their own innovative ways of looking at the data. Once again, I must acknowledge my very good fortune in having such interested, dedicated, and talented individuals involved in this project. It is above all, they who have made it successful.

Organization of the Volumes

The report is organized into three volumes. Each volume has a separate thematic focus, these are: taphonomy, socioeconomic organization, and excavation documentation. This organization is somewhat different from traditional archaeological site report formats where all the information pertaining to a given type of material such as lithics or fauna is presented together in a single chapter or section. Given the complexity of the database at Keatley Creek and the complexity of the issues being addressed, it was thought that a traditional type of material-focused organization would make it difficult for readers to follow all of the related arguments, models, and issues related to the central themes of the research at Keatley Creek. We therefore chose to structure the organization of these volumes around the major research questions at the site, especially site formation processes and prehistoric socioeconomic organization. For those accustomed to the more traditional material-focused organization of site reports, this may at first seem somewhat awkward since some of the information on lithics, for example, is presented in all three volumes. However, after reading a few chapters, and especially with some judicious use of the table of contents and indexes of the volumes, readers should be able to orient themselves sufficiently to find any type of information that they are interested in. We also have included frequent chapter cross-references to direct readers to other relevant data or interpretations in the report.

Volume I

Because questions of taphonomic biases, disturbance, mixing, and basic issues of accurate identification of the origins of sediments had to be dealt with prior to any consideration of artifactual patterning, the first volume dealt with general formation processes at the Keatley Creek site. Chapters included sediment analyses, microfabric analyses, faunal taphonomy, botanical taphonomy, lithic strategies and source identifications, and specific comparisons of rim to roof to floor formation processes. Background chapters on basic geological, environmental, climatic, typological, and dating issues were also included in this first volume.

Volume II

The second volume, dealt with evidence for social and economic organization at the Keatley Creek site. Overall differences between housepit assemblages were dealt with as well as differences in the internal organization of space and domestic groups. Prestige artifacts were analyzed, including the large assemblage of domesticated dogs from HP 7. In addition to botanical, faunal, chemical, and lithic patterning, this volume contains an ethnographic summary of accounts of pithouse life, an analysis of architecture and heating strategies, an overall synthesis of what the socioeconomic organization of the Keatley Creek community was probably like, and an evaluation of the results of the Fraser River Investigations into Corporate Group Archaeology project.

Volume III

In order to present as full a picture of the data upon which the previous interpretations were based, relatively detailed reports of all the test trenches and extended excavations are presented in this, the third and final volume. This volume also contains a description of the lithic typology used by the project (Chap. 1), an illustrated catalog of all the modified bone tools from the site (Chap. 2), and a special analysis of unusual scapula tools at the site (Chap. 3). The intention is for this volume to be used as a kind of reference book, similar to a

dictionary. It should be consulted whenever any questions about excavation or stratigraphic details of a housepit arise from reading analyses or interpretations in the other volumes.

The Excavation Program

The overall goals, excavation methods, and sampling strategies of the FRICGA Project have been presented in Vol. I, Chap. 1. Here, it is perhaps useful to note that there were in actuality several subprograms of research that were conducted during the course of excavations at Keatley Creek. The initial goal of sampling housepits in order to determine which of them would be most useful for dealing with questions of socioeconomic organization at the site constituted the core of the sampling program. The reports of all the sampled structures are presented in Chapter 10 of this volume. While we initially focused on the housepits in the center of the site, it soon became apparent that it would be difficult to find simple, undisturbed small housepits in the central area. We thus began a testing subprogram that focused specifically on small housepits, generally on the periphery of the site. Mike Rousseau and Martin Handley undertook the responsibility for testing many of these structures and they have written an overall summary of their excavations (Chap. 10.1) as well as many of the individual excavation reports. After they completed their testing, I began to consider the possibility that small ritual structures might have played important political roles in the organization of the community at Keatley Creek and that such structures might be preferentially located on the periphery of the site. Thus, over the next 10 years I continued the testing of small structures on the periphery of the site and extended some of the excavations within some structures, especially those in relatively remote parts of the site such as Terrace 1 (HP 109), Terrace 2 (HP's 104, 105, 106), and the terrace south of Keatley Creek (HP's 9 and 107). The location of these structures and the other housepits that were tested is presented in Figures 1 and 2. Subsequently, it seemed possible that some of the very small structures at the site might also play roles in the sociopolitical organization of the Keatley Creek community. While only a few of these structures have so far been identified at the site (EHPE's 3, 11, and 26), we endeavored to test and explore a few of them also.

The other major excavation goal of the research program at Keatley Creek was the complete excavation of a number of housepits that we considered (on the basis of test trenches) were contemporaneous and had in tact floor deposits. These were important for dealing with our questions about the social and economic organization of the community and the pithouses within it. The full descriptions of these excavations with stratigraphic profiles and floor plans are presented in this volume in Chapters 4•9. The locations of these extensively excavated housepits is presented in Figures 1 and 2.

We also began a subprogram of sampling non-housepit structures. We refer to these as "Extra-Housepit Excavations," or EHPE's. These included a wide range of cultural depressions or features that could not clearly be identified as housepits on the basis of surface characteristics. Initially, we undertook these excavations because we wanted to know if considerable amounts of faunal materials were being thrown away outside of the housepit contexts and therefore biasing the remains that we were recovering associated with the housepits. This did not turn out to be a very significant factor, but in the process of exploring this possibility we discovered an interesting range of roasting pits, cache pits, very small structures, and smaller enigmatic pits. We later became aware of the potential importance of some of these features for understanding and documenting the sociopolitical organization at the site, especially the possible role of roasting pits for documenting feasting, the role of some cache pits in association with possible secret society lodges, and the role of small structures as seclusion facilities, or perhaps as residences for indigent individuals or families. The location of all the EHPE's is provided in Figures 1 and 2, and the detailed descriptions of the excavations are provided in Chapter 11. General analyses of

these excavations is provided at the beginning of the chapter by Mike Rousseau, Martin Handley, and James Spafford.

Field Interpretations

One of the factors that was critical for the success of our research at Keatley Creek was the ability to reliably identify floor deposits while actually excavating them and to be able to follow living floor deposits. While other approaches stress the importance of formulating interpretations of deposits only after laboratory tests and analyses have been completed, this would clearly not work if we were to achieve our goals. The delays and confusion that such an approach would entail would quickly thwart any attempts to isolate living floor deposits from other deposits. Moreover, laboratory tests and analyses can only provide relatively crude, overall measures of variability using a very finite number of variables and samples. In contrast, field workers habitually distinguish color variations that are many times more subtle than can be recorded with any Munsell color chart as well as a host of relatively intangible and sometimes ephemeral observations such as differences in moisture content of different strata in the morning vs. the afternoon, the "feel" of troweling through sediments, their softness or compactness, the orientation of artifacts within sediments, and the "flaky" nature of some sediments. Field excavators also make constant observations on the totality of sediments being excavated rather than on a limited number of samples. In short, the field excavators are the individuals who have access to the most observations and the most relevant kinds of observations. It is above all the excavator who is in the best position to interpret what is being excavated, to ask questions about formation processes, and to try to determine the nature of the deposits. When asked to interpret deposits they begin to formulate models and hypotheses and expectations which may prove to be correct or may have to be modified. But by engaging excavators in the process of interpretation in the field, I am convinced that much better archaeology and interpretations are the result. Laboratory analysis certainly has its place, but, like statistics, it is probably best used for demonstrating the reality of the interpretations that we already feel fairly confident about on the basis of our innate assessments of situations. Thus, a key component of the research at Keatley Creek has been to engage all excavators, but especially those with experience and expertise, in stratigraphic interpretations in the field. Individuals who directed each of the more extensive excavations were generally chosen for their expertise in fieldwork and they were the ones who were asked to write up interpretations in their reports. I think that anyone trying to write up a report on the basis of someone else's generally sparse fieldnotes or results from laboratory tests will produce a much less satisfactory analysis. The following chapters, thus, represent the product of this approach. I feel confident that those who consult these chapters will appreciate the worth of this strategy and the great merit of engaging those who have taken the time to document their observations and interpretations in this manner.

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I apologize for anyone who helped in the project and whom I have forgotten to acknowledge.

Of utmost importance for the success of this project has been the good will and cooperation of the people that have generously permitted us to excavate on their legal and traditional lands: Mr. J.E. Termuende of the Diamond S Ranch, and the Pavilion (Ts'qw'aylaxw) Indian Band. The Fountain (Xaxli'p) Indian Band has also provided substantial support. More than anyone else, Desmond Peters, Senior, of the Pavilion Band, has been a mentor of our research in the area and has been invaluable in providing information on traditional culture. In the creation of this project, Dr. Arnoud Stryd was both

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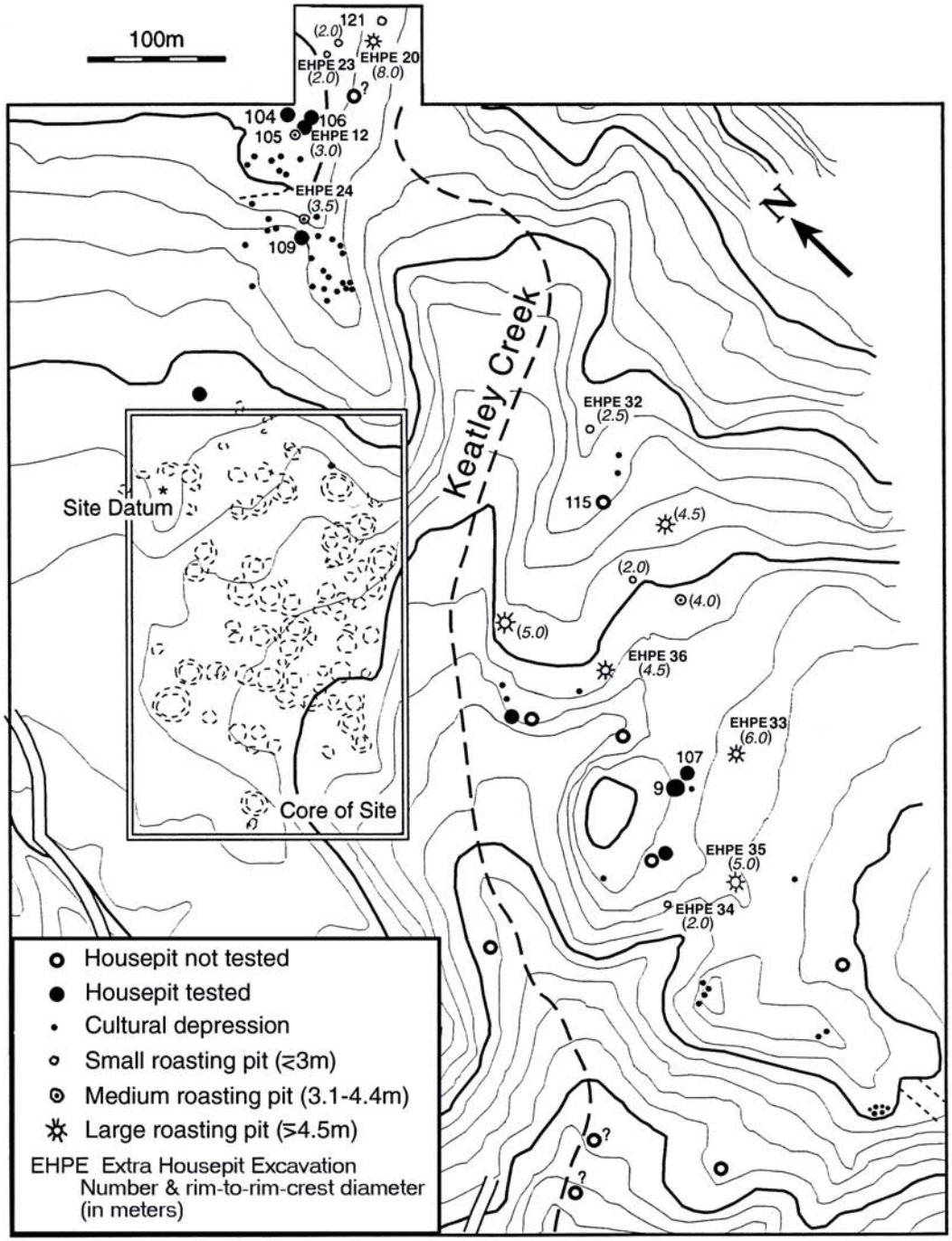
Figures

Photographs



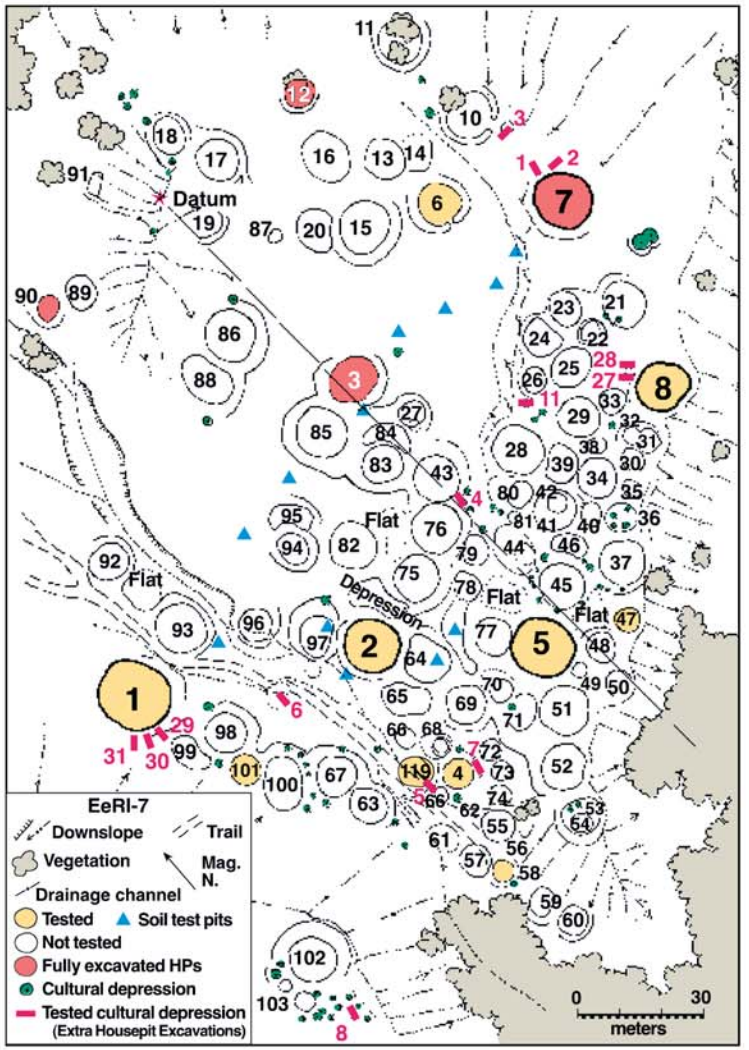


Figure 1. The location of housepit structures and Extra Housepit Excavation locations in the Keatley Creek site (Countour interval = 5m). The five largest housepits are designated in bolder numbers.

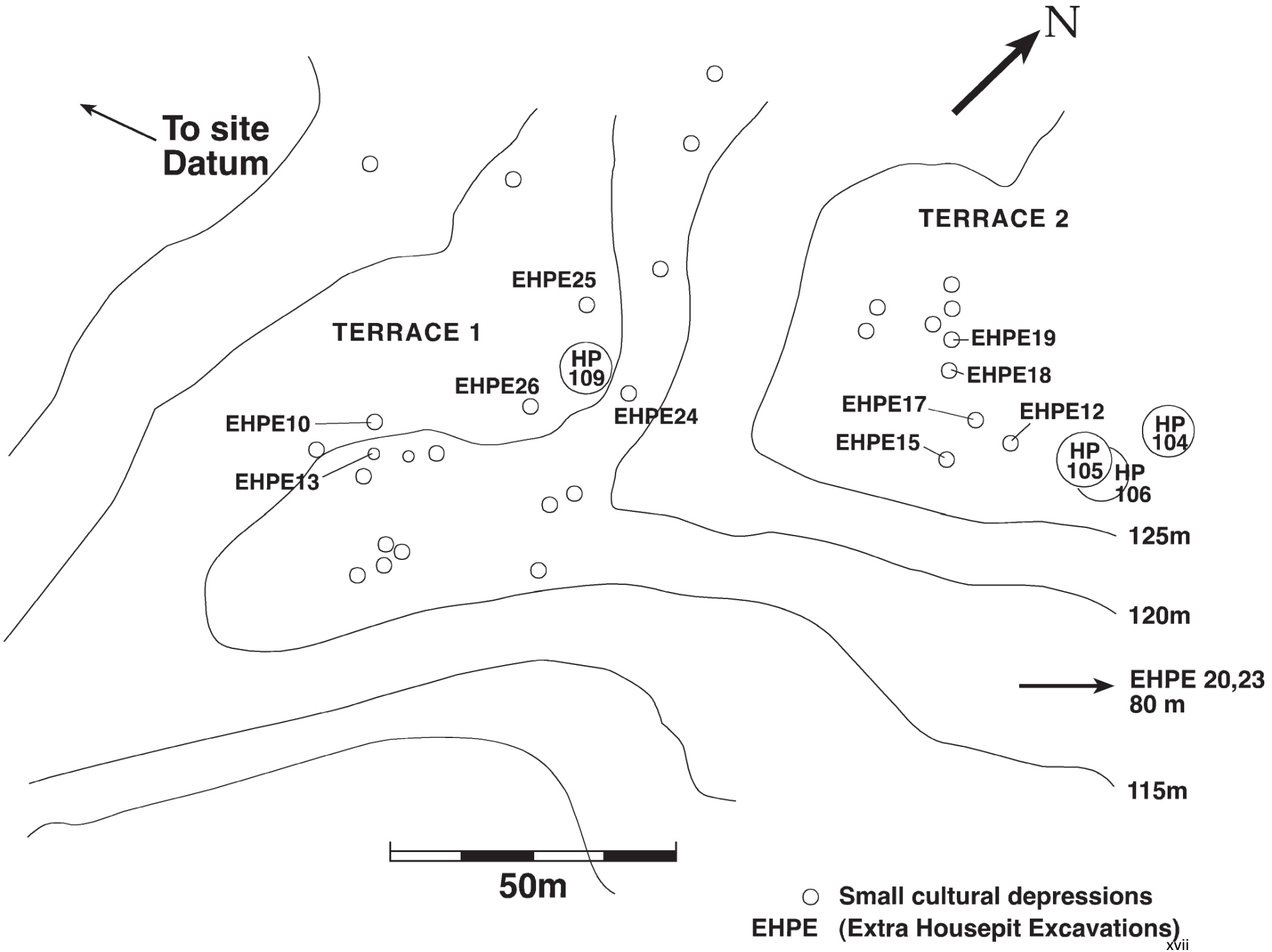


Figure 2. A detailed view of Terrace 2 and the housepits located on it.

Photo 1. After the fire of 1996, Keatley Creek from the air.

Photo 2. Before the fire, colour infrared photograph from the air.

Photo 3. Looking West from Terrace 1, Photograph of Keatley Creek.

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Lithic Typology

Brian Hayden and Jim Spafford

Because the analysis and distributions of stone tool types play such a central part in the interpretation of Keatley Creek floor assemblages, it is appropriate to explicitly describe the rationale and criteria used to define the lithic types used in this study. Such a presentation is also important because of the considerable variability in approaches and definitions used by lithic analysts in North America.

Among the many different approaches to typology, we have found the one advocated by Hill and Evans (1972) to be the most useful for problem oriented research. They essentially argue that typologies should be developed to reflect the kinds of information required to resolve the problems and questions being asked of the archaeological materials involved. Hayden (1993:54-9) has elaborated this approach. In the case of the Keatley Creek assemblages, there were a number of problems that we wanted to address, the most important of which were:

1) The relative age and contemporaneity of the many structures, features, and strata excavated at Keatley Creek;
2) The relative wealth of the residents of different structures; and
3) The organization of activities and social groups within structures.

Each of these questions required that a different type of information be extracted from the stone tool assemblage. Therefore, our resulting typology is really a composite one. The relative age of assemblages could best be determined by making stylistic distinctions among the points that were found at the site. Richards and Rousseau (1987) had previously identified criteria for assigning different point types to the three major cultural horizons within the Late Prehistoric period of the British Columbia Plateau

(Vol. I, Chap. 1, Fig. 16). Size was also important in identifying transitional types of points representing the initial introduction of the bow and arrow during the late Plateau horizon using Plateau style, corner-notched point forms. Middle Prehistoric period point types were also important for identifying deposits from earlier time periods and mixed deposits. Other time-diagnostic artifact types included pipes, various style hand mauls, microblades, and key-shaped scrapers.

In order to monitor differential wealth levels, it was essential to record various kinds of prestige objects, including those made of exotic or rare materials and those requiring unusual amounts of effort or skill to manufacture. Such objects included obsidian, nephrite, copper, mica, graphite, stone pipes, pendants, chipped stone eccentrics, and sculpted items (Vol. II, Chap. 13).

The interpretation of activity areas and domestic areas related to understanding the basic social organization within houses required a morphological analysis that in some way reflected the practical uses of stone tools. The very large number of artifacts that we excavated precluded the possibility of carrying out functional analyses of all artifacts, however, strong arguments could certainly be advanced on the basis of design theory that many tool morphologies would only make sense in terms of a very restricted range of intended uses (e.g., drills, end scrapers, spall scrapers, notches, and others). Thus, artifacts were grouped into types that we thought would reflect different uses due to:

- differing edge angles (e.g., expedient knives with pressure flaking and low edge angles, scrapers, right angle uses of edges);
- differing types of retouch or edge creation (e.g., notching, continuous retouch, bifacial retouch);
- different size parameters (e.g., small versus regular sized notches, boulder spalls, chipped stone adzes);

- special forms that were activity specific (e.g., drills, end scrapers, spall tools, undulating bifacial knives, bifaces);
- special materials reflecting different uses (e.g., nephrite adzes, spall tools);
- the occurrence of easily observed abrasion along working edges, and;
- varying lengths of relative use-lives related to the duration and frequency of different types of activities as well as to storage behavior and provisional discard behavior that could affect floor assemblage patterning as discussed in Volume I, Chapter 12 (e.g., utilized flakes, minimally retouched scrapers, heavily retouched scrapers, bifaces, nephrite adzes).

Other typologies often make additional distinctions which we initially thought might be of some use in identifying use-specific types of tools. Such distinctions involve the inverse versus normal position of retouch, the continuous versus alternating occurrence of retouch, and the overall shape of the working edge. We included a number of these distinctions as heuristic measures, hoping that they might provide insights into tool uses. However, our analyses did not reveal any evident patterning along these dimensions, and we have concluded that artifact distinctions based on these characteristics are largely superfluous for the main questions that we were asking of the Keatley Creek assemblage.

In addition to the categorization of artifacts into classes based on the above criteria, we also recorded a number of specific variables for each artifact that were thought to be strongly related to the above problems. These attributes included, size, edge angle, material, wear state, breakage state, and weathering state.

We have also endeavored to use a more standard lithic terminology in defining types than has frequently been employed in the Northwest. Thus, we have intentionally avoided using the term "formed uniface" due to its

restricted local use, and because it carries very little information of value for the questions that we wanted to address. The term is so broad that it includes items as divergent as endscrapers and pressure-flaked knives, while ignoring the basic similarities in probable use between unifacial and bifacial pressure flaked knives, or unifacial and alternating retouched scrapers. The term, "formed biface," is equally limited since it includes a wide array of objects used for different tasks such as drills, bifacial scrapers, and chipped celts.

Similarly, we have intentionally avoided using the term "biface" to refer to points, such as arrow points. The more traditional use of the term, "biface," refers to relatively large bifacial artifacts normally flaked by means of a billet or indirect percussion. Such objects include handaxes, bifacially flaked core tools, or similar sized tools made from large flakes. By extending the term, "biface," to arrowpoints and indeed any artifact with some bifacial flaking on it, the integrity of the original term is lost. Moreover, there already exists precisely such a term to refer to the entire range of artifacts with any type of retouch on both faces; that term is, "bifacial, or bifacially retouched artifacts." The use of the term, biface, to refer to this entire class of artifacts ignores more standard usage, creates categories of minimal analytical use, and engenders a great deal of terminological confusion. Unfortunately, the use of "biface" in this overly broad sense is becoming more common in North American usage (e.g., Shott 1993). For clarity and usefulness, we will use the term "biface" in its more traditional sense to refer to core or large flake tools that have been bifacially flaked using primarily soft hammer or indirect percussion techniques. We do *not* refer to projectile points, bifacial scrapers, bifacial knives, or drills as "bifaces". Most other terms that we used are traditional lithic terms or are self-explanatory.

It should be noted that we have introduced several new types into our analyses that do not occur in any of the other regional typologies with which we are familiar. These include the division of use-retouched flakes into three different types depending on edge angles (Types 71–73). One of these types (71), the use of right angle breaks for scraping, has probably been widely neglected in regional analyses and frequently been included in the debitage class. However, there were many clear examples of these types of utilized flakes. Their right angle morphology generally renders such tools unsuitable for subsequent re-sharpening or modification. Our analysis of the spatial distribution of these different types of utilized flakes failed to demonstrate that they were used in spatially distinct areas, nevertheless it is difficult to believe that flakes with such a broad range of edge angles would have been used for the same tasks.

Another new type includes the identification of very finely retouched sharp points, which we have called "piercers." Initially we were uncertain if these objects were really intentionally manufactured tools; however, as the analysis progressed, we discovered more and more of these objects and more and more convincing examples of clearly intentional retouch near the tips of these very pointed objects. Most analysts would probably not distinguish these artifacts from simple debitage or scrapers.

The identification of minimal pressure retouched "expedient knives" is also new to the region as far as we are aware. Most previous analysts would probably have classified these objects as scrapers, however, the very low edge angles, the tendency for the retouch to be invasive, and the very systematic patterning of the flake scars, all indicate that these objects were produced by pressure flaking and that they constitute a distinctive type. The contrasts in their distributions with standard scrapers supports the validity of separating these items from scrapers and creating a separate category for expedient knives. There are several distinct recurrent edge shapes with this

type of retouch, although we did not attempt to record these different edge shapes in our codes. Some of the edge shapes include retouch on concave "hook"-like edges, retouch on straight or convex edges, retouch along two edges that converge to make one long lateral point, and retouch covering small (about 1 cm) areas of edges.

We also distinguish standard size notches and denticulates that appear as though they might be used on shafts the size of arrows or spears, from unusually small varieties that appear as though they might have been used on shafts the size of basketry elements. This interpretation was reinforced by the frequent occurrence of small notches (and scrapers) on edges with low edge angles.

Flakes with reflective, "greasy," "hide polish" (retouched or unretouched) were extremely variable in shape and retouch characteristics. Much more work is necessary to understand how this class of tools was used in hide working and perhaps other activities.

For the analysis of bifaces, we have largely followed Callahan's (1979) division according to production stages as described below. However, in cataloging the Keatley Creek bifaces, it became apparent that there were a number of other dramatic differences within this class. First of all, some bifaces were extremely crudely worked (apparently with hard hammer percussion) with thick cross-sections. The small size of these specimens indicated that this crudeness was not simply a result of an early production stage, but was the end product. We suspected that such small crude bifaces might have special uses (**Fig. 1**). Similarly, some bifaces were unusually small, but better finished, and did not appear to be blanks for projectile points (**Fig. 2**). We thought these might also have special uses. There were also large flakes that had relatively limited amounts of bifacial retouch along one or two edges (**Fig. 3**). We called these "expedient bifaces," and again thought that they might have served special functions or might have been

used in special contexts. The extent of their retouch was generally much greater than "knives" or "expedient knives" and was also generally produced by soft hammer percussion, although clearly there is a continuum of forms that are sometimes difficult to separate.

Among the bifaces that are generally considered "typical" large, soft-hammer thinned bifaces, there was also some important variation, especially in terms of the shape of the proximal end, which generally appears to have been hafted. Thus, we distinguished between round bottomed finely thinned bifaces **Fig. 4**; see also Vol. II, Chap. 13, Fig 5D), square based finely thinned bifaces (**Fig. 5**; see also Vol. II, Chap. 13, Fig. 5F), thin bifaces with lateral notches on the base, and thin bifaces with pointed bases (**Fig. 6**). It was thought that these might reflect stylistic changes over time, corporate group preferences, or functional differences. Finally, a rare but very distinctive small, very thin, "fan-tailed" biface form was identified and thought to possibly be related to a specialized activity (**Fig. 7**; see also Vol. II, Chap. 13, Fig. 5B). In an attempt to determine whether any of these distinctions were meaningful, we conducted an initial distributional analysis of these various categories of bifaces. Unfortunately, the limited numbers of bifaces in most reliably dated contexts (especially floors) does not permit us to advance any firm conclusions. However, on the basis of this exploratory analysis, it does appear that small crude bifaces and finely made square based thin bifaces seem to co-occur in the same deposits in about the same frequencies (especially in HP's 3 and 7), indicating that they are contemporaneous and possibly functional variants of a single basic tool type. Other finely made bifaces with different base forms may be either contemporaneous stylistic variants or temporal stylistic variants, but unfortunately our contextual control is not adequate to determine this. As for specialized bifacial forms, it is interesting that diminutive bifaces only occur in HP 7, and that fully half of all the fan-tailed bifaces occur in HP 1.

We suggest that both may be specialized forms, although a greater sample size and better contextual data is necessary to confirm this suggestion. Similarly, HP's 101 and 110 are unusual in that they both have high proportions of expedient bifaces (perhaps reflecting a low socioeconomic standing?). These observations and suggestions are advanced here so that future researchers may incorporate such considerations at the outset of their analysis.

Moreover, the fact that broken biface segments sometimes appear to have been used as wedges (piéce esquillees) or as cores is evident from the heavy battering present on the broken edges. Similar battering can occur on the edges of other broken flake tools, including their retouched ends. On a much larger scale, similar battering can occur on heavier cobbles or large pebbles. Perhaps these were used for pounding plants, bark, or bone on anvils.

During our analysis, it also became evident that many flakes, tools, and bifaces were intentionally recycled and broken, most probably to allow sharp break-edges to be used for some task. Large, thick scrapers in particular often display the intentional impact percussion marks that initiated the break fracture. With hindsight, we should have had types for intentional breaks and battered cobbles, flakes, and recycled bifaces.

Finally, there are a number of unique or extremely rare artifact types, which, because of the extremely complex and highly organized form and flake removals that they exhibit, we feel constitute meaningful types. These include: flaked quartzite or igneous adzes (**Fig. 12**; see also Vol. I, Chap. 12, Fig. 1), probably the low cost functional equivalent of nephrite adzes or possibly used in hide working as nephrite adzes were sometimes used ethnographically; narrow bifacial knives with undulating blades (**Fig. 9**; see also Vol. II, Chap. 13, Fig. 5C); chipped stone eccentrics with parallels in the collection of the Royal British Columbia Museum and private collections on

the Columbia Plateau (**Fig. 36**; see also Vol. II, Chap. 13, Fig. 4L); and; very thin, unusually shaped, broad, contracting sided bifacial artifacts (fan-tailed bifaces, Type 139 – **Fig. 7**; see also Vol. II, Chap. 13, Fig. 5B); a crescent shaped thin biface (**Fig. 5**); and a large sandstone saw (**Fig. 28**). As far as we know, none of these types of objects appear in other lithic analyses on the British Columbia Plateau, except for occasional eccentrics.

Aside from these unusual cases, the definition of most artifact types is relatively straightforward or self-explanatory. Therefore, in the following pages we present the full typology and defining aspects of each type that we used. In addition to modified artifacts, we also include definitions for various types of debitage that were recognized and the criteria that were used for identifying fire-cracked rock. The more distinctive types are illustrated as part of the Appendix to this chapter.

Additional Notes

Fire-Cracked Rocks:

Rocks that were broken because they were put in fires (and usually water afterward) could be difficult to identify at the Keatley Creek site due to the fact that much of the naturally occurring rock at the site exhibited naturally sharp breaks (probably freeze-thaw induced) and was derived from the mountain slopes overlooking the site. Thus, we established the following guidelines for the field identification of fire-cracked rocks;

1) Raw material had to be coherent and resistant to thermal fracture. Therefore, rocks that disintegrated easily were excluded, and rocks with developed planes of cleavage. The best materials were considered to be homogeneous, medium grained rock types such as basalts and andesites;

2) Size was also considered to be important. If the original size of rock as it could be reconstructed was either too small or too large, the rock was excluded. Ideal shapes were considered to be small cobbles between about 6 and 15 cm. in size. No fragments under 4 cm were recorded;
3) Angularity of edges was an important trait in recognizing rocks that had been broken by fire. At least one edge had to be sharp, angular, and unabraded;
4) Shape was considered important for choosing rocks to place in fires. The best shapes for resisting heat fracturing should have been round or subround. Therefore, rocks with sharp angular breaks exhibiting the remains of a round original cortex on some surface were considered good candidates.
5) Color was often a good guide to rocks that had been placed in fires, especially rocks that contained iron. Fire discoloration could take the form of reddening or graying of the rocks, depending on the oxidation atmosphere surrounding the rocks in the fire. On the other hand, some rocks do not discolor significantly in fire environments, while others can develop natural colors that mimic fire discoloration or may have even been in brush fires. Therefore, color was not always a deciding criterion in identifying fire-cracked rocks, and;
6) The presence of caliche crusts and hematite linings in cracks in rocks was considered to be an indication of natural fracturing processes or lack of fire effects.

Based on a polythetic combination of all these criteria, we feel that most excavators were able to identify most fire-cracked rocks reliably, although there are certain to have been some individual variation. Nevertheless, the overall patterning of fire-cracked rocks across the housepit

floors and roofs indicates that these identifications were relatively accurate most of the time.

Similarly, although it is difficult to identify all of the types correctly all of the time, all lithic tools were examined and typed at least twice, and sometimes more. We are confident that the major types that we have identified (and grouped together for purposes of analysis, e.g., all expedient knives) do have significant behavioural meanings. Indeed, the patterned distribution of many of these types across the floors of the housepits is ample testimony that they are very significant (Vol. II, Chaps. 1 and 11). While there are many aspects of this typology that we would change were we to undertake the analysis again, the major distinctions that we have made have proven to be very robust, useful, and productive in terms of our understanding of the lithic assemblage at Keatley Creek and the basic socioeconomic organization of its prehistoric inhabitants.

Appendix

Artifact Types Used in Coding Keatley Creek Artifacts

001 General miscellaneous: artifacts which cannot be assigned to any other category. (In the analyses of artifact distributions, the following types were classified as miscellaneous: 001, 002, 004, 143, 148, 157, 171.)

Projectile Points (See Vol. II, Chap. 3)

35 Projectile point fragment: recognizable as projectile point fragment or tip but indistinguishable as to type.

Early Points

101 Lochnore point: side notched, leaf shaped, convex basal margin, edge grinding at base.

102 Lehmnan point: thin, pentagonal with obliquely-oriented, V-shaped corner or side notches.

Kamloops Points

109 Side-notched point, base missing.

110 Side-notched point/concave basal margin.

111 Side-notched point/straight basal margin.

112 Side-notched point/convex basal margin.

113 Multi-notched.

114 Stemmed.

Plateau Points

115 Corner-notched point/concave basal margin.

116 Corner-notched point/straight basal margin.

117 Corner-notched point/convex basal margin.

118 Corner-notched point/base absent.

119 Basally-notched/straight basal margin.

Shuswap Points

121 Contracting stem/slight shoulders.

122 Contracting stem/pronounced shoulders.

123 Parallel stem/slight shoulders.

124 Parallel stem/pronounced shoulders.

125 Corner removed/concave base.

126 Corner removed/"eared."

127 Stemmed/single basal notch.

128 Shallow side notched/straight basal margin.

129 Shallow side notched/concave basal margin.

Bifacial Artifacts

002 Miscellaneous biface: bifacially worked artifacts which cannot be assigned to any other category.

004 Biface retouch flake with hide polish.

008 Biface reduction flake (**Fig. 8**): See Hayden and Hutchings (1989)

100 Flake blank: flake requiring little further thinning for reduction to bifacial tool; some indication of intent to manufacture formal tool but not yet recognizable as preform (type 134).

130 Bifacial knife (**Fig. 9**): bifaces with either a cutting edge backed by a thick edge, or two bifacial cutting edges.

Categories 192, 193, 131, and 134 represent stages in the reduction of formal bifaces. Artifacts assigned to these categories should exhibit some formal regularity, e.g., circumferential, roughly centered edges. Bifaces have a maximum dimension > 4 cm and/or more than one bifacially retouched edge. The use as tools of objects in any of these categories is not precluded Compare with type 186.

192 Edged piece: Callahan's (1979) Stage 2 (Initial edging) biface or fragment. Bifacially worked, circumferential, roughly centered edge-angles (55-75 degrees) on bifaces with width/thickness ratio $\leq$ 2.00.

193 Primarily thinned piece (see **Fig. 1** for examples): Callahan's (1979) Stage 3 (Primary thinning) biface or fragment. Lenticular cross-sectioned biface with width/thickness ratio 3.00–4.00 and aligned, centered edges. Edge-angles 40-60 degrees. Flake scars contact in center.

131 Biface: Callahan's (1979) Stage 4 (Secondary thinning) biface or fragment (see **Figs. 4, 5 and 6** for examples). Flattened cross-section; aligned, centered edge-angles 25-45 degrees; flake scars cross center line and may undercut scars from opposing edge.

132 Bifacial perforator: narrow, elongated, bifacially chipped point with sharp tip (See type 151).

133 Bifacial drill (**Fig. 10**): narrow, elongated, bifacially chipped point, tip more rounded than on perforator, may exhibit rotary wear.

134 Preform: biface (see type #131) or flake with the outline of a recognizable tool form but lacking some features of the completed tool (e.g., notching).

135 Distal tip of biface (triangular): self explanatory. However, it may be difficult to distinguish the distal tips of large bifaces from projectile point preforms.

136 Plateau horizon projectile point preform.

137 Kamloops horizon projectile point preform.

139 Thin, fan-tailed biface (**Fig. 7**): Roughly triangular biface, flared at base, base convex. W/t ratio of examples observed to date is > 4.00.

140 Bifacially expedient knife (**Fig. 11**): lightly retouched "knife-like" biface/fragment: flake or fragment with one or more bifacially retouched edges with an edge angle less than 55 degrees. No bifacially reduced surfaces and no retouch extending more than 5 mm from edge.

141 Lightly retouched "scraper-like" biface/fragment: flake or fragment with one or more bifacially retouched edges with an edge angle greater than 55 degrees. No bifacially reduced surfaces and no retouch extending more than 5mm. from edge.

144 Convergent "knife-like" biface: similar to 140 but with two converging retouched edges. Typically retouch is more extensive and invasive on one edge than on the other.

185 Wedge-shaped or oval bifacial adze (**Fig. 12**).

Unifacial Artifacts

Scrapers

Flake tools without the characteristic forms of endscrapers or key-shaped scrapers but with regular, continuous, unifacially retouched edges at least 15 mm in length and edge angles > 55 degrees were classified as scrapers. Scrapers with re-sharpened edges were classified as heavily-retouched scrapers in this analysis, while scrapers which had only been retouched once were classified as expedient scrapers. Scrapers were also classified according to the number and location of retouched edges (types 150, 156, 163, 164).

150 Single scraper (**Fig. 13**): one unifacially retouched lateral or distal edge.

156 Alternate scraper: retouched edges on opposing surfaces.

163 Inverse scraper: single scraper with retouch on ventral face of flake. If retouch is present on both ventral and dorsal surfaces see type 156.

164 Double scraper (**Fig. 13**): two retouched edges on the same surface.

165 Convergent scraper: two scraper edges come together to form a point. Apparently not intended for use as a projectile point or unsuitable for such use.

151 Unifacial perforator (**Fig. 14**): see bifacial perforator (type 132) but with unifacial retouch.

152 Unifacial formed borer (**Fig. 15**): artifacts with pronounced projections in the form of a point or spur created by unifacial retouch. Suitable for heavy boring.

153 Small piercer (**Fig. 16**): short, sharp point on a retouched edge or at the intersection of a break and a concave retouched edge.

154 Notch or multinotch (**Fig. 17**): one or more concave edges each formed by the removal of a single large flake from a thick, (> 3 mm) steep (> 55 degrees) side of a flake tool. Width and shape of concave edge suited

to scraping shafts with diameters of 8 mm i.e., concave edge curvilinear as opposed to angular and notch width > 8 mm.

54 Small notch (**Fig. 18**): one or more concave edges each formed by the removal of a single large flake from a thick, (> 3 mm.) steep (> 55 degrees) side of a flake tool. Width and shape of concave edge suited to scraping shafts with diameters < 8 mm i.e. concave edge angular as opposed to curvilinear and/or notch width of 8 mm.

157 Miscellaneous uniface fragments: unifacially retouched fragments that cannot be further identified as to type.

158 "Key-shaped" unifacial scraper (**Fig. 19**): one lateral edge straight from base to tip converging with concave edge on opposite lateral edge. For detailed documentation see Rousseau (1992).

159 Unifacial "knife": this category will be reserved for unifacial artifacts with long, strongly-backed knife-like edges and edge angles less than 55 degrees.

160 Unifacial denticulate (**Fig. 20**): any flake with a unifacially retouched, "serrated" edge.

161 "Thumbnail" scraper (**Fig. 21**): classified as endscrapers in this analysis. See type 162.

162 Endscraper (**Fig. 21**): a single retouched edge opposite the striking platform; edge angle approaching 90 degrees and "long" parallel retouch (usually extending from ventral to dorsal face of thick flake) "Thumbnail" scraper distinguishes a small scraper of the same form.

170 Expedient knife (**Fig. 22**): unifacial invasive retouch on dorsal surface of flake with no edge robust and/or straight enough to serve as a scraper. Edge angles < 50 degrees. Intentional retouch tends to be more invasive (> 2 mm) and less abrupt than use retouch (see type 180).

70 Expedient knife, inversely retouched: same as 170 except that retouch is on the ventral surface of the flake.

71 Utilized flake on break.

72 Utilized flake on thin (< 35 degrees) flake edge.

73 Utilized flake on strong (> 35 degrees) flake edge.

74 Retouched flake with invasive retouch extending no more than 1mm from the edge: flakes are assigned to this category when flake removals are regular, extend at least 10 mm along the edge of the flake, and are thought more likely to be the result of intentional retouch than of utilization.

171 Flake with abrupt irregular retouch: edge resembles trampled edge but may be the product of use retouch.

Miscellaneous Chipped Stone

143 scraper retouch flake with hide polish.

145 Pièce esquillée (**Fig. 23**): flake with ventral scar, crushed at ends but without primary flake scars or scars extending full length of flake, usually thinner than bipolar core (see type 146).

146 Bipolar core (**Fig. 24**): core with crushing on both ends, usually thicker than pieces esquillee with no original ventral scar, primary flake scars on one or more faces may extend full length of core (see type 145).

147 Microblade: straight, parallel edges; striking platform approximately at right angle to axis of blade; width $\leq$ 7 mm.

148 Flake with polish/sheen: (but no retouch including use retouch).

149 Microblade core/core fragment: unidirectional core with regular parallel ridges around circumference; width of flake scars $\leq$ 7 mm (see type 189).

180 Utilized flake: any flake exhibiting continuous use retouch extending at least 1cm. Use retouch is typically more abrupt and less invasive ($\leq$ 2 mm) than intentional retouch. Use retouch may be confused with trampling. Use wear is typically more regular and extensive than

trampling retouch and flake scars may appear older, more worn and weathered (This general type was replaced by types 71-74, and 171).

182 Core rejuvenation flake: dorsal surface shows evidence of use as striking platform with beginnings of flake scars around circumference.

183 Spall tool: cobble spall with use retouch or no retouch (Spall: large, flat flake derived from cobble and exhibiting cobble cortex on rounded surfaces. May be produced by natural or cultural processes.).

184 Retouched spall tool: retouched cobble spall (**Fig. 25**).

186 Multidirectional core (**Fig 26**): nodule, chunk, or large flake from which flakes suitable for use as retouched or unretouched flake tools, scrapers, etc have been removed from more than two directions; no apparent intent to reduce core into formal bifacial tool though use of core as tool is not precluded. Compare 192.

187 Small flake core: flake, biface, etc. which has been used as a core but which is not identifiable as a bipolar core.

188 Retouched/backed blade: blade with one retouched edge.

189 Unidirectional (pyramidal) core: similar to microblade core but larger; tapered; single striking platform; regular, parallel flake scars around circumference; width of flake scars > 7 mm.

190 Hammerstone.

191 Blank: flake, nodule or chunk suitable for bifacial reduction. Spalls which might be assigned to this category will be counted as spalls in the lithic sample coding and will not be assigned artifact numbers.

Ground Stone Artifacts

200 Miscellaneous ground stone: fragments with ground surfaces or edges.

201 Abrader (**Fig. 27**): slab of sandstone or similar material exhibiting striations and possibly grooves on one or more surfaces.

202 Sandstone saw (**Fig. 28**): wedge-shaped sandstone slab; narrow edge used for cutting stone by abrasion.

203 Ground slate.

204 Steatite pipe/tube fragment (**Fig. 29**).

206 Anvil stone.

207 Abraded cobble or block: cobble with striations, polish or other evidence of culture.

208 Abraded cobble spall (**Fig. 30**).

209 Ornamental ground nephrite (**Fig. 31**).

210 Ochre or pigment (**Fig. 32**).

211 Grinding stone/mortar: boulder or large cobble with ground or pecked depression(s) (**Fig. 34**).

212 Mica ornament.

213 Metal artifact: artifacts made from "historic" metals such as iron and lead. Includes iron projectile points. Does not include copper artifacts which may derive from prehistoric sources.

214 Stone bead (**Fig. 35**).

215 Stone pendant or eccentric (**Fig. 36**): including bifacial denticulate pendant (oval to leaf shaped biface with shallow notches at one or both extremities suitable for attachment of thong).

216 Ground or sculpted ornament including figure bowls (**Fig. 37**).

217 Copper artifacts (**Fig. 38**).

218 Celt (**Fig. 33**): typically nephrite ground into a wedge with a sharp edge.

219 Maul (**Fig. 39**).

221 Pigment palette (**Fig. 40**).

222 Arrow shaft Straightener (**Fig. 41**).

Other Definitions

Scraper retouch: abrupt (> 55 degrees), regular retouch

Backing: in general refers to a thick, blunt edge opposite a cutting edge; may be manufactured by unifacial or bifacial retouch.

Use retouch: regular but non-intrusive (1–2 mm) retouch, extending at least 10mm.; edge angle < 40 degrees.

Billet flake: pronounced lip, broad fracture front (absence of point impact features), small platform area in relation to flake size, little crushing of platform, possible evidence of platform preparation. (See Hayden and Hutchings 1989)

Bipolar flake: crushing at both ends; crushing of platform; ventral scarring; relatively straight ventral surface.

Primary flake: flake suitable for use as tool; maximum dimension > 2 cm; at least 1 cm of edge robust enough for retouch (edge angle < 45 degrees).

Secondary flake: flakes with recognizable ventral surface not classified as bifacial, bipolar, or primary.

Shatter: debitage lacking a recognizable ventral surface.

Spall: (large, flat flake derived from cobble and exhibiting cobble cortex on rounded surfaces May be produced by natural or cultural forces).

References

Callahan, Errett

1979 The basics of biface knapping in the eastern fluted point tradition: A manual for flintknappers and lithic analysts. *Archaeology of Eastern North America* 7(1): 1–180.

Hayden, Brian

1993 Archaeology: The science of once and future things. W.H. Freeman, New York.

Hayden, Brian, and W. Hutchings

1989 Whither the Billet Flake? In D. Amick and R. Mauldin (Eds.), *Experiences in Lithic Technology*, pp. 235-257. BAR International Series 528, Oxford.

Hill, J., and R. Evans

1972 A model for classification and typology. In D. Clarke (Ed.), *Models in Archaeology*, pp. 31–73. Methuen, London.

Richards, Thomas, and Michael Rousseau

1987 Late prehistoric cultural horizons on the Canadian Plateau. Department of Archaeology, Simon Fraser University Publication No. 16: Burnaby, British Columbia.

Rousseau, Michael

1992 Integrated lithic analysis: *The significance and function of key-shaped formed unifaces on the Interior Plateau of Northwestern North America*. Department of Archaeology, Simon Fraser University, Publication No. 20, Burnaby.

Shott, Michael

1993 Spears, darts, and arrows: Late Woodland hunting techniques in the Upper Ohio Valley. *American Antiquity* 58: 425–443.

Figures

Photographs

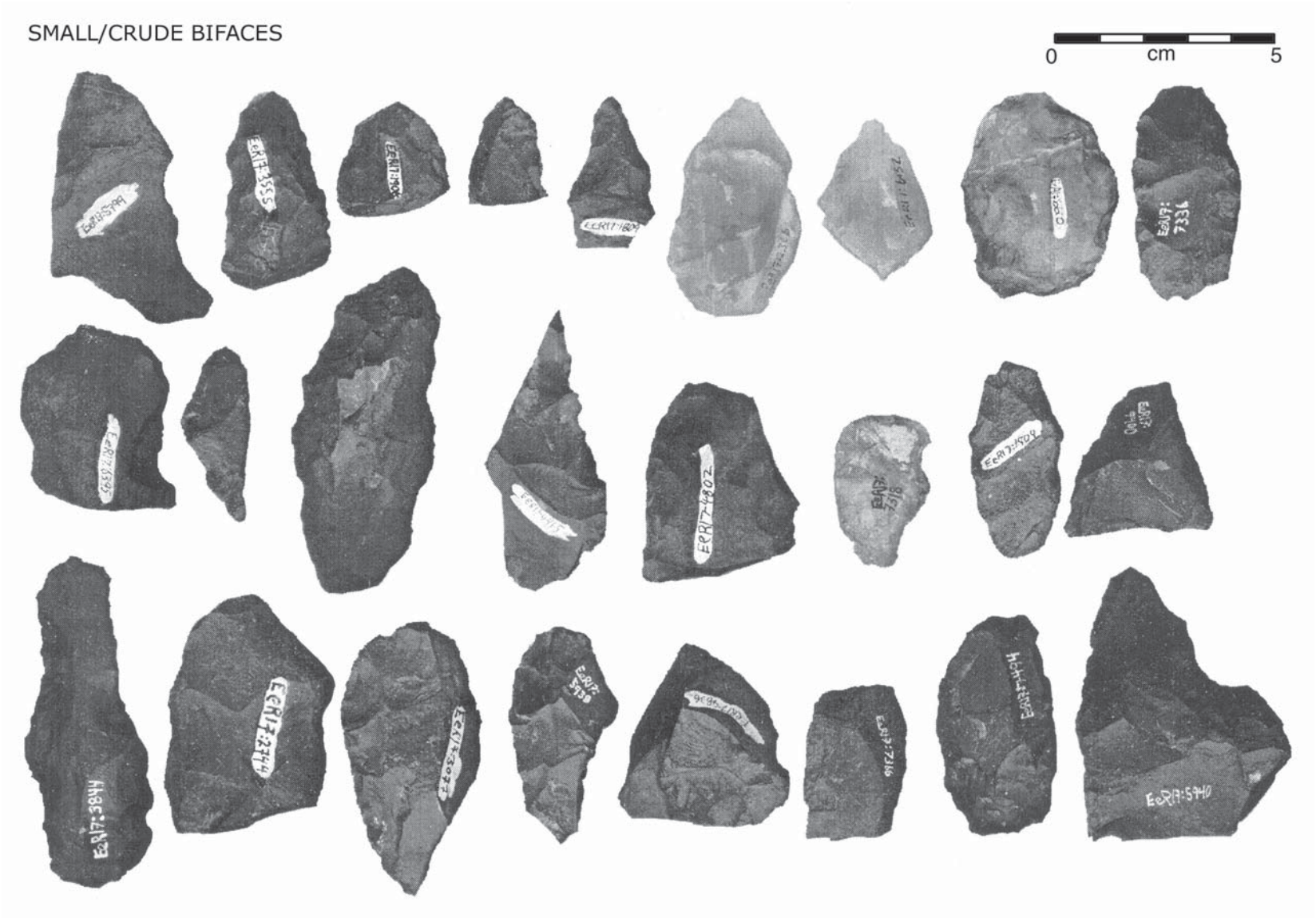


Figure 1. Examples of small, crudely made bifaces from Keatley Creek.

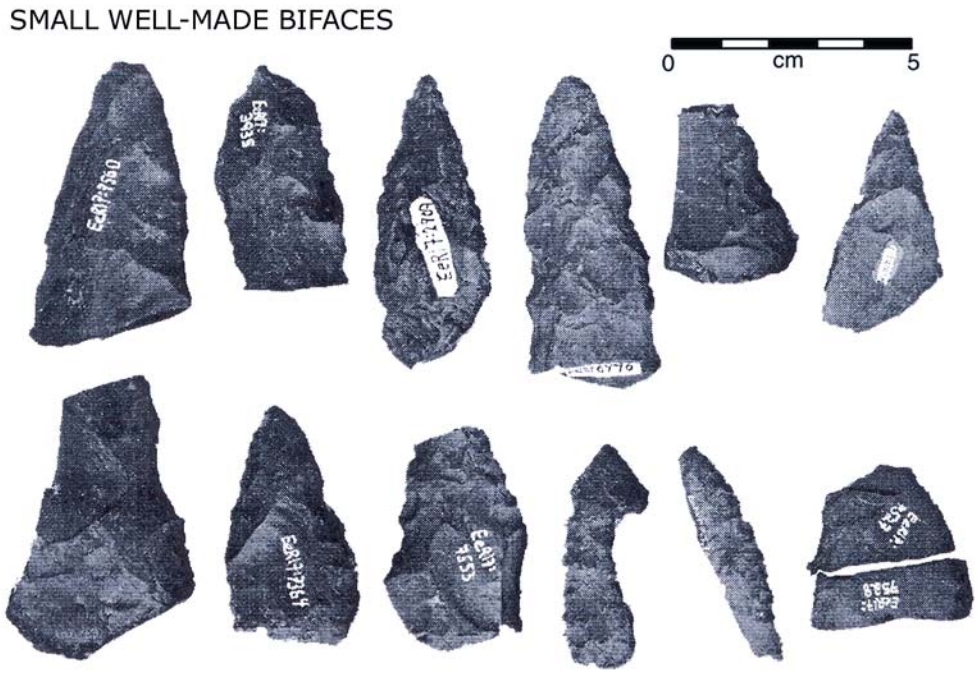


Figure 2. Examples of small moderately well finished bifaces from Keatley Creek.

Figure 3. Expedient bifaces.

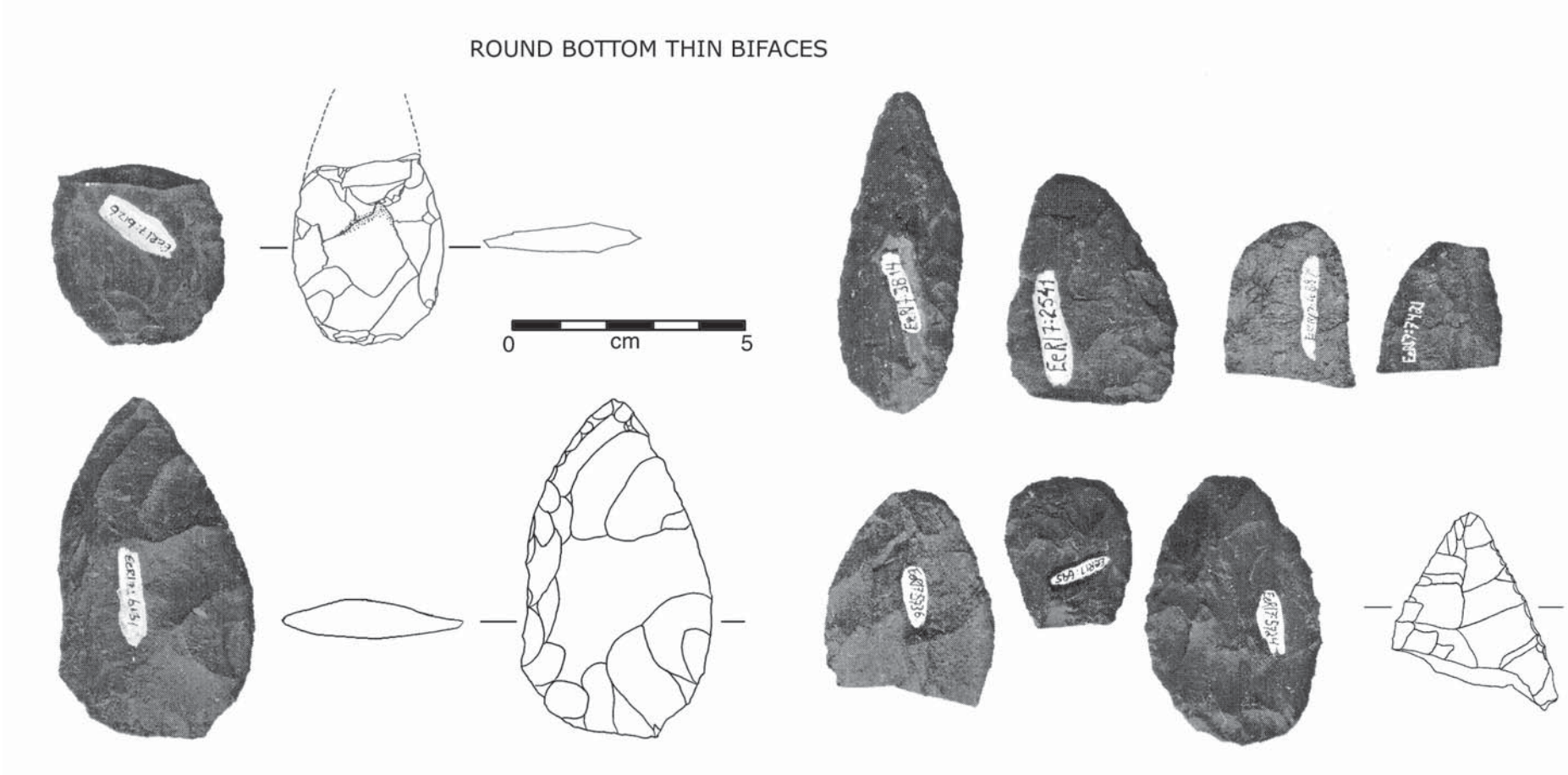


Figure 4. Type 131: Finely made round or oval base.

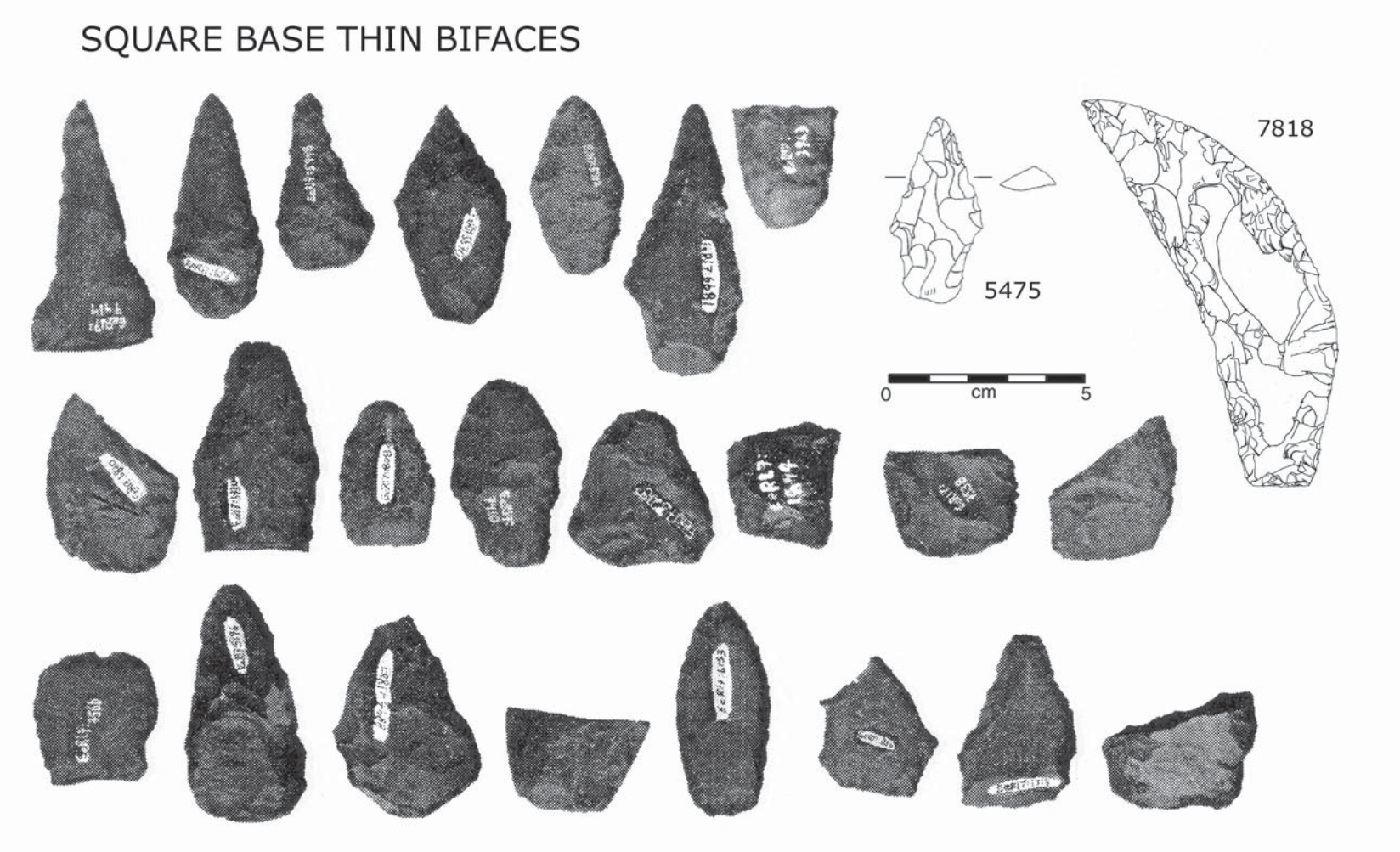


Figure 5. Type 131: Finely made square base.

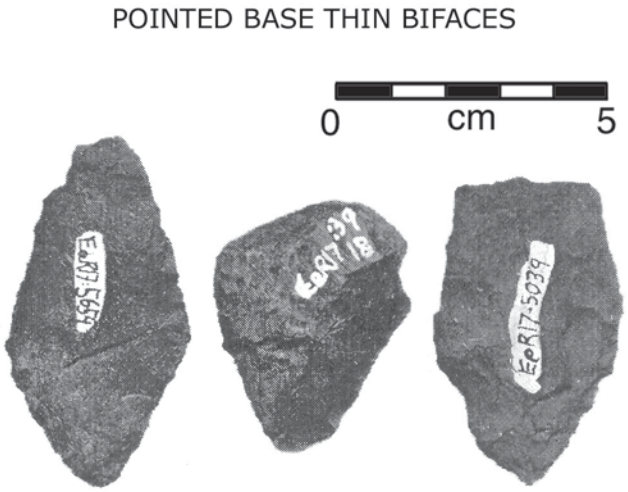


Figure 6. Type 131: Finely made pointed base.

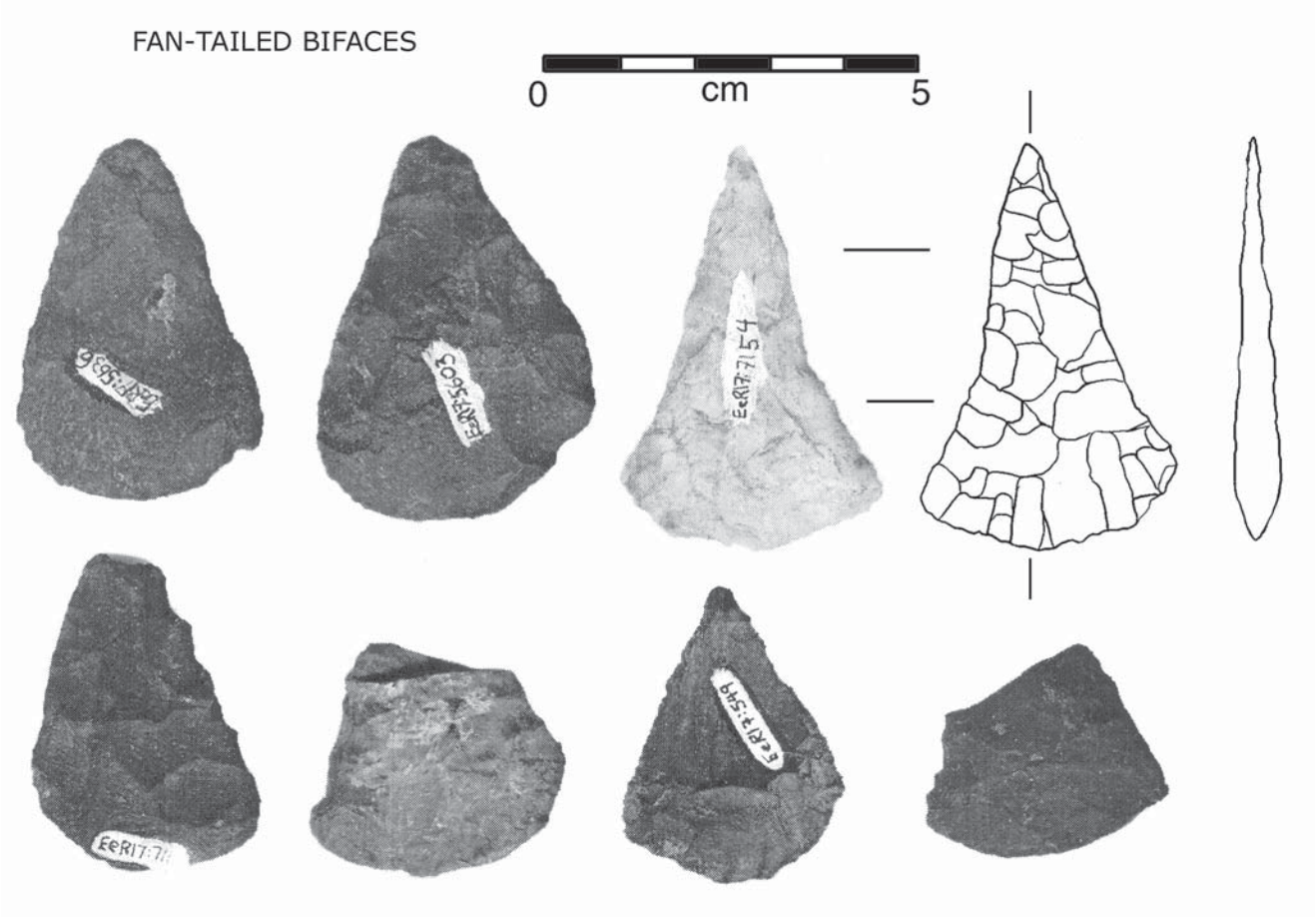


Figure 7. Type 139: Fan tailed bifaces (very thin).

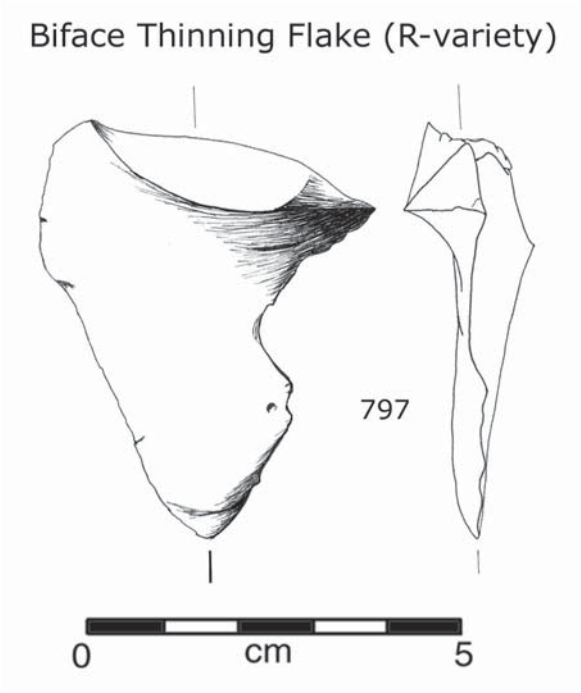


Figure 8. Type 008: Biface reduction flake.

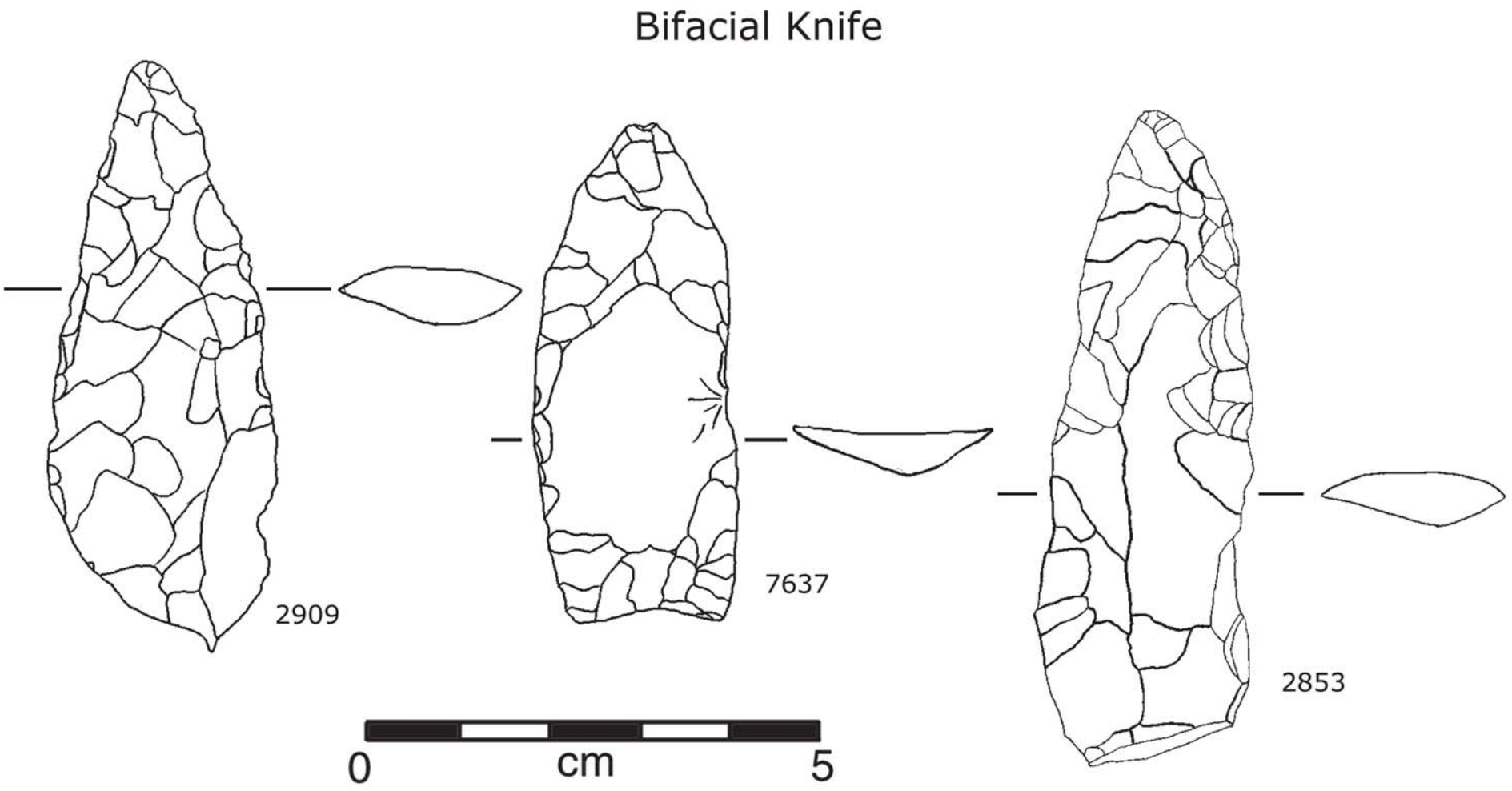


Figure 9. Type 130: Bifacial knife.

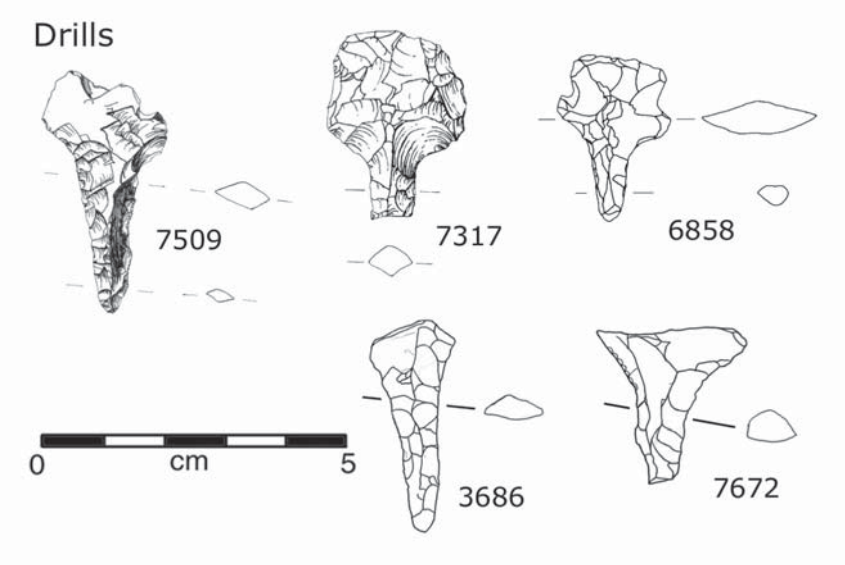


Figure 10. Types 133: Biface drill.

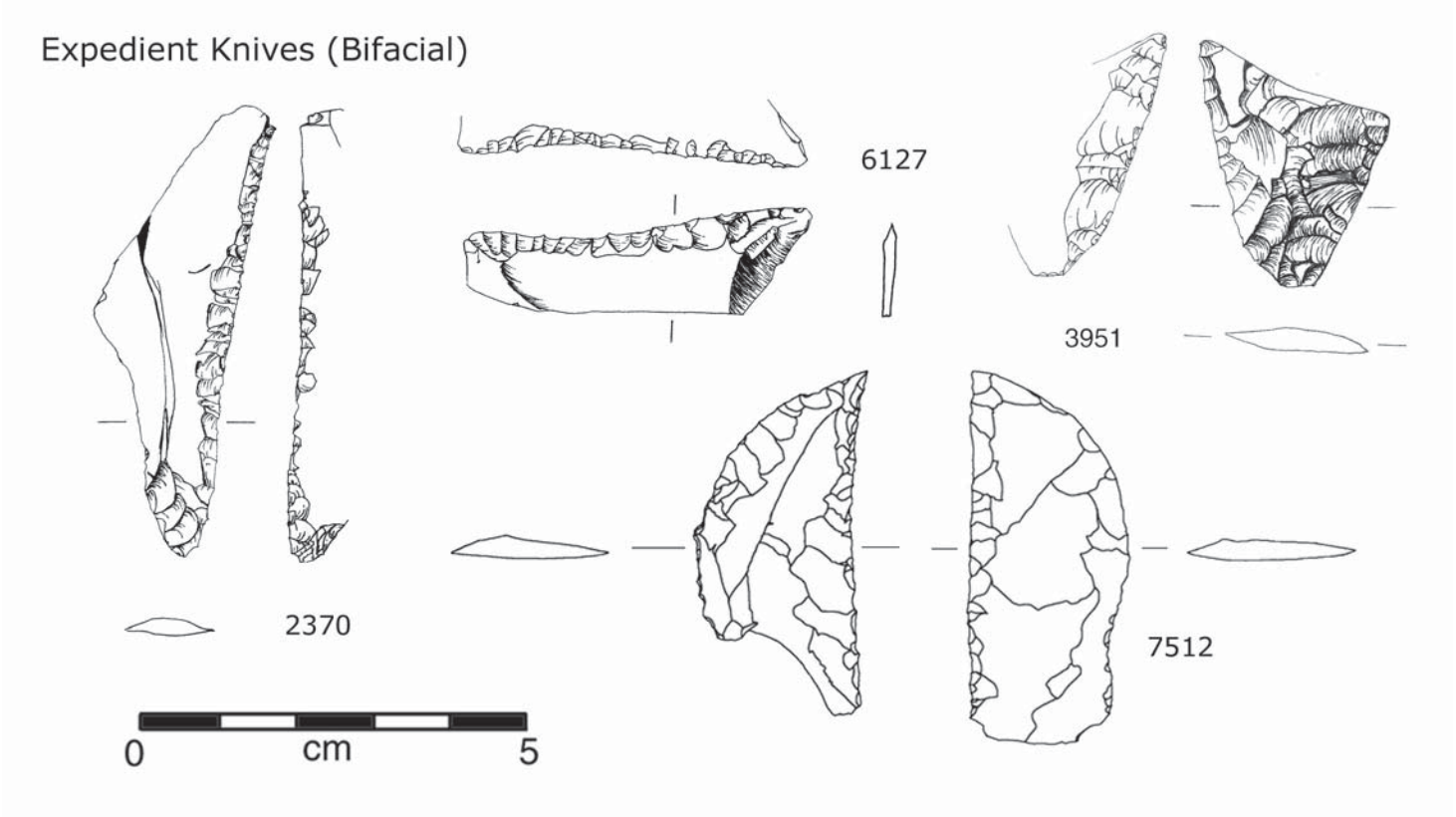


Figure 11. Types 140: Biface expedient knife.

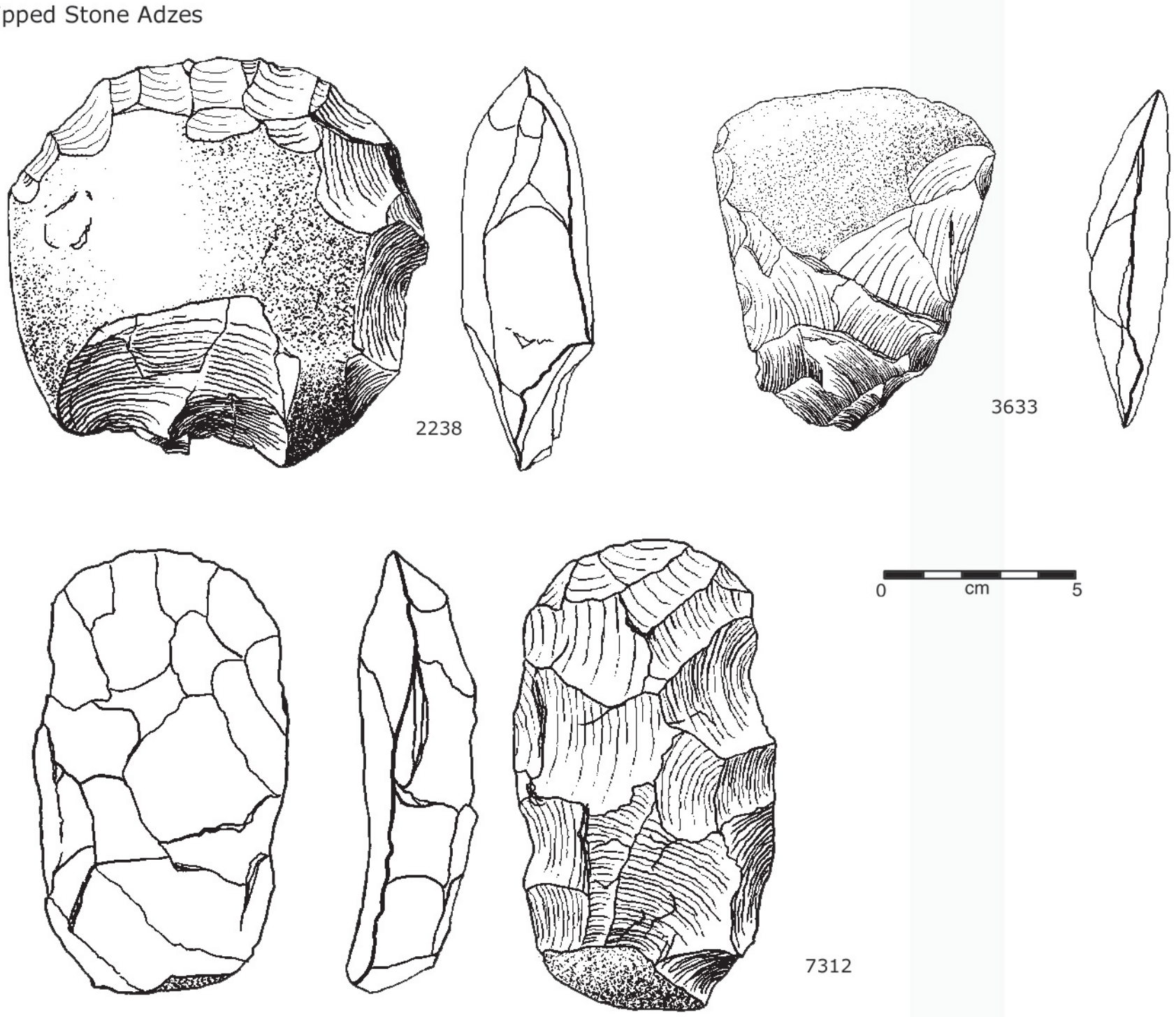


Figure 12. Type 185: Wedge-shaped or oval biface adze.

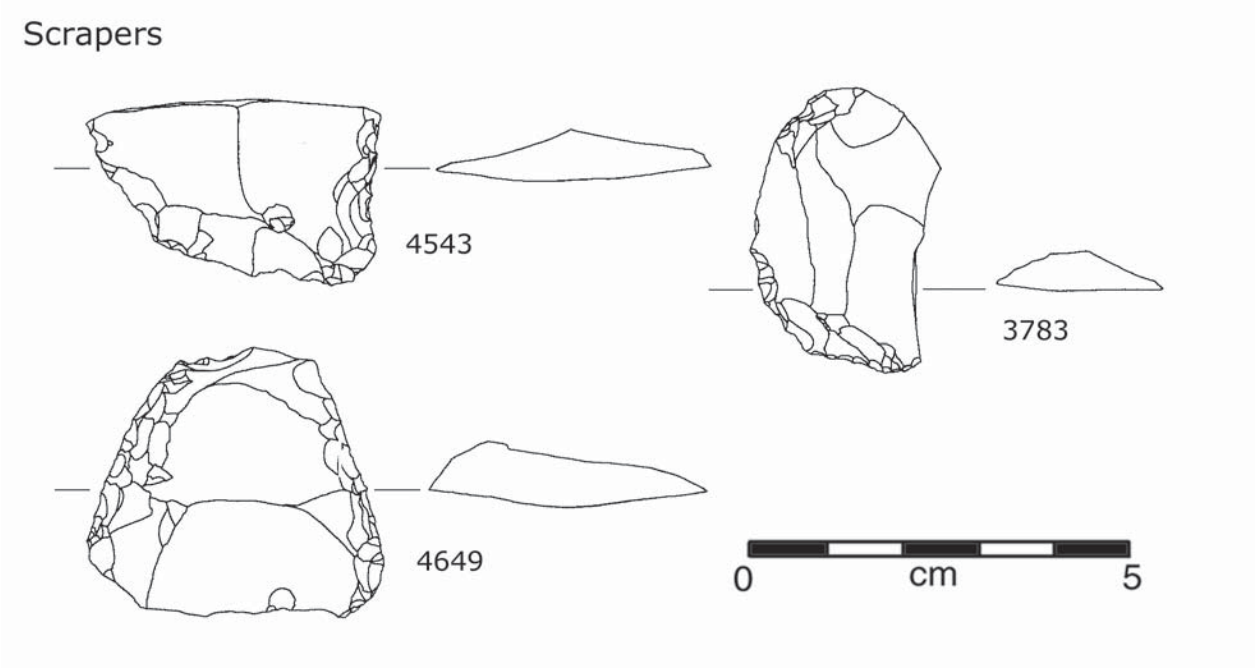


Figure 13. Types 150 and 164: Single and double scrapers.

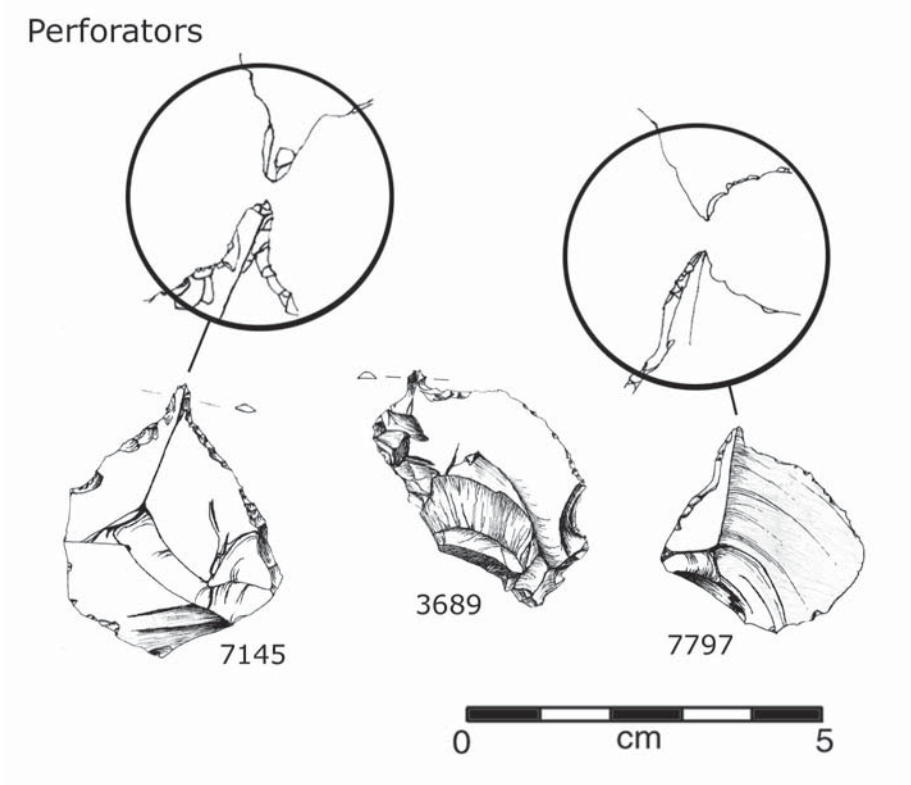


Figure 14. Type 151: Unifacial perforator.

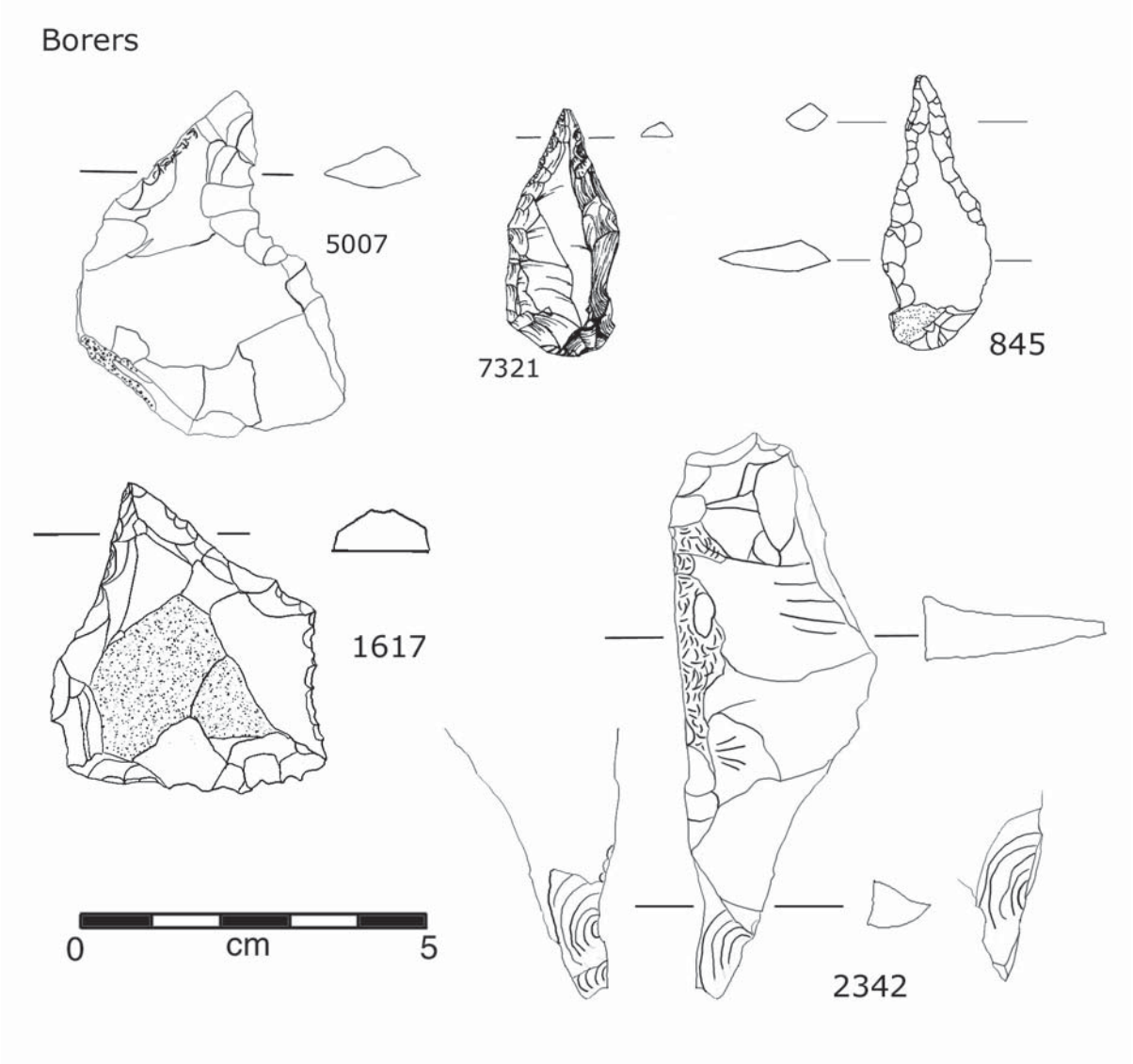


Figure 15. Types 152: Unifacial formed borer.

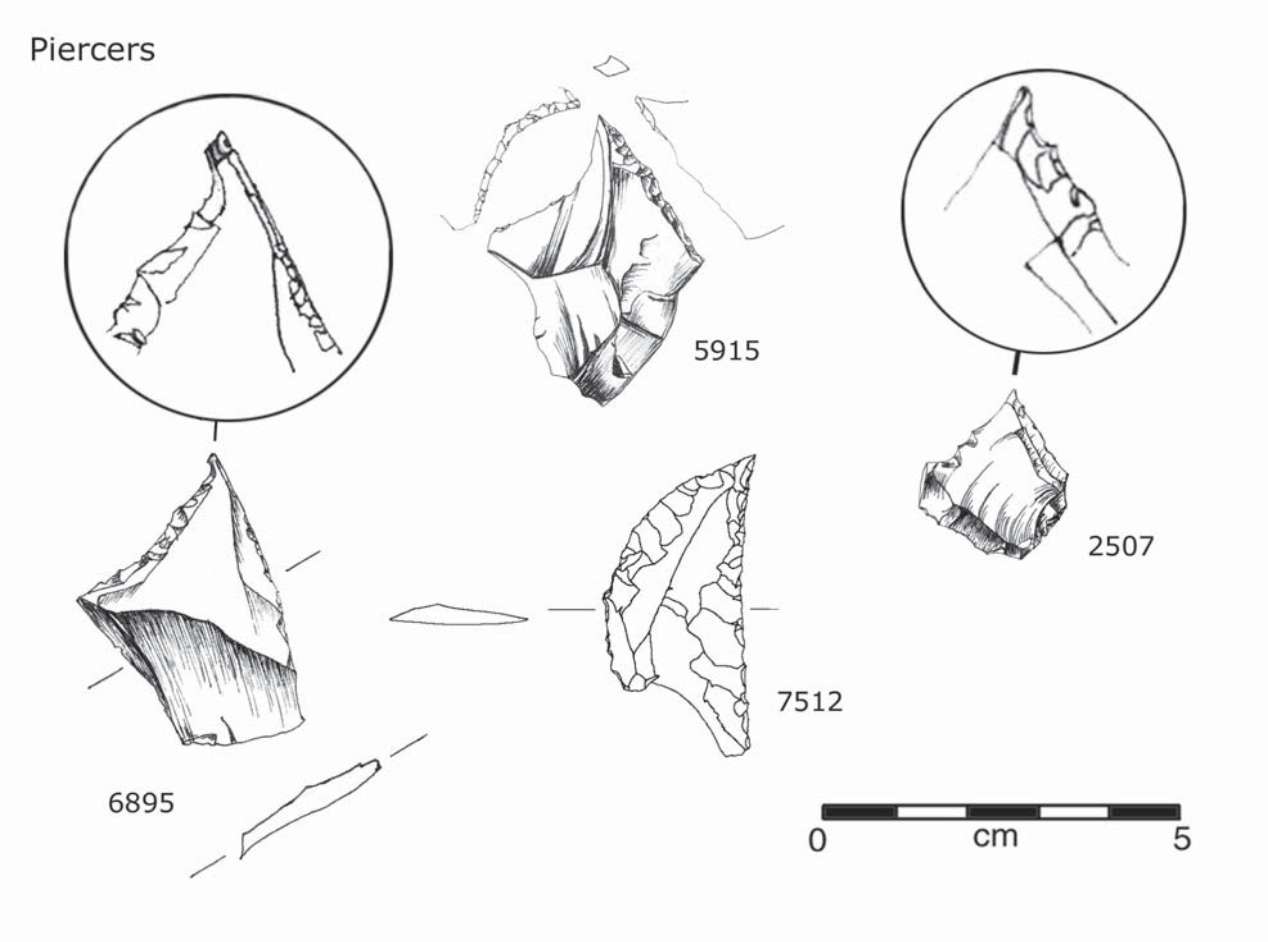


Figure 16. Types 153: Small piercer.

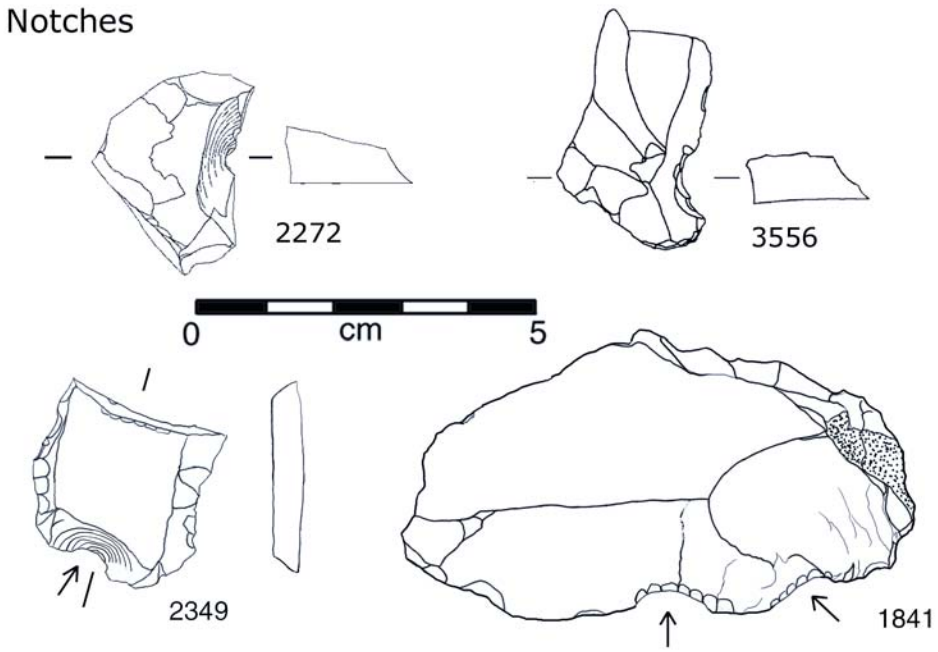


Figure 17. Type 154: Notch or multinotch.

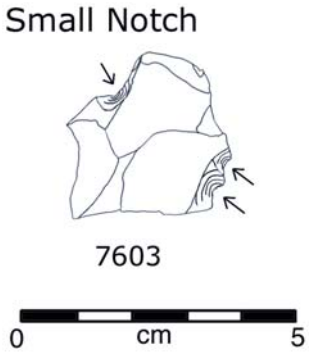


Figure 18. Type 054: Small notch.

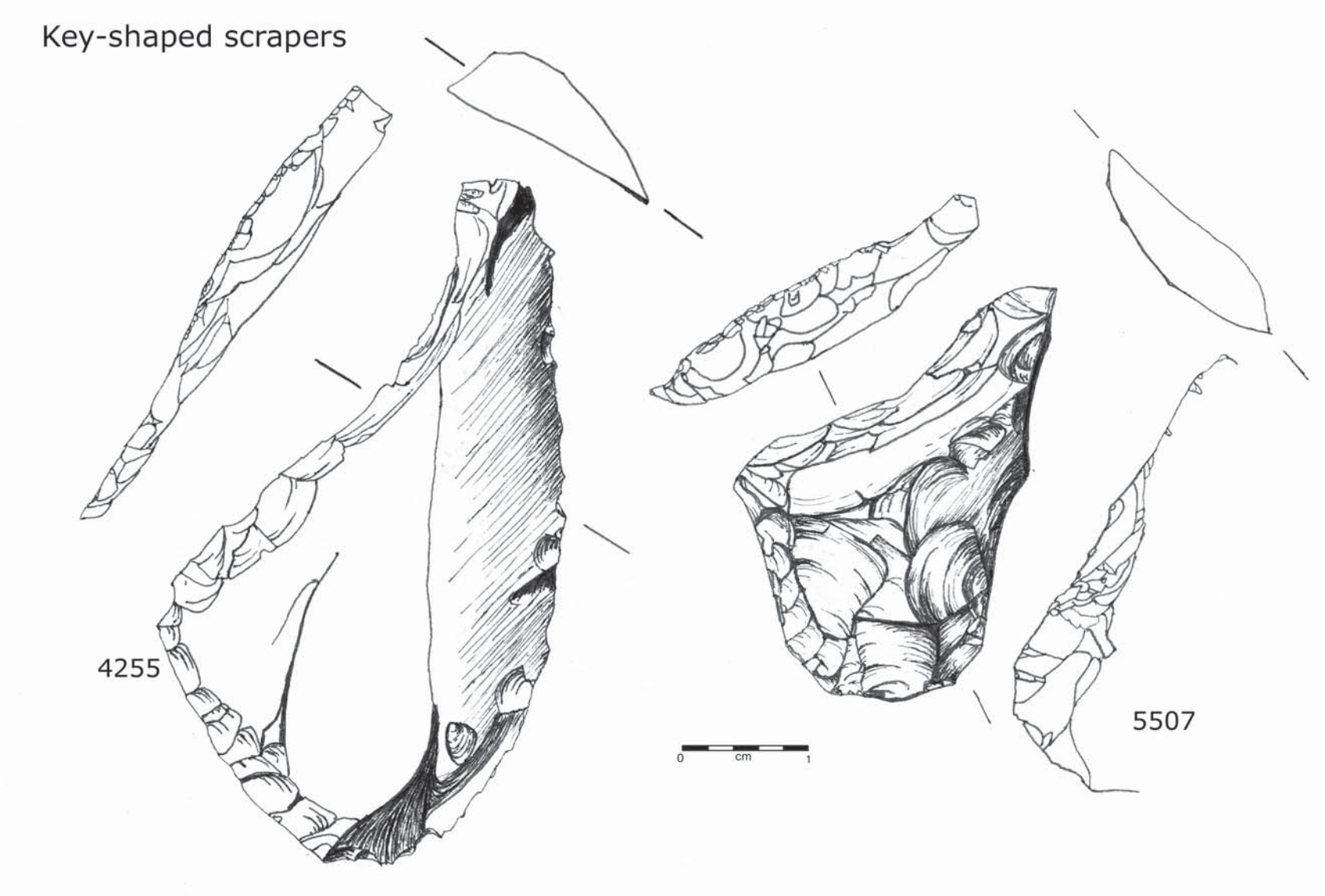


Figure 19. Type 158: Key-shaped unifacial scraper.

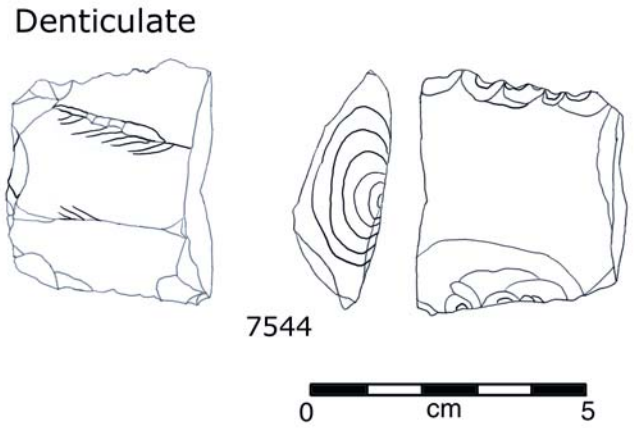


Figure 20. Type 160: Unifacial denticulate.

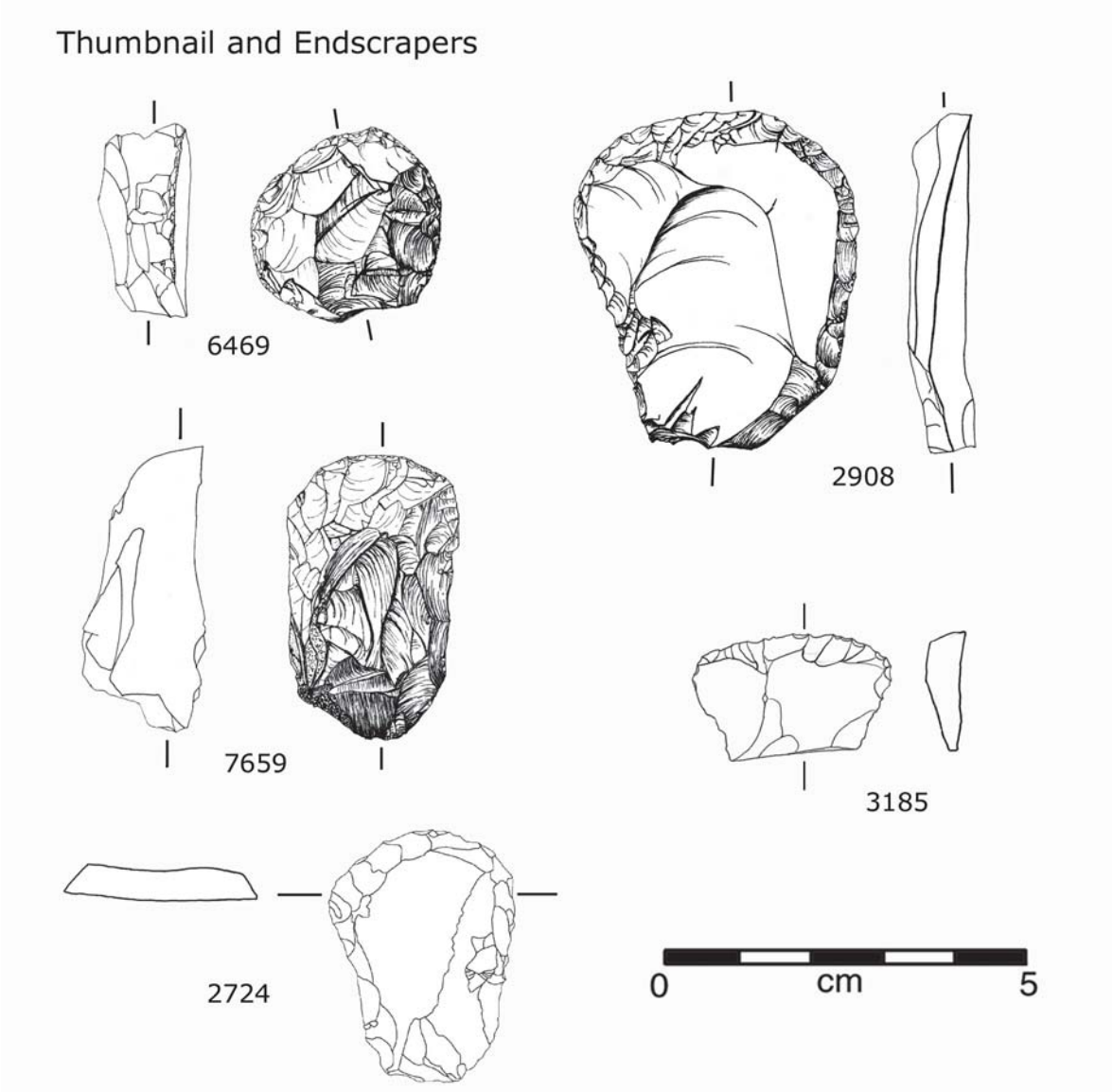


Figure 21. Type 161: Thumbnail scraper.

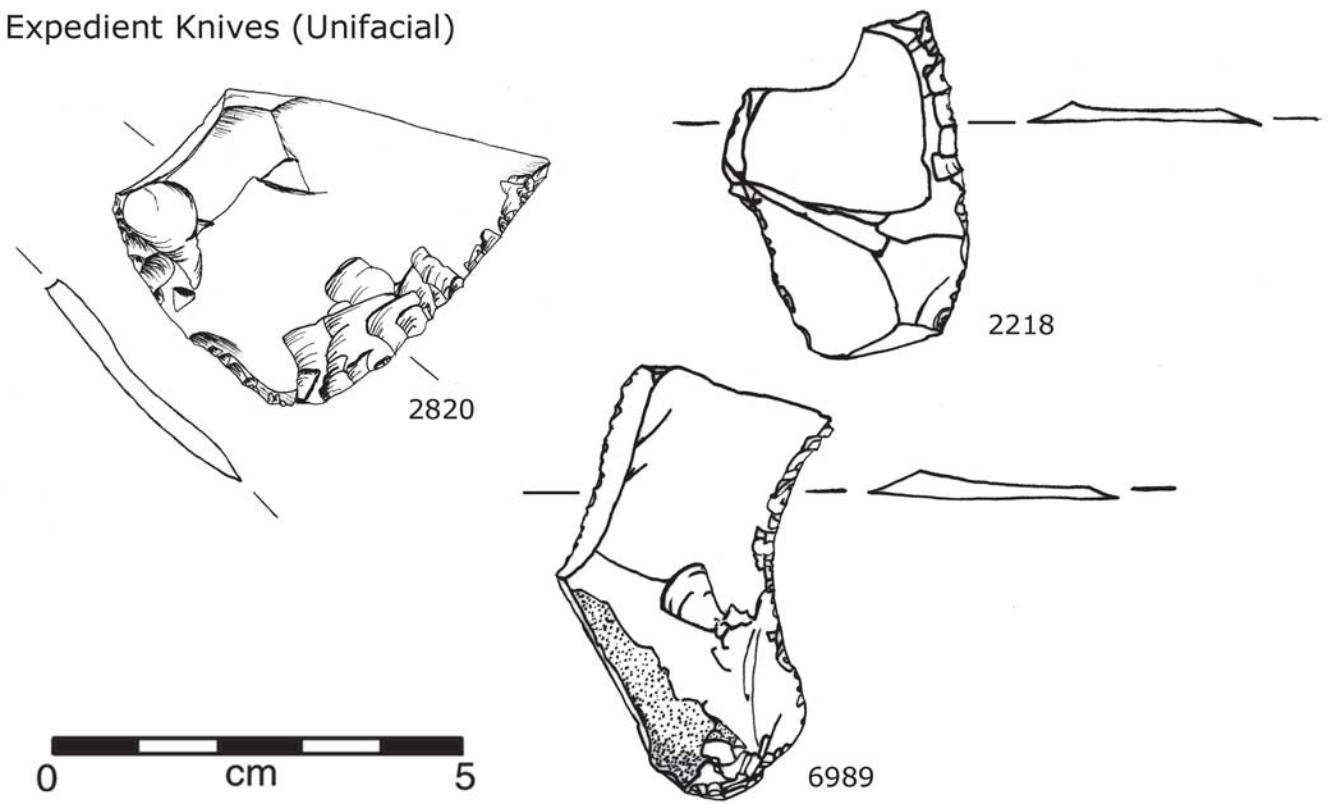


Figure 22. Type 170: Expedient knife.

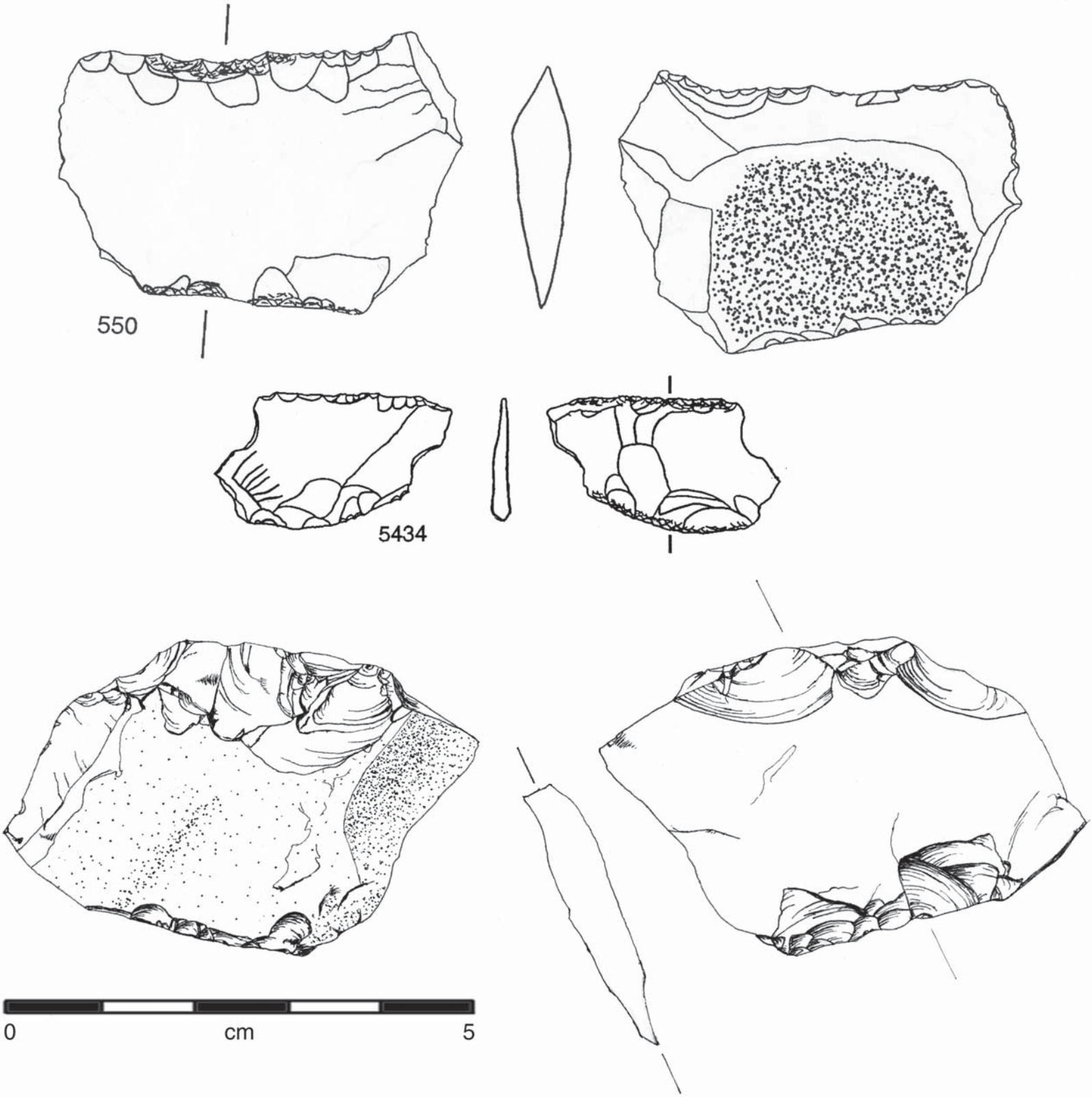


Figure 23. Types 145: Piece esquillee.

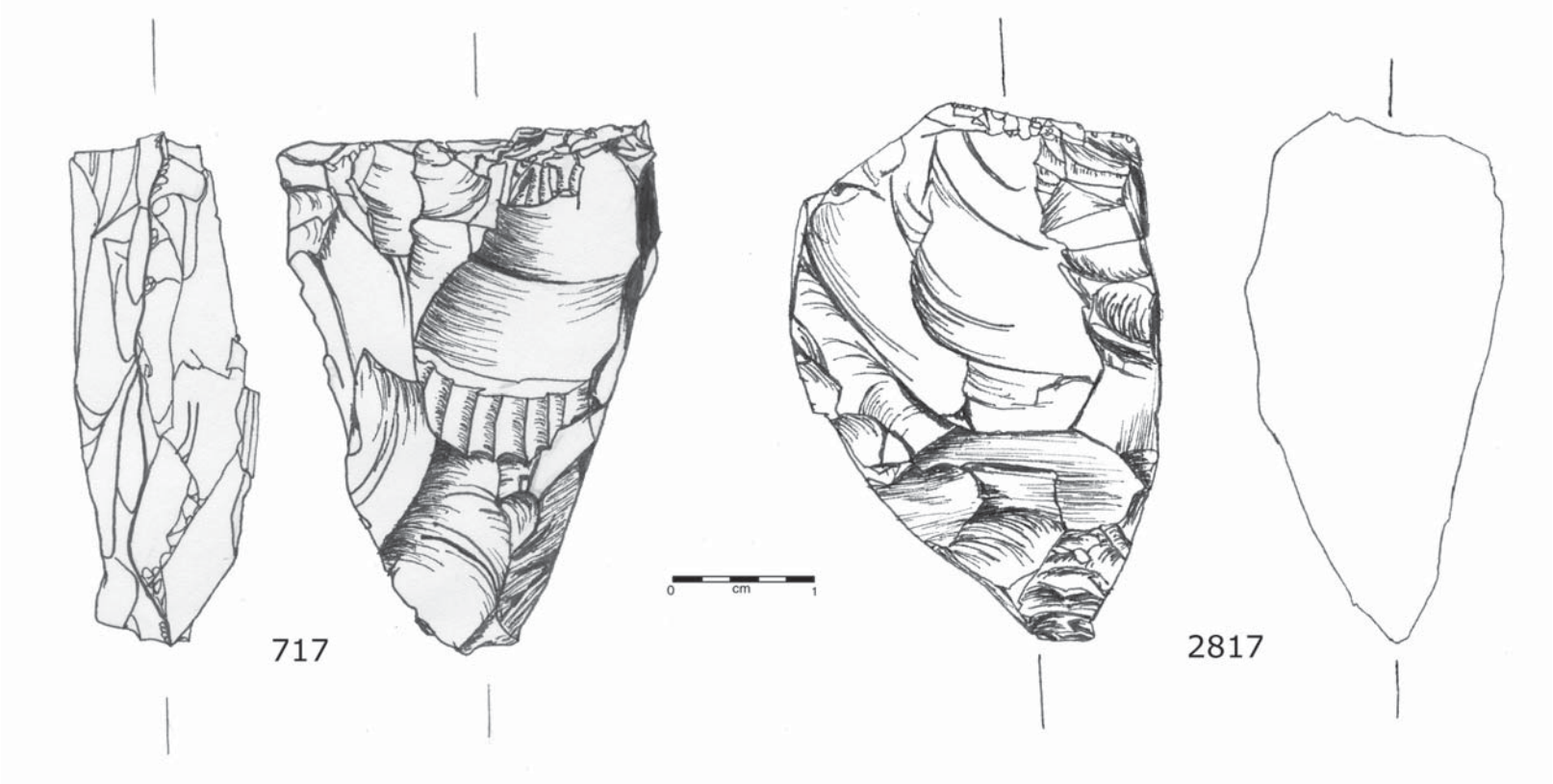


Figure 24. Types 146: Bipolar core.

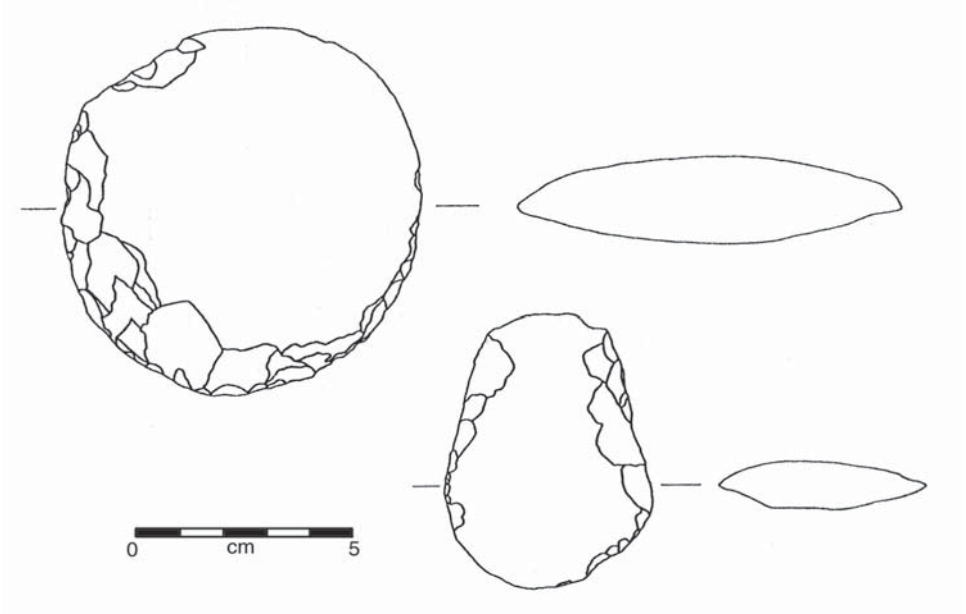


Figure 25. Type 184: Retouched spall tool.

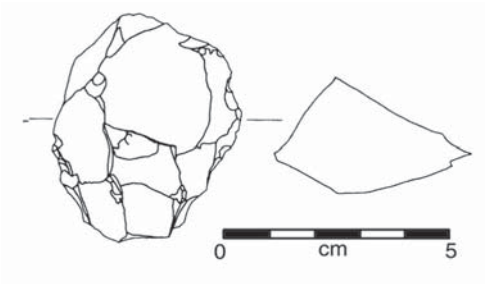


Figure 26. Type 186: Multidirectional core.

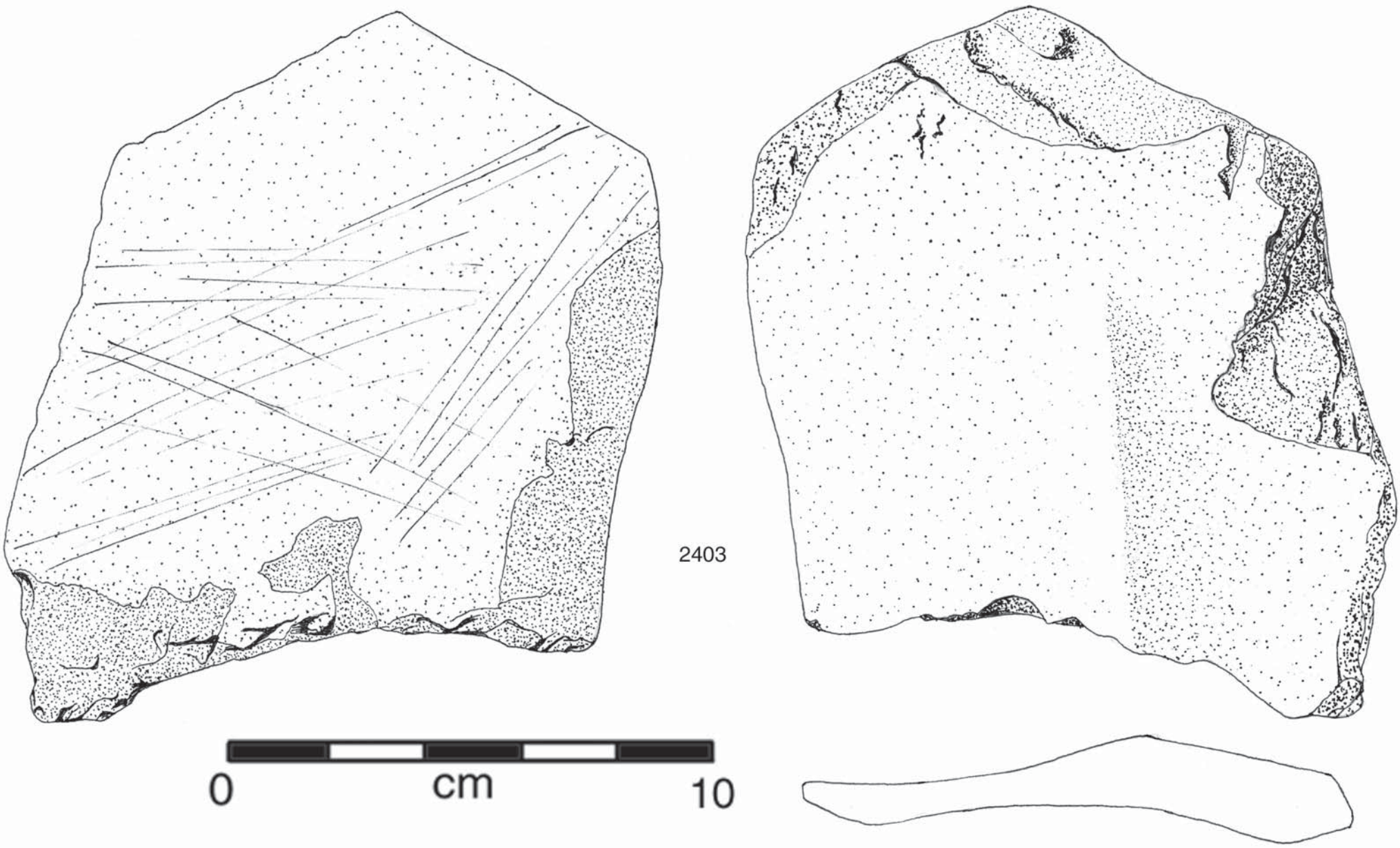


Figure 27. Type 201: Abrader.

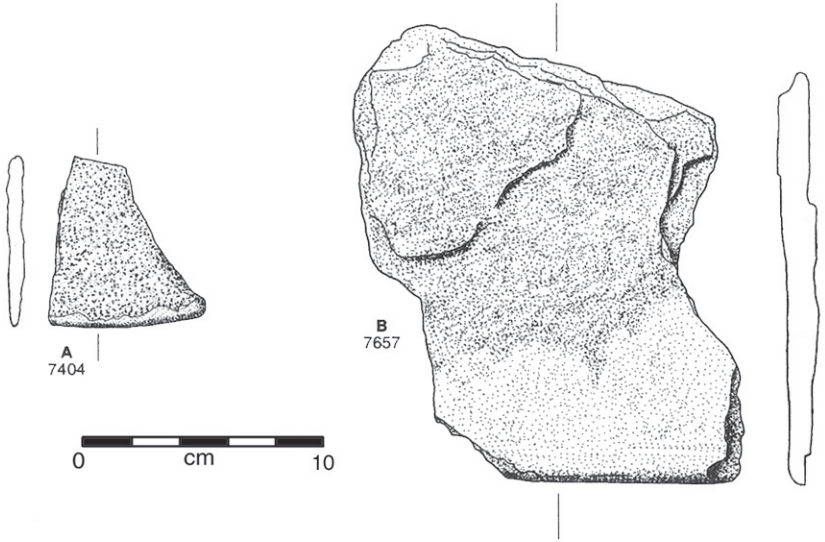


Figure 28. Type 202: Sandstone saw.

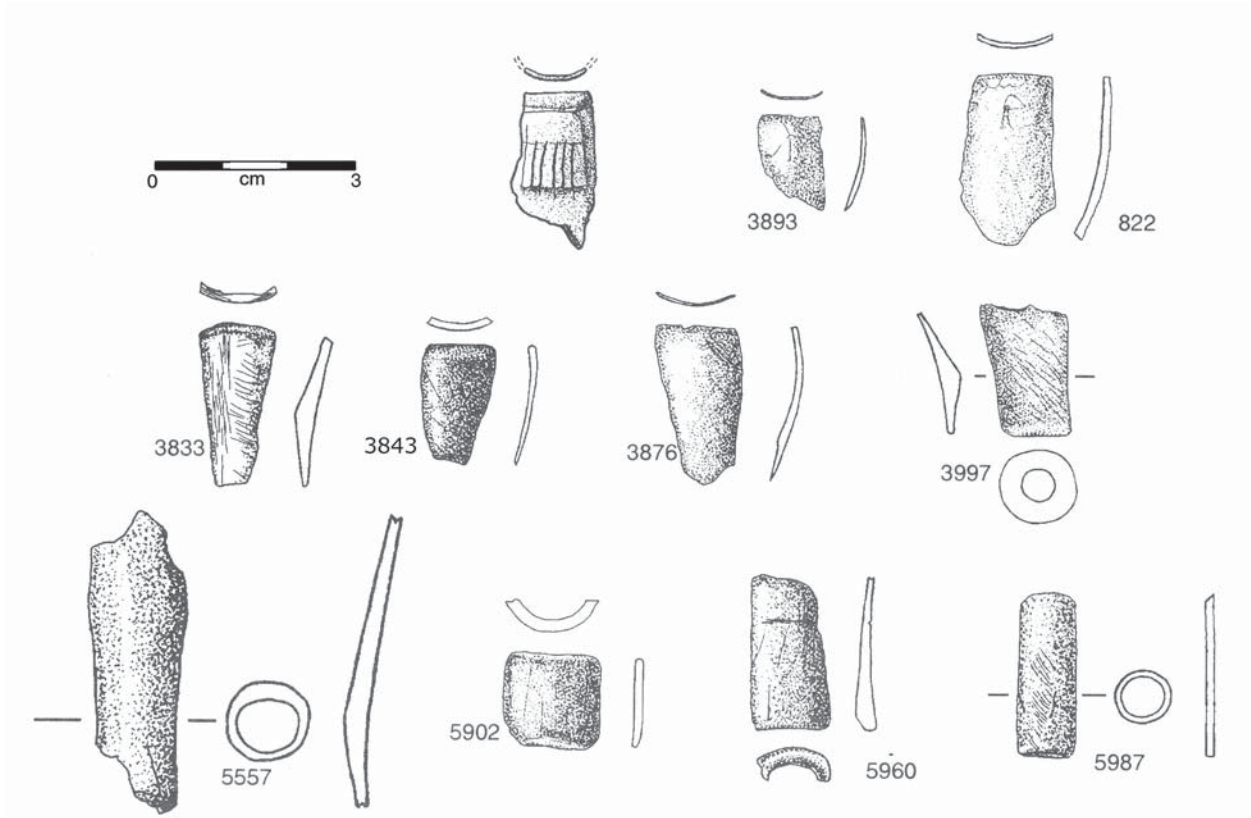


Figure 29. Type 204: Steatite pipe/tube fragment.

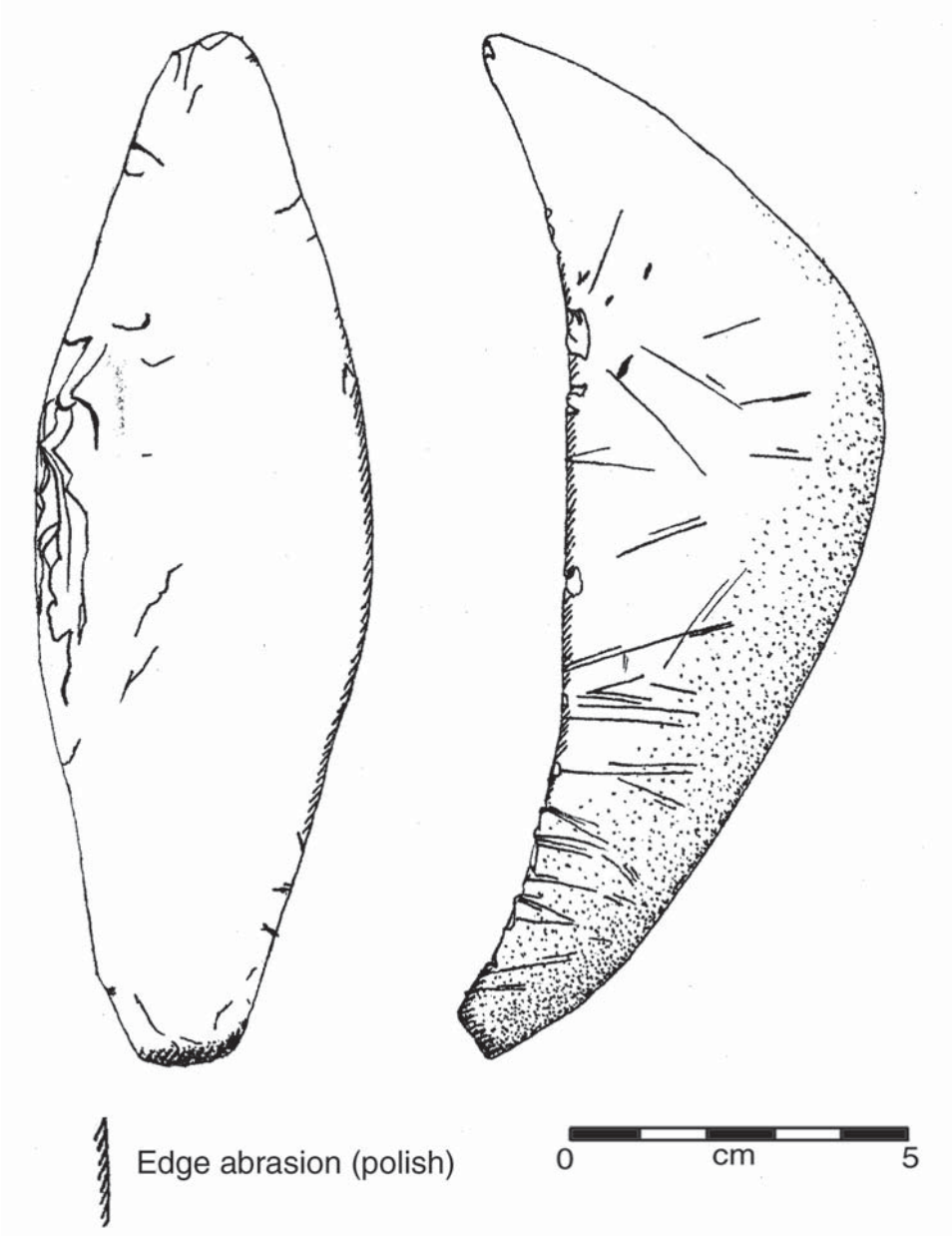


Figure 30. Type 208: Abraded cobble spall.

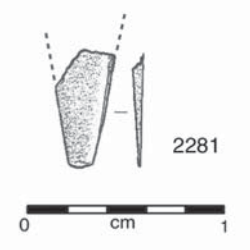


Figure 31. Type 209: Ornamental ground nephrite.

Figure 32. Type 210: Ochre or pigment.

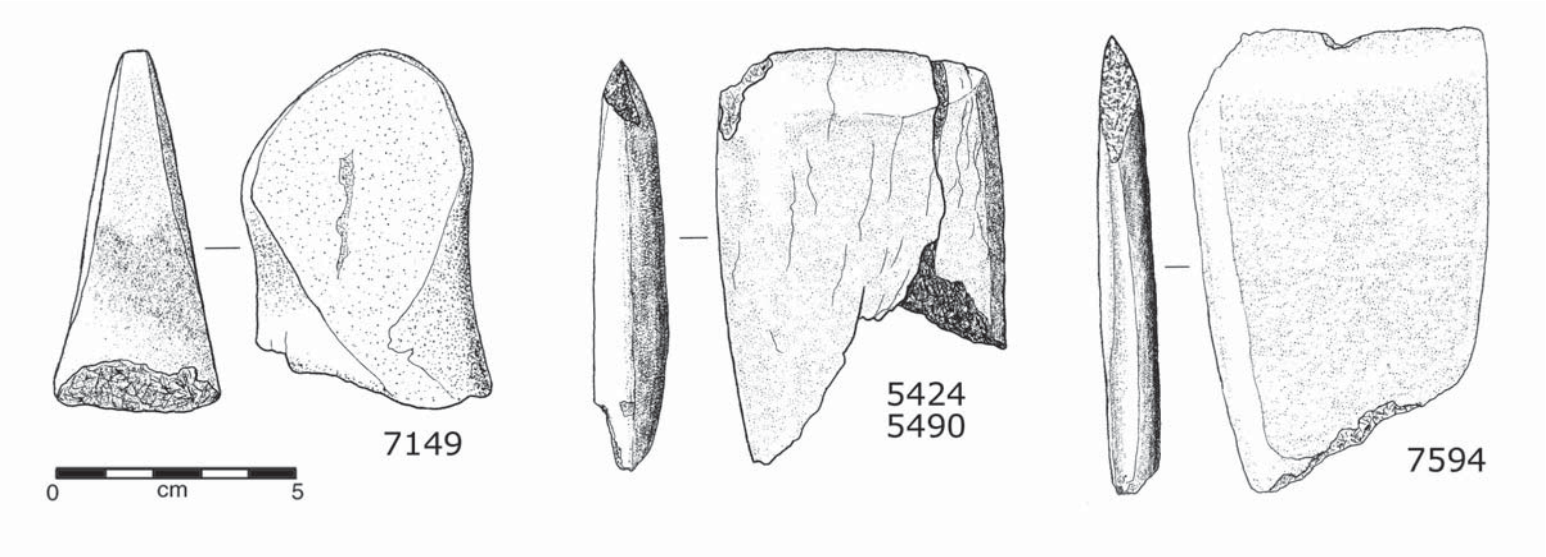


Figure 33. Type 218: Celt.

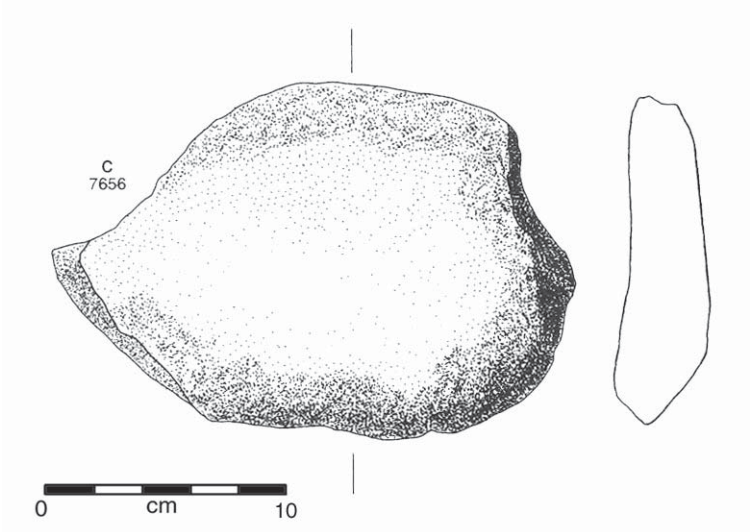


Figure 34. Type 211: Grinding stone/mortar.

Figure 35. Type 214: Stone bead.

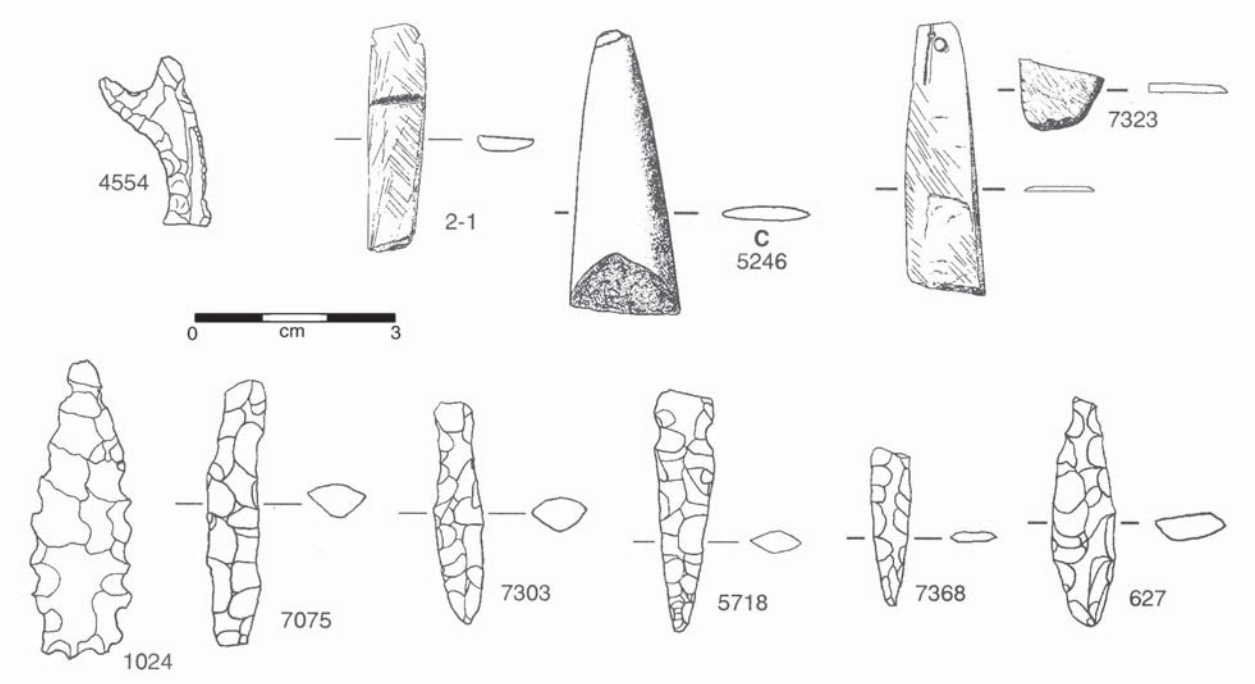


Figure 36. Type 215: Stone pendant.

Figure 37. Type 216: Ground or sculpted ornament.

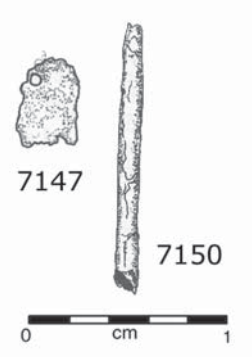


Figure 38. Type 217: Copper artifacts.

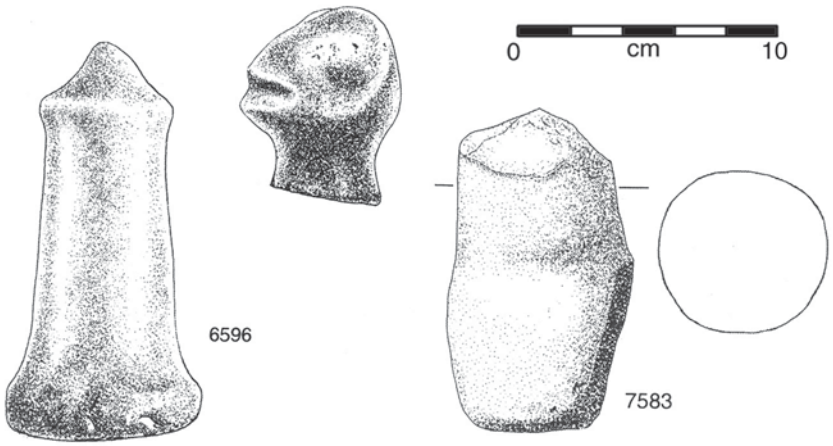


Figure 39. Type 219: Maul.

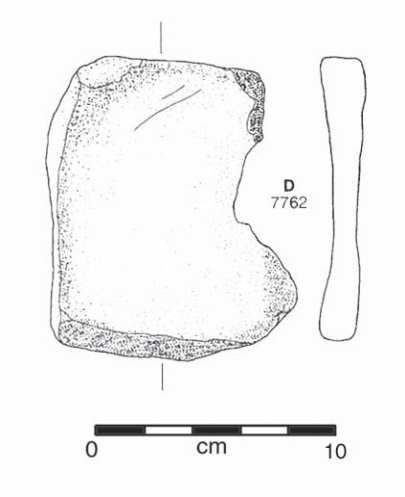


Figure 40. Type 221: Pigment palette.

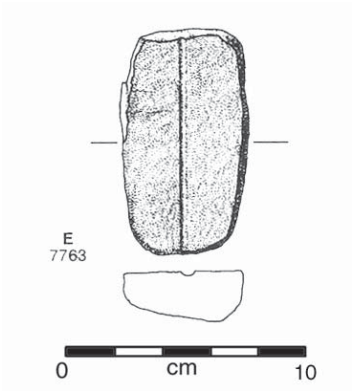


Figure 41. Type 222: Arrowshaft Staightener.

Photo 1. Item 7818.

Photo 2. Items 5424, 5490.

Photo 3. Items 7594, 7149.

Photo 4. Items 2281, 7151 & Chapter 2 Shell Bracelet fragment.

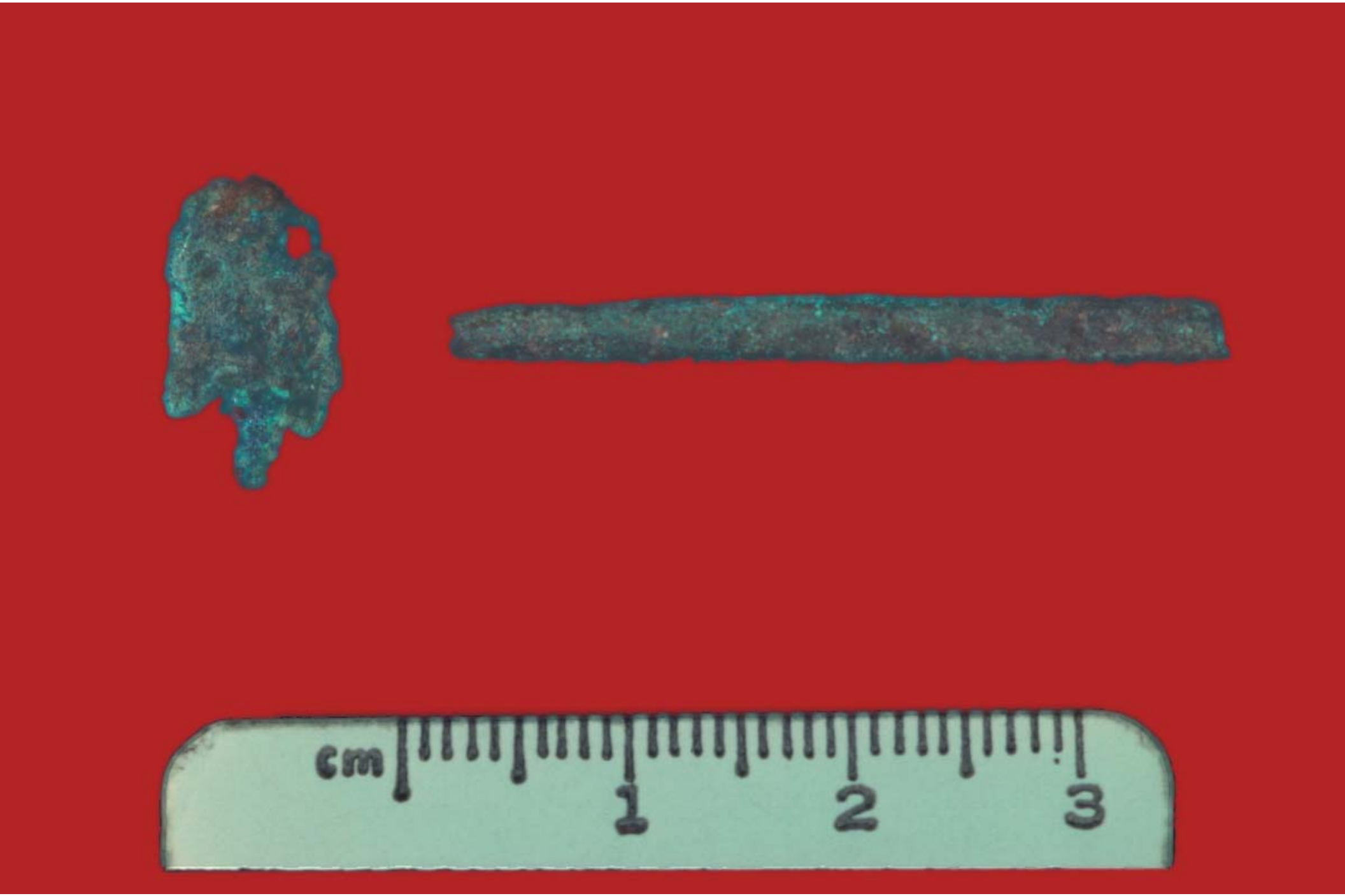


Photo 5. Items 7147, 7150.

Bone Artifacts Recovered From Keatley Creek

Karla D. Kusmer

Introduction

Over 200 bone, antler, and shell artifacts were recovered from Keatley Creek. These include awls, wedges, needles, worked scapulae and antler, bone and shell beads, dentalia, and various decorated pieces (Table 1). Deer bones and antler (also elk antler) were used for most of the types of tools recovered. Bird bones were made into whistles or drinking tubes. Beaver incisors were used in woodworking. Marine and freshwater shells were used as decorative and prestige items and freshwater shells may have had practical functions, as yet undetermined. A complete and illustrated list of bone artifacts follows this discussion. Shell fragments and beaver incisors were given artifact numbers only if evidence of use or human alteration was visible on the object. Freshwater shellfish and beaver are discussed in (Volume I, Chapter 10), and their frequencies at Keatley Creek are listed in Tables (1, 2, and 6 of that chapter).

Awls were the most common artifact recovered, and most of these were recovered from HP 7. Ethnographically, the long, pointed awls were used for a variety of tasks such as basket making, sewing skins and bark containers, and punching holes in tools and ornaments (Teit 1900, 1906, 1909). Most of the awls were made from deer metapodial bones, although deer ulna awls, a deer scapula awl, and a dog radius awl were found. Many of the recovered awls consisted only of the broken tip. Bone needles, used in sewing skins and basketry, were also recovered.

Deer metapodial bones were also made into spatulate tools or wedges such as those described in Stewart (Stewart 1996:92). They probably had a

variety of uses such as making birch bark containers, punching hole in hides, bark stripping, hide softening, and basket making.

Elk and deer antler was used for wedges, points or awls, billets, bark peelers, flakers, and digging stick handles at Keatley Creek. These types of tools were also used during the early historic period (Teit 1900, 1906, 1909). Antler wedges and chisels were used to cut down trees. Antler billets were used for making bifaces. Many of the large antler artifacts were found in HP 7 and HP 9. HP 9 contained most of the large antler artifacts, including the digging stick handle and bark peeler. Ethnographically, digging stick handles and bark peelers were often made of hard wood, a more common material than antler. This suggests that the antler tools may have been prestige items (particularly elk antler because of its relative rarity). Similarly, a piece of worked moose antler found in HP 7 would have been a prestige item, since moose was not found in the Lillooet area prehistorically and was traded in from nearby areas.

Eleven deer scapulae and one sheep/goat? scapula were recovered. All except one were recovered from HP 7. The spines of all the scapulae except one have been either cut off, or broken, at their bases. Their dorsal edges are beveled, and longitudinal striations are present parallel to the spines (see Vol. III, Chap. 3). The spine on one scapula, found on the roof in HP 7, is different and was apparently broken after deposition. All the scapulae are given artifact numbers because their anomalous occurrence suggests cultural utilization after butchery and consumption.

The presence of largely intact deer scapulae in the Keatley Creek faunal assemblage is of interest because so few other large, identifiable artiodactyl bones are present. It appears that most marrow-bearing bones were smashed for marrow extraction and grease production. It is not expected that scapulae would be treated in this manner because of their low marrow

content and their presence in the assemblage may simply reflect this differential treatment of skeletal parts after primary butchering. According to ethnographic studies of modern hunter-gatherers, the entire front leg, including the scapula, of medium ungulates is generally carried back to consumption areas in one piece (Binford 1981; O'Connell et al. 1988). The large amount of meat attached to scapulae and apparent inefficient removal of tissue in the field may account for the fact that they are most often transported back to residential camps (O'Connell et al. 1988). The occupants of Keatley Creek seem to have been following this pattern.

The presence of longitudinal striations on some of the scapulae could have been caused by filleting meat from the scapulae at the residential camp (Binford 1981). Thus, the presence of the scapulae and their condition may be explained by normal butchering activity. This does not rule out secondary use for digging, scooping, cutting, or ritual. The scapulae are found primarily in storage/refuse pits where they may have been discarded after breaking during use. Burr (Vol. III, Chap. 3) describes and illustrates the scapulae in detail and provides evidence suggesting that some of the scapulae were used as tools such as knives and trowels.

In addition to utilitarian applications, bone and shell were used for ornamental purposes and as objects of status and wealth. Many of the recovered bone artifacts were fragments of incised, polished, and perforated objects. Shell and bone beads, whistles, fragments of freshwater shell (some perforated), an incised and notched elk canine, a blanket pin, part of a marine shell (purple-hinged rock scallop) bracelet, dentalium shells, and bone buttons were recovered. The 72 bone buttons (flat, rectangular, with a hole in the middle) from a storage pit in HP 105 were probably sewn onto a skin.

Most of these decorative and uncommon items, including the marine shells, were found in HP 7 and HP 9, structures apparently associated with high status individuals (see Vol. II, Chap. 1). HP 7 also contained unmodified bones of fur-bearers and raptors not found elsewhere at the site and HP 9 contained loon and eagle bones not found elsewhere at the site. The marine shells indicate trade with the coast and high status and wealth for the houses involved. Dentalia, in particular, were valuable trade items and worn as decorative beads to indicate wealth and status both on the coast and the interior. The presence of these items in some houses but not others supports the presence of socioeconomic inequality within the community.

Relative to other artifact classes, fewer bone artifacts were recovered at the site than expected. Preservation is not a problem because the bones recovered are in good condition; the dry environment allowing even small fish bones to preserve well. It is probable that those bone and antler tools and ornaments difficult to obtain and/or time-consuming to manufacture were highly valued. These objects may have been taken from the housepits when they were abandoned and their absence gives credence to an orderly abandonment of the houses. Most prestige bone artifacts may ultimately have been deposited in burials, as evident at Texas Creek (Sanger 1968) and Cache Creek (Pokotylo et al. 1987). However, the low frequency of even broken utilitarian bone tools like awls is intriguing.

One group of tools, fishing implements (of any material), is almost non-existent. This is noteworthy considering the importance of salmon fishing in the area and the extensive amount of salmon bones recovered from the Keatley Creek site. Fishing implements may either have been left at fishing stations by the river or may have been made of more perishable materials such as wood.

Bone Artifact Distribution in HP 3, HP 7, and HP 12

The investigation of the distributions of artifacts, and animal and plant remains within HP's 3, 7, and 12 has formed a large part of the work at Keatley Creek. The distributions of bone artifacts for these housepits follows.

Of the three housepit floors, HP 7 contains a relatively larger number of bone artifacts, as is true of bones in general (Vol. II, Chap. 7). These artifacts tend to be unbroken and found along the periphery of the floor, as do the largest unmodified bone fragments (**Fig. 1**). These may have been stored in these areas. A number of bone artifacts were found in the large pits in HP 7 also. The number of bone tools and range of types and unusual/exotic types found in HP 7 (i.e., marine shell bracelet, deer scapulae, elk canine) is consistent with the interpretation of HP 7 as a relatively high status habitation. HP 9 also contains a relatively large number of artifacts, including many large antler objects and dentalia. This housepit may have served a special funtion.

Very few bone artifacts were recovered from HP 3 and they are generally the remnants of broken and discarded tools. The artifacts from HP 12 are in better condition than those from HP 3 and the density on the floor is greater (although numbers are still small).

HP 3 Floor

One incised bone fragment was found on the floor in the northeast and an antler wedge was found in a pit in the northeast, one perforated bone fragment was found on the floor in the south, and two worked antler fragments were found in a small pit in the west. These appear to be remnants of broken and discarded tools.

HP 3 Roof

Two barbed bone points, one awl, and one incised bone fragment were found in roof bottom deposits in the north. Three polished bone fragments were found in roof bottom deposits and one incised fragment was found in roof deposits in the east. One polished fragment was found in roof deposits in the south and one awl was found in roof bottom deposits in the southwest. All the artifacts are broken, suggesting they were thrown out on the roof with other refuse, although some items in the roof bottom may have been stored in the rafters.

HP 7 Floor

Sixteen bone artifacts were recovered from the floor, 17 artifacts were recovered from pits associated with floor deposits, and a domesticated dog (*Canis familiaris*) skull was found on the floor near the center of the housepit near the northwest hearth. In the northwest there were two awls and an incised bone fragment on the floor and two dentalium shells, one deer scapula, one broken bone needle, two awls, and one worked fragmented antler in pits. In the northeast there were two awls, one wedge, one blanket pin, and one perforated elk canine on the floor along with most of the beaver incisors; and a deer scapula was found in a pit. In the southeast there were fragments of a possible shell bracelet, one scapula, three awls and two bone needles on the floor, and one incised bone and two worked antlers fragments in pits. In the southwest there was one awl on the floor and three scapulae, two wedges, and one broken bird bone whistle in pits. The artifacts are generally distributed near the periphery of the floor and many are unbroken (six of the eight awls found on the floor are unbroken) suggesting they may have been stored near the walls, perhaps under benches.

HP 7 Roof

Few bone artifacts were recovered from the roof and they were in a more fragmented condition than artifacts from within the structure, suggesting they were broken and discarded. One awl was found in the northwest; one charred awl, three charred incised bone fragments, and one polished bone fragment were found in the west; one awl and one incised bone fragment were found in the northeast; and one charred awl fragment and one polished fragment were found in the east.

HP 12 Floor

Four bone and antler artifacts, other than the beaver incisors, were recovered from the floor. An antler wedge was found near the western edge of the floor and an artiodactyl metapodial "wedge" was found against the eastern edge of the floor. A polished bone fragment was recovered from the northeast and a broken bone needle was recovered in the northwest. The artifacts suggest basketry and woodworking activities on the part of the occupants of the house.

HP 12 Roof

Five bone and antler artifacts were recovered from roof deposits in addition to beaver incisors: an artiodactyl metapodial awl in the west, an artiodactyl metapodial awl and a polished large mammal bone fragment in the northwest, and a fragmented, worked piece of antler (from roof bottom) and an antler tine with the tip ground to a point from the eastern edge of the roof.

References

Binford, L. R.

1981 *Bones. Ancient Men and Modern Myths.* Academic Press, New York.

O'Connell, J.F., K. Hawkes, and N.B. Jones

1988 Hadza hunting, butchering, and bone transport and their archaeological implications. *Journal of Anthropological Research* 44:113–161.

Pokotylo, D., M. Binkley, and J. Curtin

1987 The Cache Creek burial site (EeRh 1), British Columbia. *British Columbia Provincial Museum Contributions to Human History.* No. 1.

Sanger, D.

1968 The Texas Creek burial assemblage, British Columbia. *National Museum of Canada, Anthropology Papers* 17.

Stewart, H.

1996 *Stone, Bone, Antler, and Shell. Artifacts of the Northwest Coast.* Douglas & McIntyre, Vancouver/Toronto.

Teit, J. A.

1900 The Thompson Indians of British Columbia. *American Museum of Natural History Memoirs* 2(4): 163–392.

1906 The Lillooet Indians. *American Museum of Natural History Memoirs* 4(5): 193–300.

1909 The Shuswap. *American Museum of Natural History Memoirs* 4(7): 443–813

Descriptions of Bone Artifacts

* = illustrated artifact

Housepit 1 (Fig. 2)

EeRl 7: 525* One bone awl was recovered from test trench excavations in 1986. A ll measurements are maximum dimensions.

EeRl 7: 2169* Rim spoil, Feature 1, 40ñ50 cm BS. Deer ulna awl. Extremely fragile and root etched. Only the proximal end of the ulna remains, it apparently came to a tip below the articular surface.
length: 9.5 cm, width: 3.5†cm.

EeRl 7: 2168* Rim spoil, Feature 1, 40ñ50†cm BS. Worked antler fragment. Very friable. Outer surface is missing at the base (Burr) due to extensive longitudinal cracking. Impossible to tell if the beam was broken or cut off, a nd one cannot tell original length of the artifact, although it was fairly large.
width: 4.0†cm at base

Housepit 3 (Fig. 3)

EeRl 7:2185 Sq. I, Ssq. 8, roof fill. Incised bone fragment.
length: 2.6 cm, width: 0.5†cm.

**EeRl 7:2188* Sq. G, Ssq. 14, roof fill. Charred, flat perforated bone fragment.
length: 3.2 cm, width: 1.3†cm.

**EeRl 7:5203* Sq. U, Ssq. 8, roof fill. Fragment of barbed point. Broken at both ends.
length: 4.5 cm, width: 0.7†cm.

EeRl 7:5206 Sq. I, Ssq. 13, roof bottom. Polished bone fragment.
length: 1.4 cm, width: 0.7†cm.

EeRl 7:5207 Sq. Q, Ssq. 16, roof bottom. Polished bone fragment.
length: 1.3 cm, width: 1.0†cm.

EeRl 7:5208 Sq. Q, Ssq. 16, roof bottom. Polished bone fragment.
length: 1.5 cm, width: 1.0†cm.

EeRl 7:5205—Sq. U, Ssq. 8, roof bottom. Abraded awl tip. Burned.
length: 1.7 cm, width: 0.6 cm.

**EeRl 7:5204*—Sq. N, Ssq. 4, roof bottom. Tip of bone awl(?). Relatively flat bone fragment with tip notched to a point.
length: 2.7 cm, width: 0.5 cm.

**EeRl 7:5200*—Sq. V, Ssq. 10, filter collapse. Perforated and beveled bone fragment. Fragment of pendant has a hole drilled in one end and a decorati ve line of bevels.
length: 2.1 cm, width: 1.3 cm.

**EeRl 7:5202*—Sq. U, Ssq. 8, filter collapse. Fragment of barbed point, broken at both ends.
length: 2.0 cm, width: 0.6 cm.

**EeRl 7:2175*—Sq. AA, pit fill (AA1). Artiodactyl antler wedge.
length: 5.4 cm, width: 1.6 cm.

**EeRl 7:5201*—Sq. M, Ssq. 2, pit fill, level 2 (89-1). Abraded artiodactyl antler tine.
length: 7.5 cm, width: 2.2 cm.

**EeRl 7:5217*—Sq. M, Ssq. 2, pit fill, level 3 (89-1). Fragmentary, abraded antler wedge.
length: 6.4 cm, width: 4.0 cm.

EeRl 7:2186—Sq. AA, Ssq. 15, floor. Incised fragment, possibly of an awl.
length: 3.1 cm, width: 0.8 cm.

EeRl 7:2189—Sq. G, Ssq. 6, floor. Charred, flat, perforated bone fragment.
length: 3.2 cm, width: 1.3 cm.

**EeRl 7:5282*—Sq. U, filtered collapse. Flat piece of shell with drill hole (Vol. II, Chap. 13, Fig. 3M).

Housepit 4 (Fig. 4)

**EeRl 7: 2001, 2002*—Two bone awls and an incised rib fragment were recovered from test trench excavations in 1986.

Housepit 6 (Fig. 4)

**EeRl 7: 2003, 2004*ó One bone awl and a perforated fragment of flat bone were recovered from test trench excavations in 1986.

Housepit 7 (Fig. 5)

**EeRl 7: 2005, 2009*ó Two awls; *2007-8ó one flat bone triangle; and *2000, 2010ó three incised bone fragments were recovered from the test trench excavation in 1986.

**EeRl 7:2198*ó Sq. P, Ssq. 13, floor. Artiodactyl metapodial awl.
length: 5.0 cm, width: 1.5†cm.

**EeRl 7:2199*ó Sq. J, Ssq. 14, floor. Large mammal long bone awl.
length: 16.0 cm, width: 2.1†cm.

*EeRl 7:5239*ó Sq. LL, Ssq. 9, floor. Deer metapodial awl.
length: 6.0 cm, width: 2.1†cm.

**EeRl 7:5237*ó Sq. NN, Ssq. 7, floor. Bone fragment with parallel incised lines.
length: 2.2 cm, width: 0.8†cm.

*EeRl 7:5226*ó Sq. TT, Ssq. 12, floor. Tip of bone point or needle. Very sharp, polished, burned.
length: 1.6 cm, width: 0.5†cm.

*EeRl 7:5246*ó Sq. LL, Ssq. 10, floor. Bone wedge.
length: 4.5 cm, width: 1.7†cm.

*EeRl 7:5228*ó Sq. VV, Ssq. 10, floor. Tip of bone point or needle. Very sharp, polished, burned.
length: 2.0 cm, width: 0.4†cm.

**EeRl 7:5244*ó Sq. OO, Ssq. 4, floor. Elk canine tooth pendant. Tooth is incised and notched around root.
length: 2.4 cm, width: 1.4†cm.

**EeRl 7:5216*ó Sq. JJ, Ssq. 12, floor. Bone awl fragment.
length: 8.0 cm, width: 0.9†cm.

EeRl 7:5245* Sq. NN, Ssq. 7, floor. Deer metapodial awl. Split and point made from proximal end. Very similar to EeRl 7:5238.
length: 7.6 cm, width: 2.1†cm.

EeRl 7:5235* Sq. OO, Ssq. 12, floor. Notched blanket pin (?).
length: 7.1 cm, width: 0.8†cm.

EeRl 7:5236 Sq. U, Ssq. 11, floor. Deer metapodial awl. Burned, tip broken.
length: 6.0 cm, width: 1.5†cm.

EeRl 7:5234* Sq. UU, Ssq. 13, floor. Deer metapodial awl.
length: 13.0 cm, width: 2.1†cm.

EeRl 7:5230* Sq. UU, Ssq. 14, floor. Dog radius awl. Proximal end unfused.
length: 11.0 cm, width: 1.7†cm.

EeRl 7:5242* Sq. QQ, Ssq. 13, floor (see Chap. 3, this Volume). Deer scapula. Head and neck and most of body gone. No signs of working or use visible to the naked eye.
length: 16.5 cm, width: 4.4†cm.

EeRl 7:5268* Sq. QQ, Ssq. 10, floor (see Vol. II, Chap. 13, Fig. 3H). Possible shell bracelet fragment, cut from purple-hinged rock scallop (*Hinnites giganteus*) , a large marine intertidal bivalve.
length: 4.7 cm, width: 0.8†cm.

EeRl 7:1971* Pit fill, roof beam foundation ? (88-P-5) (See Chap. 3, this Volume). Right deer scapula. Dorsal section only is remaining, and is broken below the spine. It is weathered with longitudinal cracking.
length: 13.7†cm.

EeRl 7:1972* Pit fill, roof beam foundation? (88-P-3) (See Chap. 3, this Volume). Left deer scapula. Spine broken off at its base. The dorsal end is broken. No evidence of utilization or longitudinal striations.
length: 16†cm.

EeRl 7:1975* Pit fill, roof beam foundation? (88-P-4) (See Chap. 3, this Volume). Left deer scapula. Almost complete. Cut marks present near glenoid cavity. The spine is broken off at its base. No evidence of utilization or longitudinal striations.
length: 23.3†cm.

*EeRI 7:1979*óPit fill, roof beam foundation (88-P-2). Beaver incisor. Pointed tip of the incisor appears to have been utilized.
length: 3.5†cm.

**EeRI 7:2179*óPit fill (87-P-1) (See Chap. 3, this Volume). Small artiodactyl scapula (sheep/goat?). Spine cut off. Head, neck and body to left of spine are present. Cut edge is bevelled.
length: 18.0 cm, width: 3.8†cm.

**EeRI 7:2180*óPit fill (87-P-1) (See Chap. 3, this Volume). Deer left scapula. Only body remains; neck and body broken off. Spine cut off. Broken edge to the left of the spine has been ground and longitudinal striations parallel to the spine occur between the spine and left edge.
length: 16.0 cm, width: 5.6†cm.

**EeRI 7:2181*óPit fill (87-P-1) (See Chap. 3, this Volume). Deer right scapula. Spine cut off. Striations parallel to spine on body of scapula. Cut marks on neck. Body to left of spine is missing. This edge is ground and contains striations.
length: 7.5 cm, width: 4.2†cm.

*EeRI 7:2182*óPit fill (87-P-1). Bone wedge from unidentifiable, flat, large mammal bone. Edges are ground and surface contains longitudinal striations.
length: 7.9 cm, width: 1.9†cm.

*EeRI 7:5240*óPit fill (87-P-25, level 1). Deer scapula. Head and neck broken off. Spine gone. Striations parallel to spine. Dorsal end of spine edge beveled to rounded edge.
length: 18.6 cm, width: 10.0†cm.

**EeRI 7:2170*óPit fill (87-P-22). Antler ìbillet.î Very friable and falling apart due to longitudinal cracking. The base of the antler fragment, which includes the burr, appears to have been ground; the other end is broken.
length: 10.5 cm, width: 2.8†cm at base.

*EeRI 7:2171*óPit fill (87-P-9). Polished, striated, flat bone fragment.
length: 2.6 cm., width: 2.3†cm.

**EeRI 7:2172*óPit fill (87-P-4). Bird bone whistle. Mottled dark brown on yellowish bone, polished. The edges of one end are rounded, the other end is broken at a large air hole in the top of the whistle.

length: 7.7 cm, width: 1.2†mm.

**EeRl 7:2173*Pit fill (87-P-4). Flat, large mammal bone tool. One end is about 1.9†cm. wide and is blunted straight across; the other end is pointed and about 0.5†cm. wide.
length: 7.6†cm.

**EeRl 7:2174*Pit fill (87-P-6). Worked antler fragment. Tip shows signs of working, perhaps it was used as a flaker. The other end is cut straight across and the base has been grooved into an indented, smooth surface perhaps to fit into a handle. The antler is in good condition.
length: 12.5 cm, width: 2.9†cm at base

**EeRl 7:2177*Pit fill (87-P-8). Worked antler fragment similar to EeRl 7:2174. Tip is possibly worked, although the condition of the antler makes it difficult to tell. The other end is cut straight across. The antler is friable, with longitudinal cracking.

*EeRl 7:5241*Sq. WW, Ssq. 4, pit fill (89-P-3, level 1). Deer scapula. Head and neck present. Spine and body dorsal to spine broken off. Broken or cut edge of body beveled to form rounded edge. Artifact long and narrow.
length: 15.7 cm, width: 3.1†cm.

**EeRl 7:5227*Sq. RR, Ssq. 9, pit fill (87-P-25, level 2). Bone point or needle.
length: 3.0 cm, width: 0.2†cm.

**EeRl 7:5233*Sq. NN, pit fill (89-P-5, level 1). Bone awl.
length: 8.4 cm, width: 0.8†cm.

**EeRl 7:5238*Pit fill (87-P-25, level 1). Deer metapodial awl. Split and point made at proximal end. Very similar to EeRl 7:5245.
length: 7.5 cm, width: 2.2†cm.

**EeRl 7:2167*Sq. K, rim spoil. Pointed, polished bone fragment, probably of an awl.
length: 2.1 cm, width: 0.6†cm.

**EeRl 7:2194*Sq.M, rim spoil. Bone bead. Burned. Few incised lines on one side.
length: 1.5†cm, thickness: 0.6†cm.

*EeRl 7:2195*Sq. L, rim spoil. Flat bone fragment with perforation.
length: 2.0 cm, width: 0.9†cm.

**EeRl 7:5229*6Sq. O, Ssq. 4, rim spoil. Bone bead.
diameter: 0.8†cm, thickness: 0.2†cm.

**EeRl 7:2200*6Sq. O, Ssq. 11, pit under rim spoil (see Vol. II, Chap. 13, Fig. 2). Worked moose antler. Split horizontally and scooped out. Inner surface exhibits wide, shallow chop marks, probably made with an adze. The edges are ground and bevelled.
length: 19.9 cm, width: 8.9†cm, thickness: 0.7†cm.

**EeRl 7:5232*6Sq. PP, Ssq. 4, filtered collapse. Polished bone fragment.
length: 2.5 cm, width: 0.9†cm.

**EeRl 7:1970*6Sq. GG, roof bottom (rim?). Engraved fragment of large mammal long bone. Burned. An eye-like figure incised on it and it is broken near the figure.
length: 3.9 cm, width: 1.7†cm.

**EeRl 7:1973*6Sq. FF, roof (rim?) (See Chap. 3, this Volume). Deer scapula. Only the portion of the blade near the spine has been preserved. The spine is broken off at its base. Longitudinal striations, parallel to the spine are present on either side of the spine.
length: 8 cm, width: 3.5†cm.

**EeRl 7:1974*6Sq. II, roof (rim?) (See Chap. 3, this Volume). Deer scapula. Highly weathered and root-etched left scapula. Glenoid and dorsal ends have been chewed by carnivores. Most of the spine remains, the outer end of the spine has been broken, apparently after deposition.
length: 11†cm.

*EeRl 7:1976*6Sq. S, roof. ìAwl-likeî object with rounded tip. The other end is broken. Triangular cross-section.
length: 2.6 cm, width: 0.7†cm.

*EeRl 7:1977*6Sq. CC, roof (rim?). Three polished and burned long bone fragments.

**EeRl 7:1978*6Sq. CC, roof (rim?). Ground and polished long bone fragment. The fragment is burned and is triangular in cross-section. One end has been ground to a blunt, square shape, the other end is broken.
length: 4.2 cm, width: 0.8†cm.

**EeRl 7:1980*—Sq. GG, Ssq. 5, roof surface (rim?). Fragment of an incised, long, flat object, broken off at both ends.
length: 1.3 cm, width: 1.8 cm.

**EeRl 7:1981*—Sq. II, Ssq. 8, roof surface. Bone awl.
length: 4 cm, width 1 cm.

EeRl 7:2178—Sq. H, Ssq. 16, roof. Burned bone awl. Made from an unidentifiable large mammal bone.
length: 6.0 cm, width: 0.7 cm.

**EeRl 7:2191*—Sq. W, Ssq. 1, roof surface. Burned fragment of bone awl. Made from an unidentifiable large mammal bone.
length: 12.5 cm, width: 0.7 cm.

**EeRl 7:2192 and EeRl 7:2193*—Sq. H, Ssq. 15, roof surface. Flat, charred bone fragments with an engraved, dotted line down their centers.

EeRl 7:2197—Sq. Z, Ssq. 5, roof. Burned, flat polished bone fragment with three incised parallel lines.
length: 1.8 cm, width: 0.5 cm.

EeRl 7:5247—Sq. RR, Ssq. 7, roof bottom. Polished bone fragment.
length: 4.1 cm, width: 0.7 cm.

**EeRl 7:5231*—Sq. KK, Ssq. 15, roof bottom. Perforated and decorated bone fragment. Fragment has 3 holes drilled in a row (broken at 2 of the holes) and small beveled pattern near one edge.
length: 2.3 cm, width: 0.9 cm.

**EeRl 7:5243*—Sq. NN, Ssq. 6, roof fill. ìLî shaped bone awl.
length: 12.4 cm, width: 1.2 cm.

Housepit 8 (Fig. 4)

**EeRl 7:2011*—One bone awl was recovered from test trench excavations in 1986.

Housepit 9 (Fig. 6)

**EeRl 7:2176*—Sq. C, Ssq. 5, Stratum VI. Large antler? (from 1987)

*EeRl 7:2183*6Sq. B, level 8, floor. Fragment of bird bone ìtubeî artifact.
length: 1.7 cm, width: 0.5†cm.

**EeRl 7:2184*6 Pointed piece of deer bone.

**EeRl 7:5251*6Sq. H, Ssq. 5, pit fill (feature 6) (see Vol. II, Chap. 13, Fig. 1). Elk antler wedge. Antler is sectioned and tip is flattened and rounded.
length: 42 cm, width: 4.8†cm. (Photo 8 & 9)

**EeRl 7:5252*6Sq. C, Ssq. 9, probably Stratum VIII (see Vol. II, Chap. 13, Fig. 1). Deer antler handle. Hole drilled in center of antler tine, tip rounded.
length: 22.5 cm, width: 4.5†cm.

**EeRl 7:5253*6Sq. D, Ssq. 7, Stratum VIII. Worked antler (probably elk) fragment.
length: 18.9 cm, width: 5.1†cm.

**EeRl 7:5254*6Sq. C, Ssq. 14, Stratum X. Perforated flat bone fragment. Pendant?
length: 4.0 cm, width: 1.5†cm.

**EeRl 7:5255*6Sq. C, Ssq. 9, Stratum IV. Bird long bone ìpendant,î with hole drilled in one end of the bone.
length: 4.4 cm, width: 1.6†cm.

**EeRl 7:5256*6Sq. D, Ssq. 12, pit fill (feature 6, FU 1). Worked antler fragment.
length: 9.8 cm, width: 2.1†cm.

**EeRl 7:5257*6Sq. H, Ssq. 13, Stratum VIII. Nineteen charred, incised fragments.

**EeRl 7:5258*6Sq. D, Ssq. 14, Stratum X. Beaver incisor with worked tip.
length: 5.7 cm, width: 0.8†cm.

**EeRl 7:5259*6Sq. D, Ssq. 10, Stratum X. Piece of bird bone whistle or drinking tube.
length: 1.3 cm, width: 0.9†cm.

**EeRl 7:5260*6Sq. D, Ssq 9, Stratum VIII. Bird bone needle fragment.
length: 3.0 cm, width: 0.3†cm.

**EeRl 7:5261*6Sq. C, Ssq. 2, floor. Bone point or awl.
length: 4.6 cm, width: 0.8†cm.

**EeRl 7:5262*6Sq. G, Ssq. 12, floor. Large mammal bone flake with diagonal grooves or striations.
length: 5.1 cm, width: 2.7†cm.

*EeRl 7:5263*6Sq. G, Ssq. 15, roof fill. Tip of bone wedge.
length: 2.0 cm, width: 1.7†cm.

**EeRl 7:5264*6Sq. C, Ssq. 2, Stratum X. Fragment of bird bone bead.
length: 2.7 cm, width: 0.7†cm.

**EeRl 7:5265*6Sq. D, Ssq. 4, pit fill (feature 6, FU 2). Bird bone fragment, end of needle?
length: 1.4 cm, width: 0.2†cm.

*EeRl 7:5271*6Sq. I, Ssq. 1, Stratum VI. Shell bead.
diameter: 3†mm.

*EeRl 7:5273*6Sq. H, Ssq. 12, floor. Polished, flat long bone fragment, possibly bird.
length: 1.5 cm, width: 4†mm.

*EeRl 7: 5274*6Sq. F, Ssq. 5, floor. Large antler (elk) artifact; digging stick handle.
length: 20 cm, width: 6†cm at midline

**EeRl 7: 5275*6Sq. K, Ssq. 8, floor. Bone awl, complete and rounded at one end, pointed at the other.
length: 7.5 cm, width: 8†mm at rounded end

**EeRl 7: 5276*6Sq. F, Ssq. 1, floor. Bone awl, flattened at one end, pointed at the other.
length: 9 cm, width: 1†cm at flat end

**EeRl 7: 5277*6Sq. J, Ssq. 13, floor. Shell fragment, rounded, worn smooth edges.
length: 3.2 cm., width: 3.5†cm.

**EeRl 7: 5278*6Sq. L, Ssq. 16, roof. Hare (*Lepus* sp.) tight tibia shaft, incised and broken at each end to form long tube/bead.
length: 4.3 cm, width: 5†mm at widest end

**EeRl 7: 5279*6Sq. H, Ssq. 11, floor. Bird bone ìbead.î
length: 2 cm, width: 1.8†cm at widest end

*EeRl 7: 5284*6Sq. D, Ssq. 9, Stratum VIII. Shell bead.
diameter: 4mm

*EeRl 7: 5285*6Sq. H, Ssq. 12, floor. Bone bead, round and flat with hole in center.
diameter: 4†mm.

*EeRl 7: 5286*6Sq. I, Ssq. 1, Stratum VIII. Partial shell bead.

diameter: 4mm

EeRI 7: 5287—Sq. F, Ssq. 3, floor. Shell bead, round and flat with hole in center.
diameter: 5†mm.

EeRI 7: 5288—Sq. H, Ssq. 12. Dentalium fragment.

Housepit 12 (Fig. 7)

**EeRI 7:5210*—Sq. I, Ssq. 14, roof fill. Artiodactyl, metapodial awl. One end sharply pointed.
length: 10.2 cm, width: 1.1†cm.

EeRI 7:5213—Sq. G, Ssq. 9, roof fill. Hook-shaped, artiodactyl, metapodial awl.
length: 4.5 cm, width: 2.1†cm.

**EeRI 7:5211*—Sq. I, Ssq. 2, roof fill. Polished large mammal bone fragment.
length: 3.3 cm, width: 0.8†cm.

**EeRI 7:5218*—Sq. E, Ssq. 3, roof fill. Worked elk antler. The tip of an artidactyl antler tine is ground to a point.
length: 23.2 cm, width: 2.8†cm.

**EeRI 7;5215*—Sq. E, Ssq 10, floor. Worked artiodactyl metapodial. Metapodial is split and distal end is cut straight across and polished.
length: 14.4 cm, width: 1.8†cm.

**EeRI 7:5214*—Sq. G, Ssq. 5, floor. Antler wedge.
length: 5.6 cm, width: 3.1†cm.

**EeRI 7:5212*—Sq. I, Ssq. 3, floor. Bone needle. Flat, one end pointed, the other end with an incised hole in it (broken beyond the hole).
length: 7.2 cm, width: 0.7†cm.

EeRI 7:5209—Sq. J, Ssq. 10, floor. Polished bone fragment.
length: 5.5 cm, width: 1.0†cm.

Housepit 47 (Fig. 4)

**EeRI 7:1982*—Sq. B, Layer 7, 10ñ30†cm BS (see Chap. 3, this Volume). Right deer scapula. Spine has been broken or cut off at its base. Cut marks are present

on the neck. There is no evidence of utilization or of striations parallel to the spine.
length: 21†cm.

**EeRl 7:1983*6Sq. A, Stratum IX. Antler wedge. One end ground to a rounded we dge, the other edge is broken.
length: 3.5 cm, width: 1.9†cm.

*EeRl 7:1984*6Sq. B, Layer 9 (floor). Twenty-four, burned fragments of a bone artifact made from a large, flat mammal bone (probably a scapula). Some of the fragments indicate the edges of the object were ground.

*EeRl 7:1985*6Sq. B, Stratum VII. Calcined bone bead.

diameter: 4†mm.

Housepit 58 (Fig. 4)

**EeRl 7:2164*6Sq. A, roof fill. Four fragments of an incised, flat mammal bone.

Housepit 90

*EeRl 7:5289*6Sq. K, Ssq. 13, floor. Artiodactle metapodial awl; charred and broken in six pieces.
length: 14.5†cm.

*EeRl 7:5290*6Sq. I, Ssq. 3, floor dump area. Awl fragment.
length: 4.3†cm.

*EeRl 7:5291*6Sq. F, Ssq. 8, floor. Flat-tipped knife or awl fragment; charred.
length: 4.2†cm.

Housepit 101 (Fig. 8)

**EeRl 7:5223*6Sq. A, floor. Artiodactyl antler wedge.
length: 6.5 cm, width: 2.8†cm.

**EeRl 7:5222*6Sq. A, floor. Polished and abraded artiodactyl antler tine.
length: 5.1 cm, width: 1.2†cm.

*EeRl 7:5219*óSq. A, Ssq. 15, floor. Two shell valves from freshwater shellfish (*Margaritifera falcata*). One valve fragment has a hole in it. The other valve is broken at the hole location.

**EeRl 7:5221*óSq. A, fire-reddened area (Stratum 4.1, Level 1). Oval-shaped bone (from large mammal) with hole drilled in one end. Probably a bullroarer. (cf. Stewart, 1973, p. 145, #v9).
length: 9.8 cm, width: 2.8†cm.

*EeRl 7:5220*óSq. A, Ssq. 13, roof surface/fill interface. Mountain sheep (*Ovis canadensis*) horn core. Fragmentary. Tip abraded into wedge shape.
length: 17.5 cm, width: 8.5†cm.

Housepit 104 (Fig. 9)

**EeRl 7:5280*óSq. A, Ssq. 13, feature 2, pit fill. spatulate tool from deer metapodial.
length: 22.2 cm, width: 2.8†cm at top end, 0.5†cm at spatulate tip

**EeRl 7:5281*óSq. A, Ssq. 14, Feature 2, pit fill. Curved, incised bone fragment, possibly ivory, highly polished, zigzag marks on one side.
length: 2.5 cm, width: 1.2†cm at wide.

*EeRl 7:5293*óSq. G, Ssq. 16, VIII, Level 2. Deer metapodial (IV) awl.
length: 7.2 cm.

Housepit 105 (Fig. 10)

*EeRl 7:1986*óSq. A. Worked deer ulna ìawlî, recovered from 35ñ40†cm. BS. The unfused proximal epiphysis was recovered 15-20†cm. BS. Right ulna from a large, immature deer. About 1/3 of the distal end is missing and has been ground to a point.
length: 1.9 cm, width: 4.3†cm at proximal end

**EeRl 7:1987*óSq. C, 0-25†cm BS. A large bird bone ìbead.î A hollow tube with rounded edges at one end.
length: 3.4†cm diameter: 1.2†cm.

EeRl 7:1988* 6Sq. C, 0-25†cm BS. Bone needle, flat on one side. One end is very sharply pointed, the other end is broken.
length: 4.9 cm, width: 4†cm.

EeRl 7:1989* 6Sq. B, level 7. Round bone needle. Polished and pointed at one end, the other end is broken.
length: 3.3†cm, diameter: 1.5†mm.

EeRl 7:1990-1992 6Sq. C, Stratum X. Three flat, rectangular bone objects with holes drilled near their centers. The following 69 artifacts are similar. They range in size from about 1.1†cm ¥ 0.9†cm ¥ 0.2†cm to about 2.1†cm ¥ 1.4†cm. ¥ 0.2 cm. The majority were found lying cortex side down.

EeRl 7:1993-1995 6Sq. A, P1:1, level 9. Three of the above rectangular objects.

EeRl 7:2119-2161* 6Sq. A, P1:1, level 8. Sixty-four of the above rectangular objects.

EeRl 7:2162 6Sq. A, P1:1, level 7. One of the above rectangular objects.

EeRl 7:5270* 6Sq. C, P1:1, level 1. Large bone pointed object with perforation (netting needle?).
length: 12.4†cm, diameter: 3.6†cm.

Housepit 110

EeRl 7:5224 6Sq. B, trench, floor. Polished, incised, bone fragment. Parallel, incised lines perpendicular to length of fragment.
length: 2.1 cm, width: 0.6†cm.

Extra-Housepit Excavation 3

EeRl 7:7132 6Sq. A, level 4. Shell bead.

diameter: 8†mm, thickness: 1†mm.

Extra-Housepit Excavation 8 (Fig. 11)

EeRl 7:5269* 6cache pit, level 2. Perforated shell fragment. Shell is too worn to determine species of shell or artifact function.
length: 6.8 cm, width: 3.2†cm.

Extra-Housepit Excavation 11 (Fig. 11)

**EeRl 7:2163*óSq. C, Stratum IV, 20-30†cm BS. Artiodactyl metapodial wedge. Proximal end ground to a wedge, distal end broken.
length: 8.5 cm, width: 1.5†cm.

Extra-Housepit Excavation 12

*EeRl 7:2165*óSq. C, 10ñ20†cm BS. Six calcined fragments of an awl-like tool.

*EeRl 7:2166*óSq. B, 20ñ30†cm BS. Six calcined fragments of an awl-like tool.

Extra-Housepit Excavation 24

*EeRl 7:5292*óSq. A, Ssq. 5, surface, Level 1. Flat piece of shell with drill hole.
length: 1.2 cm, width: 1.0†cm.

Extra-Housepit Excavation 28

** No catalogue number or provenience. Item is missing, but appears to have been a decorated piece of antler or bone with a tab for slotting into another elem ent. Drawn from field note illustration.*

Dentalia At Keatley Creek (Fig. 5)

*HP†7*ó*EeRl 7:5248 Sq. NN, Ssq. 14, rim slump, level 2.

EeRl 7:5249 Sq. MM, Ssq. 9 and 13, pit fill (89-36A, level 3, FU2A).

EeRl 7:5250 Sq. RR, Ssq. 13, pit fill (87-P-25, FU2, level 1.

*HP†9*óEeRl 7:5266 Sq. H, Ssq. 16, Stratum VI (final floor).

EeRl 7:5267 Sq. D, Ssq. 11, Stratum VIII (2nd floor) (three fragments).

*EeRl 7:5272 Sq. K, Ssq. 8, Stratum VIII (2nd floor).

EeRl 7:5283 Sq. I, Ssq. 9, Stratum VIII (2nd floor).

EeRl 7:5288 Sq. H, Ssq. 12, Stratum VIII (2nd floor).

*HP†109*6EeRl 7:5225 Trench B, stratum VI, level 1.

HP 7 Scapulae

See Chapter 3, this Volume.

*EeRl 7:5242*6Sq. QQ, Ssq. 13, floor. Deer scapula. Head and neck and most of body, or blade, gone. No signs of working or use visible to the naked eye.
length: 16.5 cm, width: 4.4†cm.

*EeRl 7:1971*6Pit fill (88-P-5). Right deer scapula. Dorsal section only is remaining, and is broken below the spine. It is weathered with longitudinal cracking.
length: 13.7†cm.

*EeRl 7:1972*6Pit fill (88-P-3). Left deer scapula. Spine broken off at its base. The dorsal end is broken. No evidence of utilization or longitudinal striations.
length: 16†cm.

*EeRl 7:1975*6Pit fill (88-P-4). Left deer scapula. Almost complete. Cut marks present near glenoid cavity. The spine is broken off at its base. No evidence of utilization or longitudinal striations.
length: 23.3†cm.

*EeRl 7:2179*6Pit fill (87-P-1). Small artiodactyl scapula (sheep/goat?). Spine cut or broken off. Head, neck and blade to left of spine are present. Cut edge is bevelled.
length: 18.0 cm, width: 3.8†cm.

*EeRl 7:2180*6Pit fill (87-P-1). Deer left scapula. Only part of the body, or blade remains; neck and head broken off. Spine cut or broken off. Broken edge to the left of the spine has been ground and longitudinal striations parallel to the spine occur between the spine and left edge.
length: 16.0 cm, width: 5.6†cm.

*EeRl 7:2181*6Pit fill (87-P-1). Deer right scapula. Head and neck present. Spine cut off. Striations parallel to spine on blade of scapula. Cut marks on neck. Blade to left of spine is missing. This edge is ground and contains striations.
length: 7.5 cm, width: 4.2†cm.

*EeRl 7:5240*ó Pit fill (87-P-25, level 1). Deer scapula. Head and neck broken off. Spine gone. Striations parallel to spine. Dorsal end of spine edge beveled to rounded edge.
length: 18.6 cm, width: 10.0†cm.

*EeRl 7:5241*ó Sq. WW, Ssq. 4, pit fill (89-P-3, level 1). Deer scapula. Head and neck present. Spine and body dorsal to spine broken off. Broken or cut edge of body beveled to form rounded edge. Artifact long and narrow.
length: 15.7 cm, width: 3.1†cm.

*EeRl 7:1973*ó Sq. FF, roof. Deer scapula. Only the portion of the blade near the spine has been preserved. The spine is broken off at its base. Longitudinal striations, parallel to the spine are present on either side of the spine.
length: 8 cm, width: 3.5†cm.

*EeRl 7:1974*ó Sq. II, roof. Deer scapula. Highly weathered and root-etched left scapula. Glenoid and dorsal ends have been chewed by carnivores. Most of the spine remains, the outer end of the spine has been broken, apparently after deposition.
length: 11†cm.

HP 47 Scapula

*EeRl 7:1982*ó Sq. B, Layer 7, 10ñ30†cm BS. Right deer scapula. Head and neck present. Spine has been broken or cut off at its base. Cut marks are present on the neck. There is no evidence of utilization or of striations parallel to the spine.
length: 21†cm.

Table 1: Bone Artifacts From Keatley Creek.

Artifact	1	3	4	6	7	8	9	12	47	58	90	101	104	105	109	110
Antler, worked	1	1			3		6	1				1				
Antler, billet					1											
Awl	2	2	2	1	17	1		3			3		1	1		
Bead: bone/shell					2		8		1					1		
Blanket pin					1											
Bracelet: shell					1											
Button														72		
Dentalium					3		5								1	
Drinking tube							2									
Handle: antler							2									
Horn, worked												1				
Needle/point					3		2	1						3		
Pendant: bone							1					1				
Pendant: tooth					1											
Point		2														
Scapula,worked					11				1							
Shell		1					1					2				
Wedge, antler		2					1	1	1			1				
Wedge, bone					3		1									
Whistle					1											
Incised, polished, or perforated fragments		8	1	1	17		4	2	1	1			1			1

Photographs

Figures

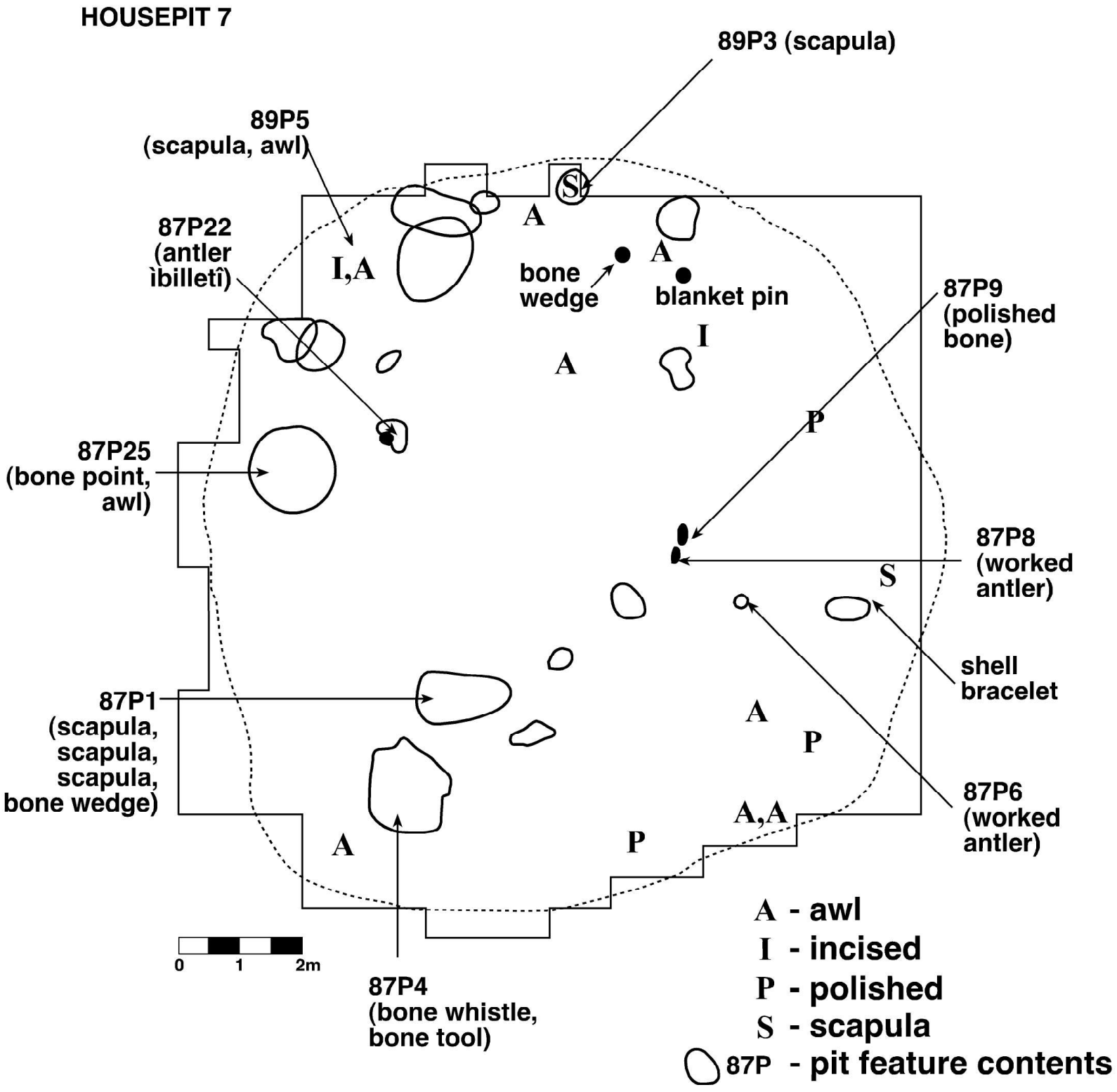


Figure 1. The distribution of Bone artifact types on the floor of HP 7

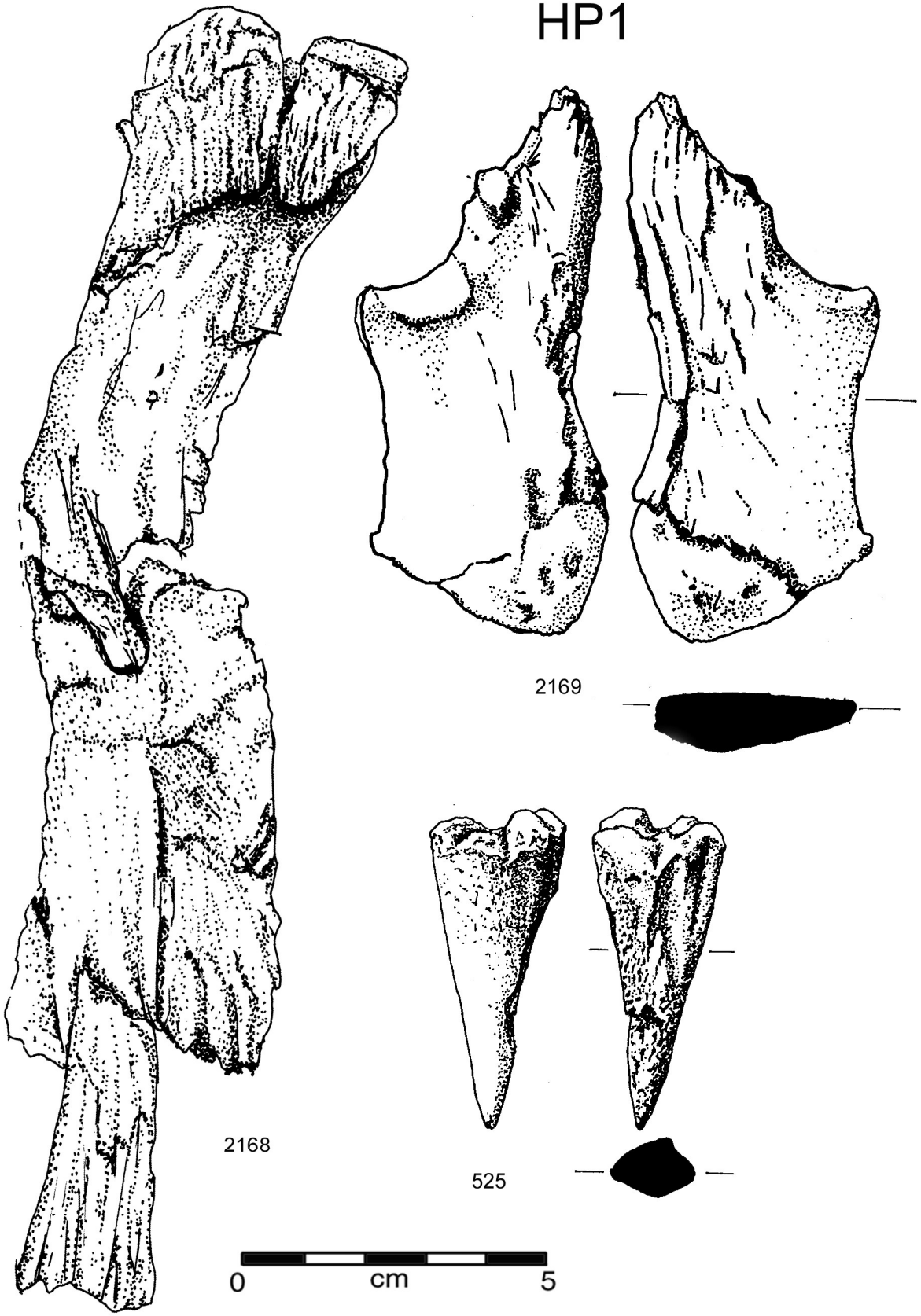


Figure 2. Housepit 1 Bone Artifacts

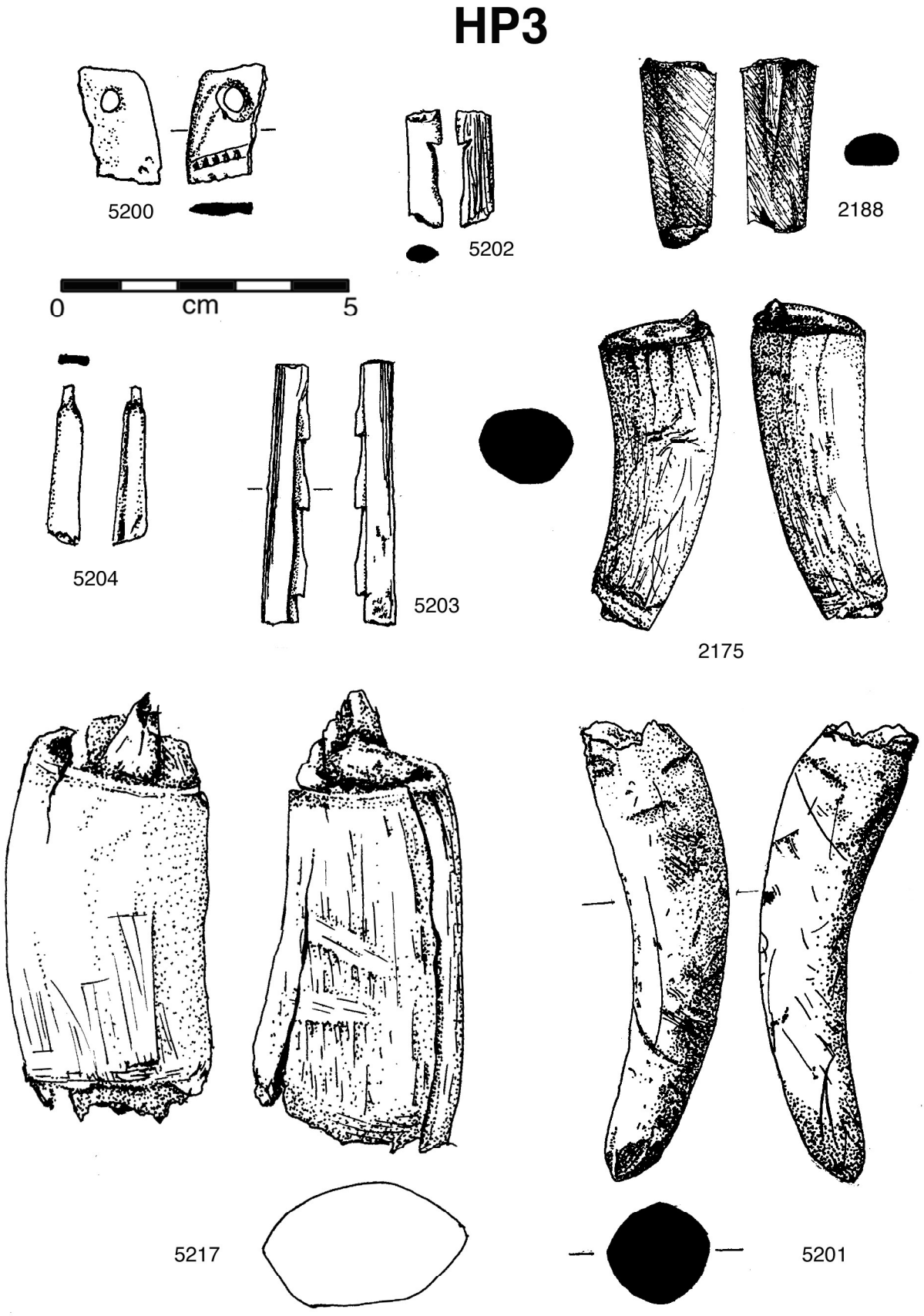
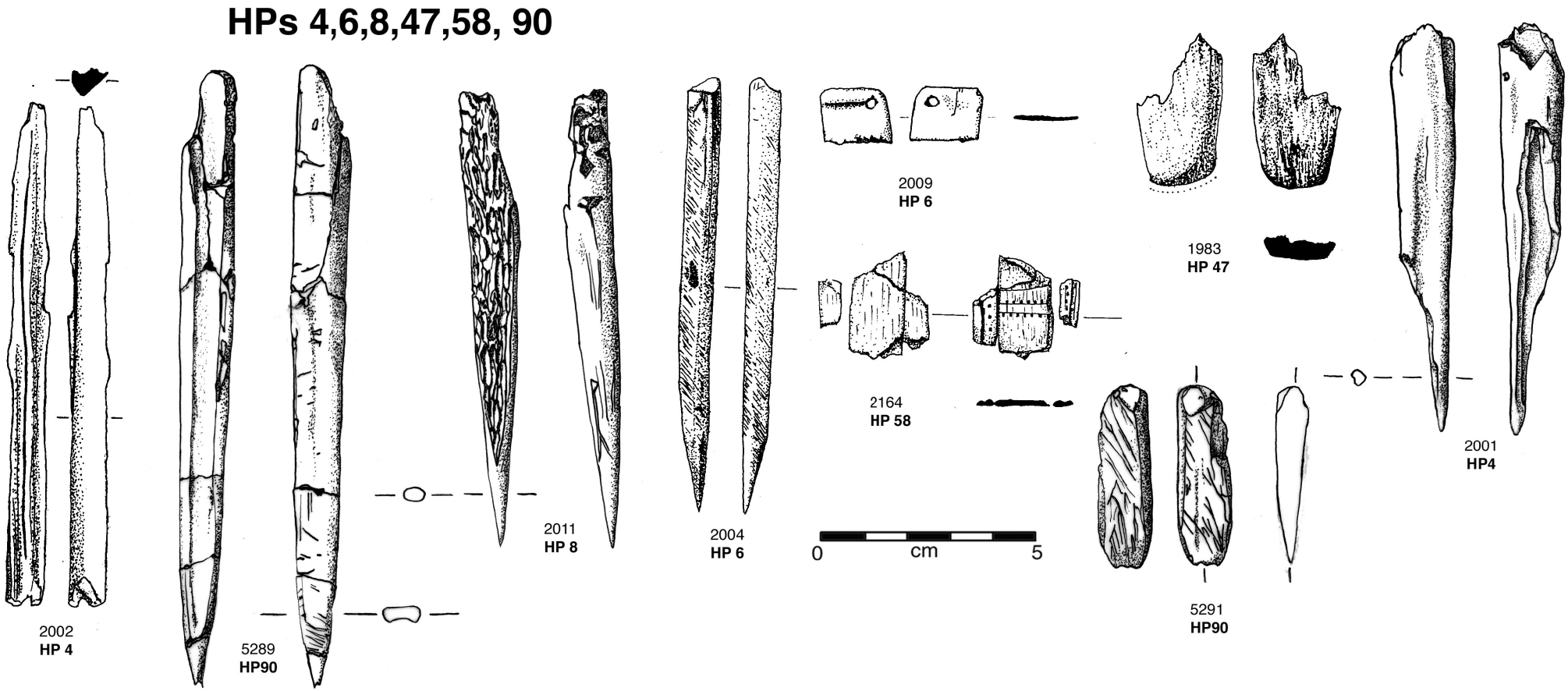


Figure 3. Housepit 3 Bone Artifacts

Figure 4. HP 4, HP 6, HP 8, HP 47, HP 58 Bone Artifacts



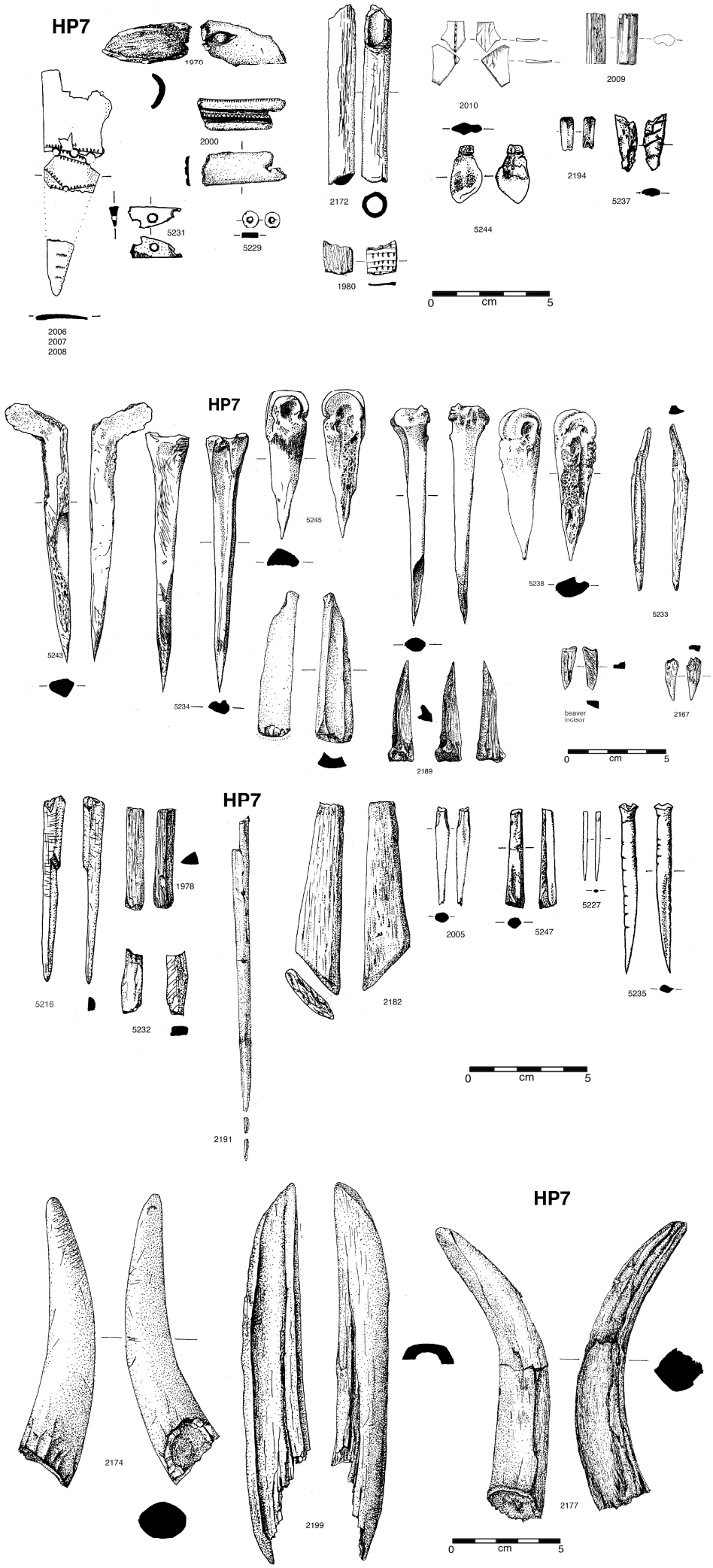
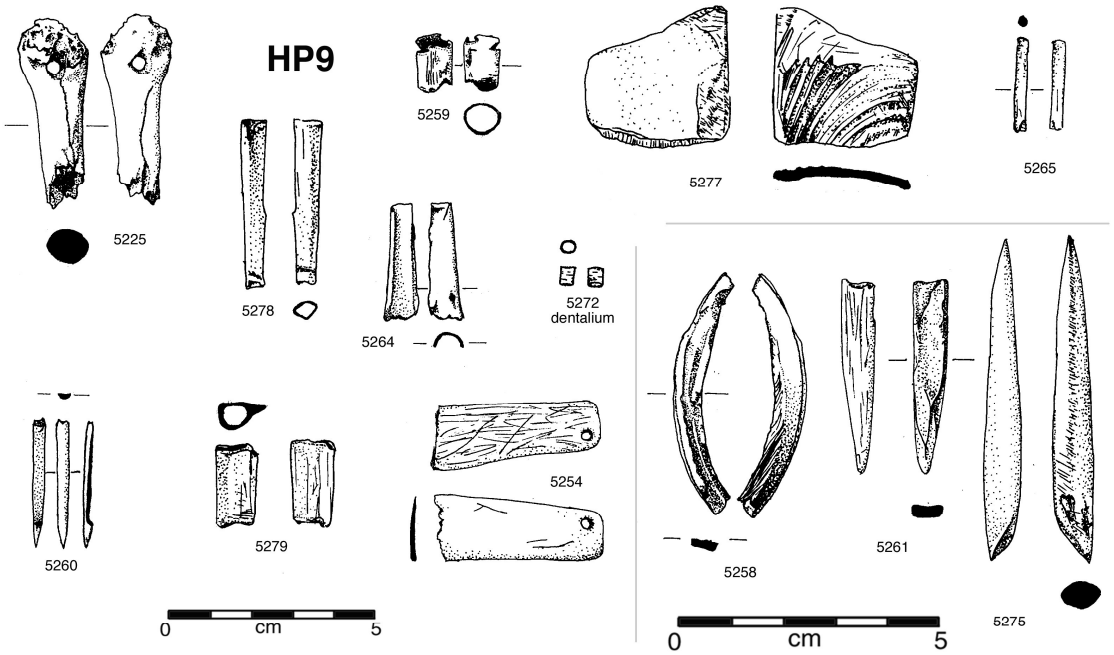
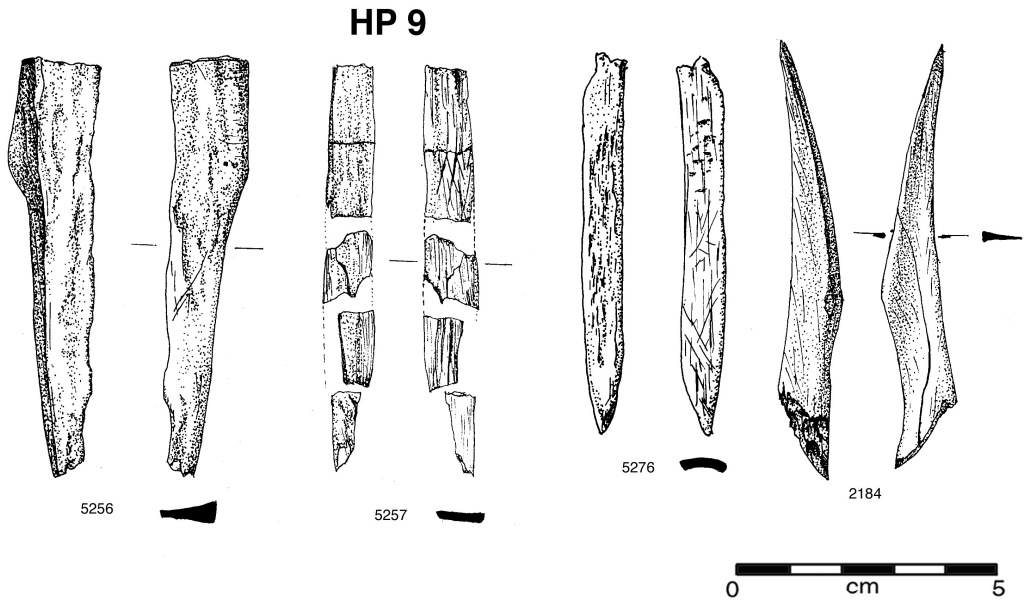


Figure 5. Housepit 7 Bone Artifacts, Dentalia Keatly Creek





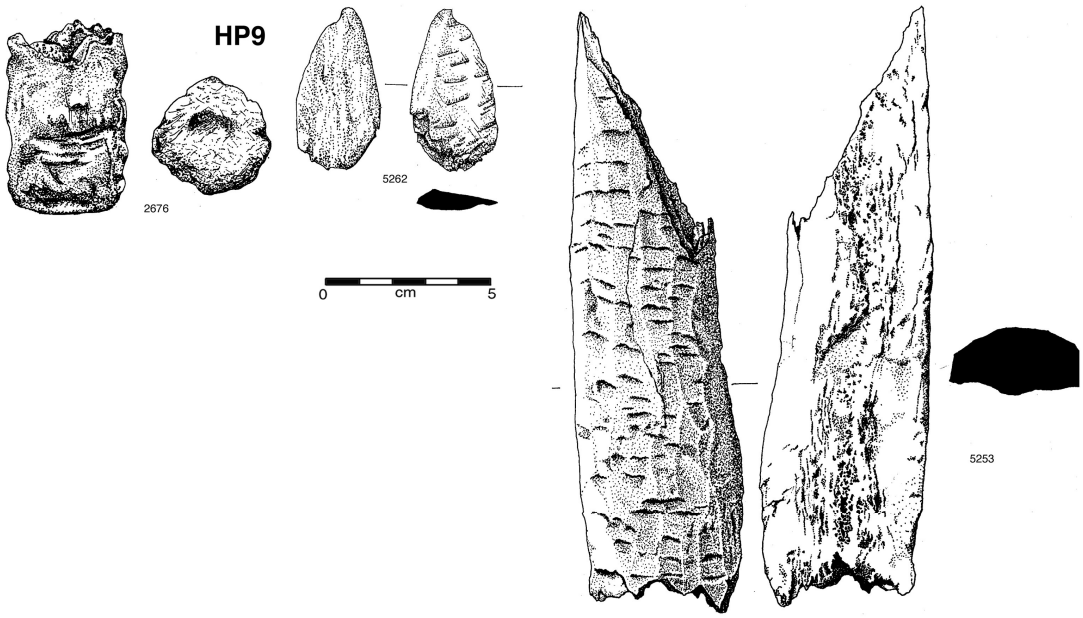


Figure 6. Housepit 9 Bone Artifacts

Figure 7. Housepit 12 Bone Artifacts

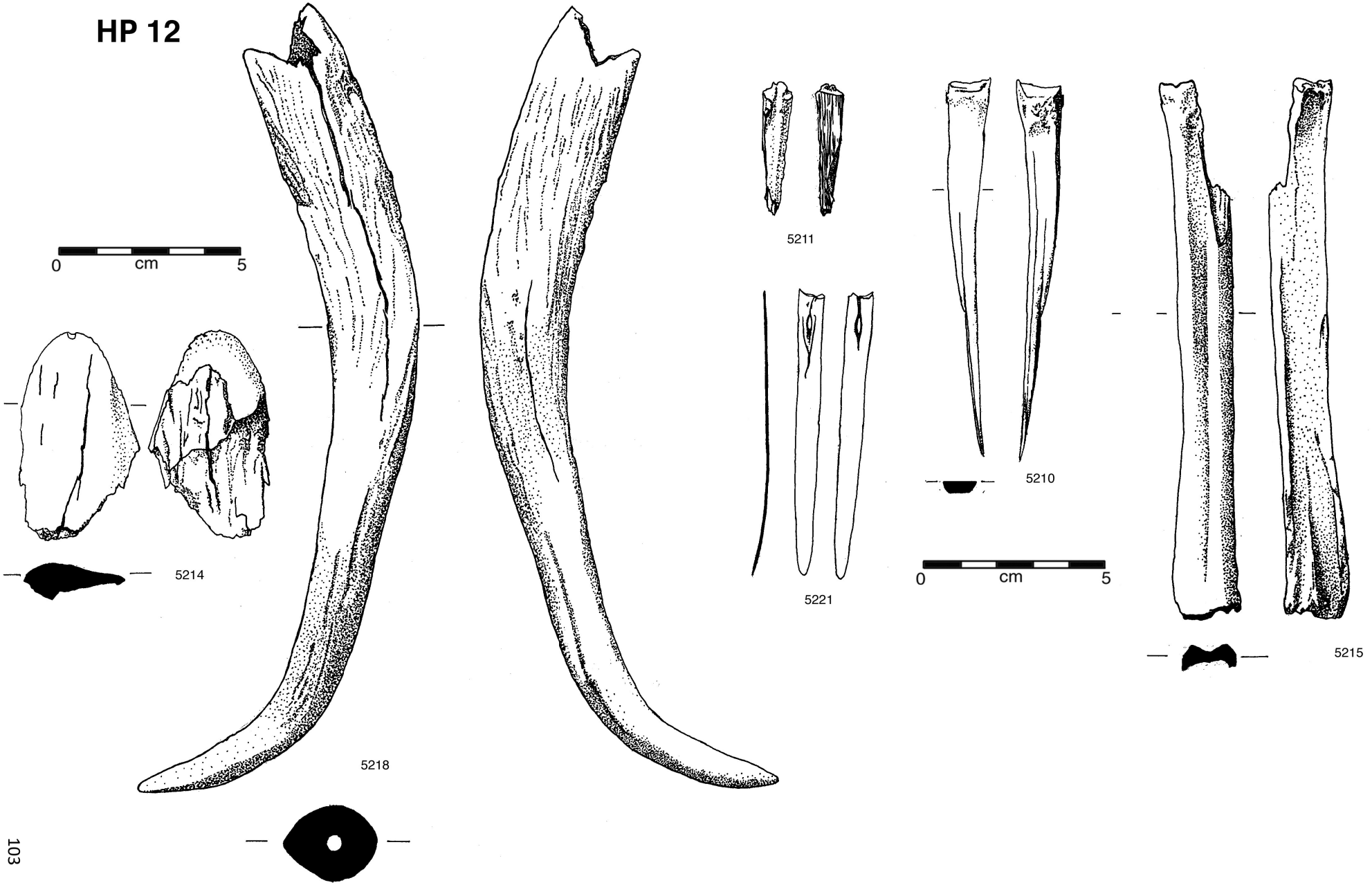


Figure 8. Housepit 101 Bone Artifacts

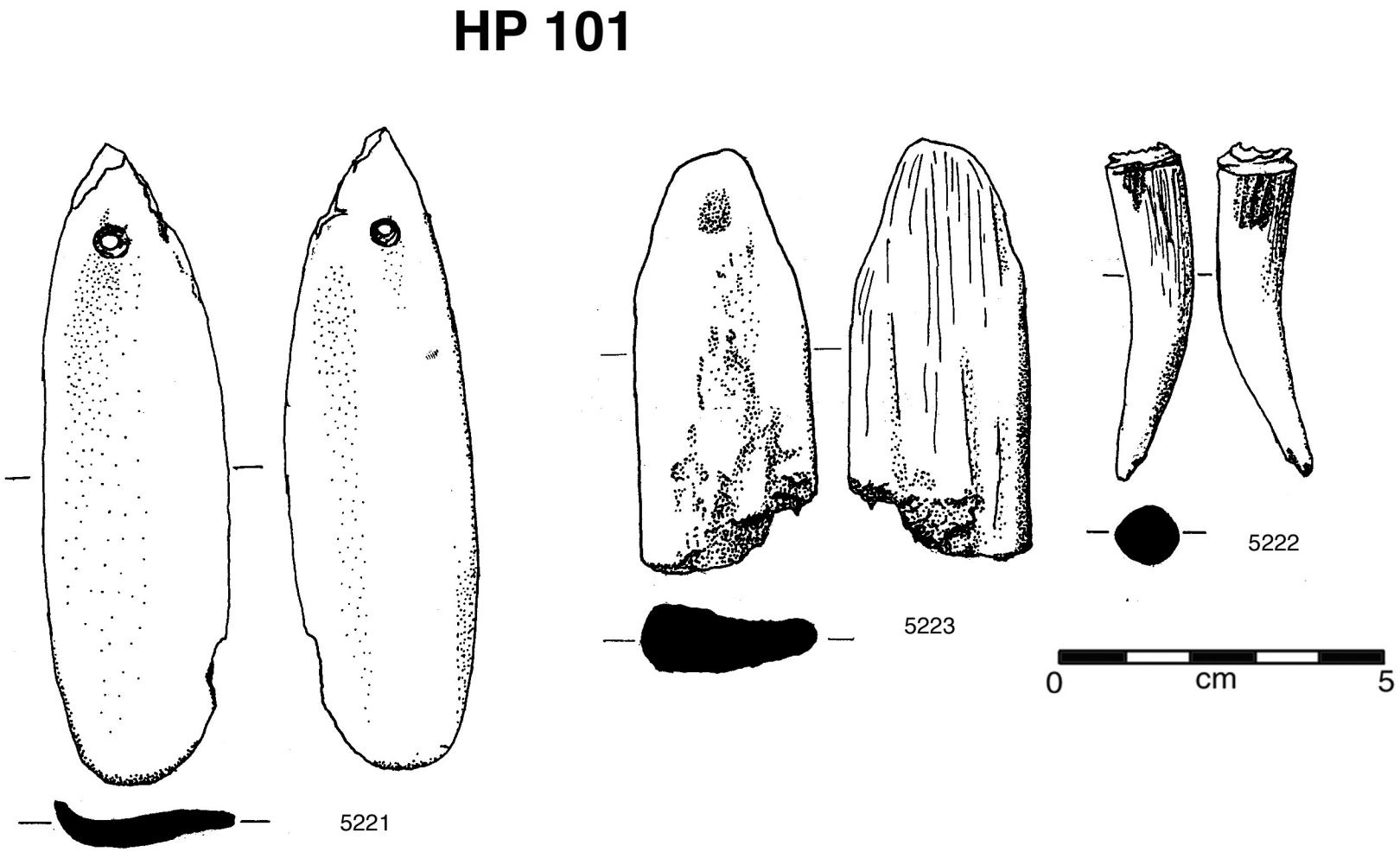


Figure 9. Housepit 104 Bone Artifacts

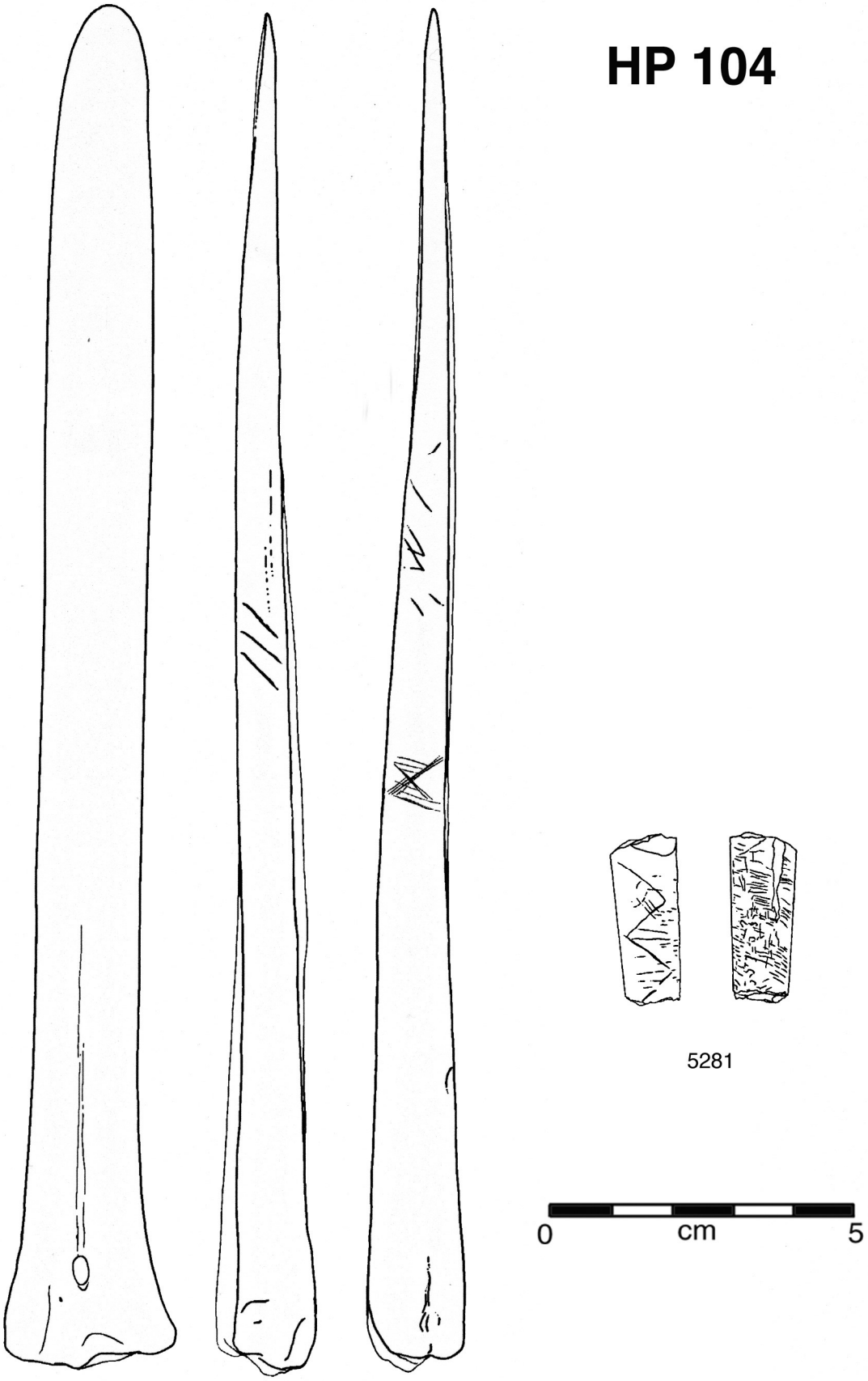


Figure 10. Housepit 104 Bone Artifacts

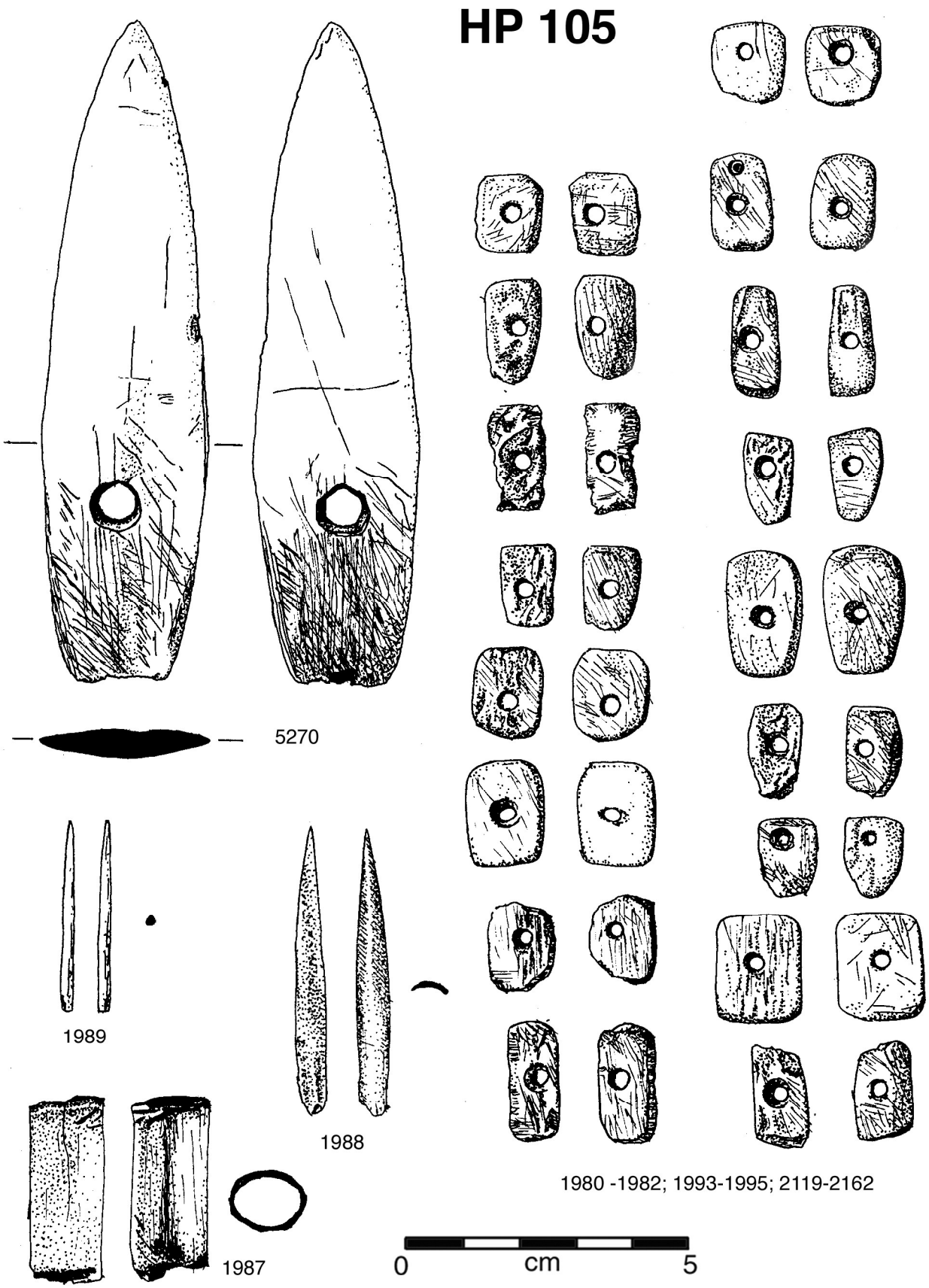


Figure 11. Extra-HP 8, Extra-HP 11 Bone Artifacts

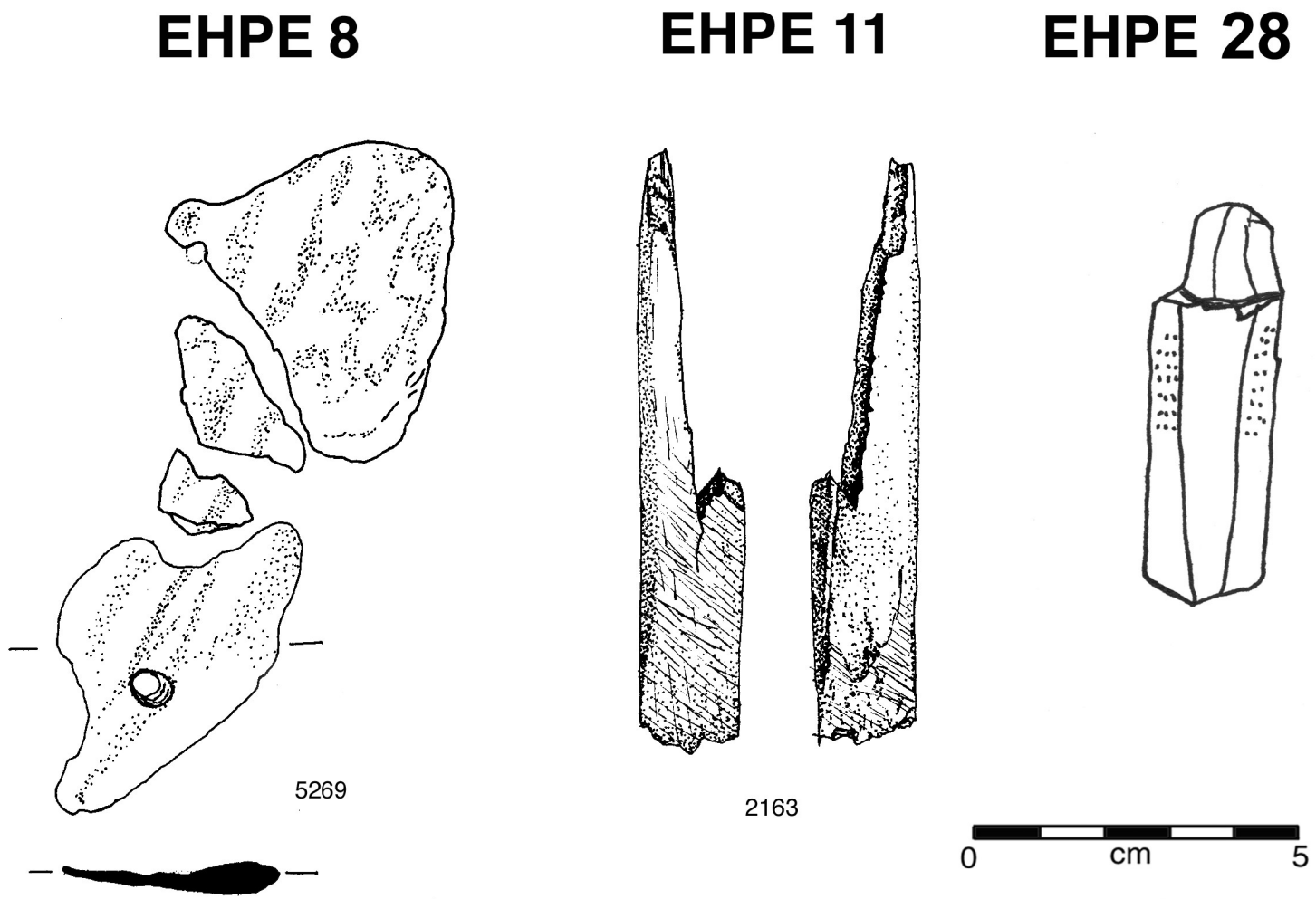


Photo 1. Items 1970, 2000, 2006, 2007, 2008.

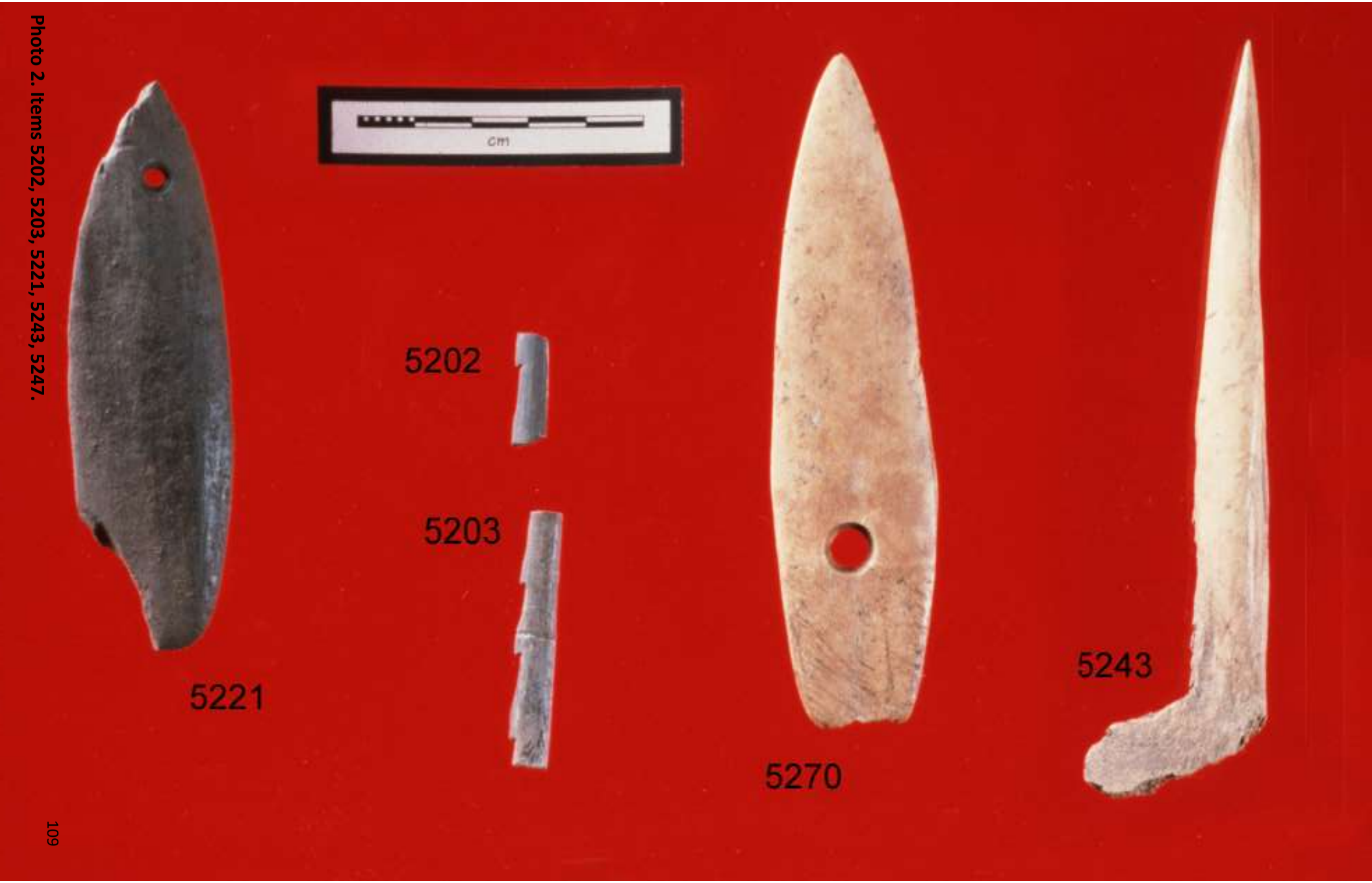


Photo 2. Items 5202, 5203, 5221, 5243, 5247.

Photo 3. Items 1980 - 1982, 1993 - 1995, 2119 - 2162.

Photo 4. Rim Spoil.

Photo 5. Items 5251, 5252, 5253.

Photo 6. Antler "billet".

Photo 7. Moose Antler.

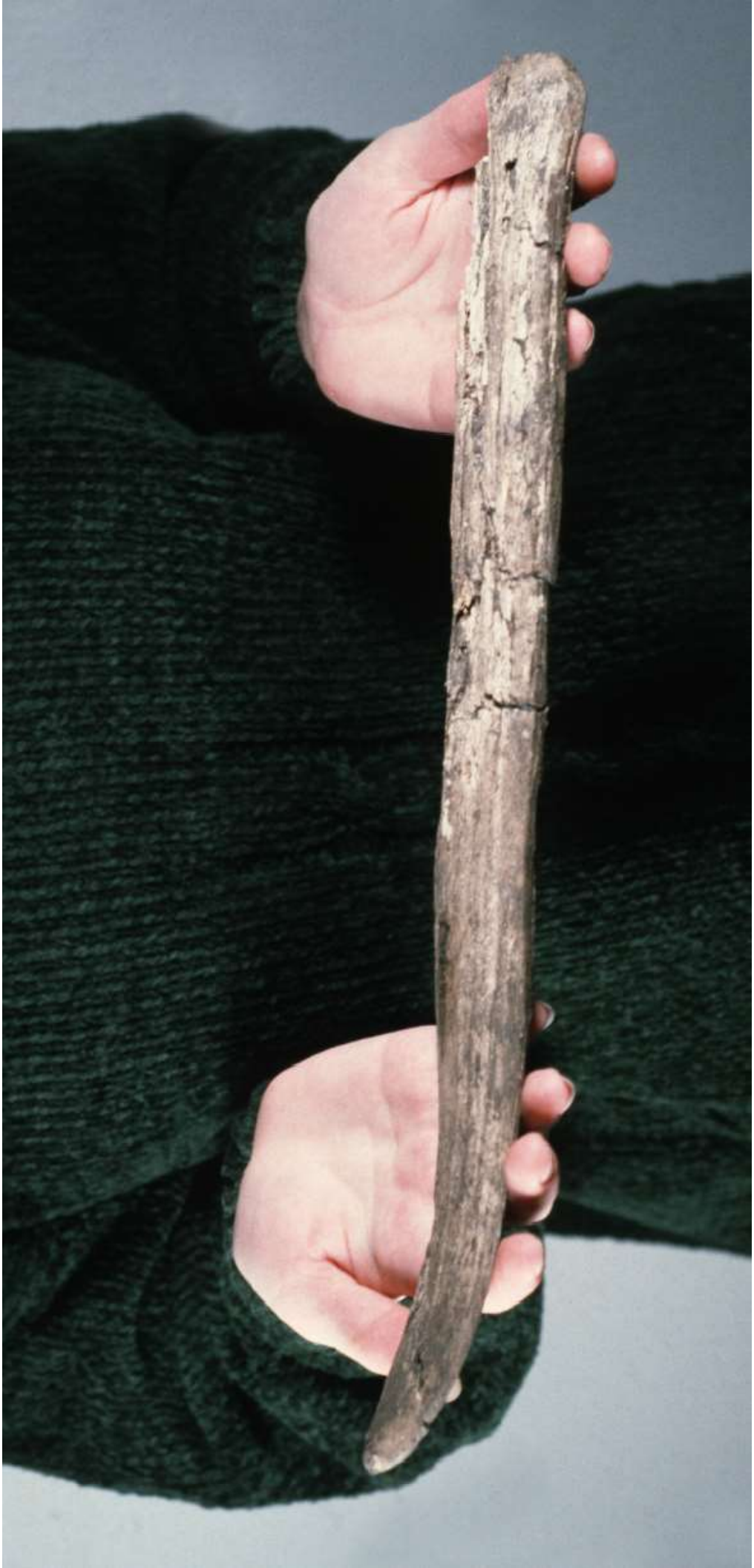


Photo 8. Antler.

Photo 9. Antler.

The Keatley Creek Deer Scapulae: Tool Manufacture and Use-Wear Analysis

Carolyn Burr

Introduction

Nine deer scapulae have been recovered from the Keatley Creek site. They are unusual in that most deer bones found at the site are highly fragmented (Vol. I, Chap. 10), whereas the scapulae are relatively complete although most have been specifically modified. In addition, they are of interest because some of them were recovered in association with specific archaeological features (Vol. I, Chap. 10, Appendix III). It is possible that these scapulae represent a particular activity at Keatley Creek. The problem addressed in this paper is: 1) to determine if the Keatley Creek scapulae show identifiable tool manufacturing/use-wear characteristics or other indications of tool use; and, if so 2) to determine the likely function of these tools. Markings on faunal remains are not always reliably identifiable as to cause. In this analysis, examination and investigation of artifact modifications and markings will be supplemented by studies of artifact shape, experimental analysis, and ethnographic and other archaeological evidence.

Of the identifiable scapulae recovered at Keatley Creek, all but one, which is from a smaller ungulate, are from the mule deer (Vol. I, Chap. 10).

Recovery Location of Scapulae

Three scapulae artifacts were recovered from floor pits within HP 7 (Table 1). These features are thought to have been interior storage and

refuse pits. They would originally have been used to store salmon, then at some later point have been filled in with garbage and soil containing bones.

Three scapulae were recovered from three other pit features in HP 7 (P88–3, P88–4, and P88–5). These are large, shallow, basin-shaped features which have been described as roof-beam foundations.

The other two scapulae from HP 7 were both found in roof deposits; one identified as from the roof surface and one only as "roof deposits."

The last of the nine scapulae was recovered from HP 47 (Table 1). This artifact is surmised to have been deposited at the housepit site, along with many other bones, "through a series of dumping events" when the housepit depression had been abandoned and was used as a refuse dump (Vol. II, Chap. 10.10).

Artifact Shape

The general shape of the artifacts is illustrated in **Figure 1**. There are two artifacts (EeRl 7:2179 and EeRl 7:2181) which have a distinct shape compared to the other seven. The scapula blade on only one side of the spine remains; this is the broader infraspinous fossa, and only part of it is present (**Figs. 1A and 1C**). The thin edge of this portion of the blade is very straight, and is 7 cm long on No. 2179 and 11 cm long on No. 2181. The neck, head, coracoid process, and glenoid fossa of each of the scapulae are also present. On the basis of these attributes, they have been categorized as Group I (Table 2).

Four of the HP 7 artifacts (Nos. 1972, 1982, 1975, 1974, **Figs. 2, 3, 4, and 5**) have shapes which are distinctly different from the others. The blade, or part of it, is present on both sides of the spine. Missing areas are more

prominent toward the proximal end of the blade. The neck, head, coracoid process, and glenoid fossa are present on the more complete artifacts (Nos. 1972, 1975, and 1982). Part of the neck on No. 1974 is present. These artifacts are categorized in Group II (Table 2).

There are two fragments where only part of the "body" of the scapula remains (No. 1973, **Fig. 6** and No. 2180, **Fig. 1B**).In both, the spine runs down the middle, with portions of the blade remaining on either side. They are very similar in general shape, although No. 1973 is much more weathered than No. 2180. These two fragments are categorized as Group III (Table 2).

The last fragment (No. 1971) is illustrated in **Fig. 7**. It is a portion of the infraspinous fossa.

Artifact Markings and Modifications

There are four categories of artifact markings and modifications that can be identified:

1) markings produced by natural causes;
2) markings which are human-made, but not tool-oriented;
3) modifications produced in tool manufacturing, and;
4) use-wear markings resulting from an artifact being used as a tool.

Natural Causes

Bones are subject to a number of processes as they lie on or in the ground. They are subject to the taphonomic processes of weathering, and plant and animal disturbances. However, the scapula artifacts from Keatley Creek, on the whole, do not seem to have been greatly affected by these processes. Most of the scapulae show relatively few weathering marks or

cracks. The three smallest fragments (Nos. 1971, 1973, and 1974) are the most weathered; No. 1974 is also root-etched.

There is no unequivocal evidence of animal disturbance of any of the scapulae. Binford (1981:69) describes scapulae which have been gnawed by animals as having three basic characteristics: (a) the acromion is chewed away; (b) the coracoid process and supraglenoid tubercle are usually chewed off, and; (c) the edges of the proximal border are chewed, sometimes to the extent of nearly removing the scapula blade and producing a denticulated blade edge. The blade edges of some of the Keatley Creek scapulae could be construed to be denticulated, and therefore chewed by animals, but there are no tooth punctures or gnawing marks on the neck, coracoid process, or glenoid fossa, except perhaps on artifact No. 1974. The condition of this scapula suggests that it might be more likely to have been chewed than the others, as it meets all three of Binford's criteria: the acromion process of the spine, the coracoid process, and the tubercle are missing, and the proximal border is partly denticulated (**Fig. 3**). There are also some indentations near the broken (chewed) edge of the neck, which are possible tooth marks.

Human Modifications, not Tool-Oriented

Human modifications, but not for the purpose of making tools, can include cooking, burning, breaking for marrow, and butchering. There is no evidence of cooking or burning of any of the scapulae. The scapulae are not marrow-filled and would not be broken for this reason. There are, however, as would be expected, some deep cuts which were most likely produced during butchering. These are found on the neck and blade edge of three of the scapulae (Nos. 1972, 1975, and 2181), locations where greater force

might have been used to cut the meat and tendons from the joint and to separate the scapula from the humerus. There are also longer, longitudinal striations on several of the scapulae blades. It is possible that some of these could have been caused by filleting of meat for drying (Binford, 1981:98)--compare **Figure 8 to Figures 2, 4, and 9**.

Manufacturing and Use-Wear Modifications and Markings

It can sometimes be difficult to assign specific markings and modifications to either tool manufacturing or tool use. However, they can be compared with results from experimental studies that were carried out.

The most likely manufacturing modification on these scapulae is the removal of the spines (Table 3). The fact that the spine is cut down to within about 1.0 cm from the base on all artifacts except Nos. 1974 and 2180, strongly supports the interpretation that it was purposefully cut and/or broken off. For the scapula to be useful as a tool, it would be desirable to remove the spine. Once the spine is removed, the neck and head form a natural handle and the artifact is comfortable to hold.

Deep cut marks where the base of the spine was cut through in the process of making the tools are also likely manufacturing marks on the Group I artifact (No. 2181, **Fig. 10**), (Table 3). It appears that the spine was probably first cut off, but the base of it still had to be cut through to make the tool. The other probable manufacturing attribute is grinding of the blade to form a beveled edge (Nos. 2180, and 2181). These two artifacts were previously assigned to Groups I and III on the basis of shape alone (Table 2).

Three of the artifacts (Nos. 2179, 2180, and 2181) also have small chips, or possible microflaking, along the sharpened blade edge (**Figs.1, 10, 11, and 12**) (Table 3). There are two possible causes of this: one from natural weathering and breakage, and one from use as a tool. These possibilities will be discussed further in the section on experimental work.

There are two other distinct types of markings on the scapulae: wide, straight striations, and; thinner, irregular striations (Table 3). The wide, straight striations are all found on the scapulae which were characterized by shape as Groups I and III (Table 2), while the irregular striations are all found on the scapulae characterized by shape as Group II. Some straight striations found on these Group II artifacts are generally thinner than those found on Group I and III artifacts.

Artifact Nos. 2181 and 2180 (**Figs. 10 and 12**) have straight striations running parallel to the blade edge near the thin edge and on the flat surface of the blade itself, up to the point where the scapula thickens at its anterior margin (No. 2181) or to the base of the spine (No. 2180). Artifacts No. 2180 (**Fig. 12**) and No. 1973 (**Fig. 6**) have similar straight striations in similar parts of the blade. It is not clear if the striations on these three artifacts are filleting, manufacturing, or use-wear markings, or some combination of all three.

Four artifacts (Nos. 1971, 1982, 1972, 1975—**Figs. 2, 4, 7, and 9**) have irregular striations. These are thinner and not as obvious as the straight striations of artifacts in Groups I and III, but they all run longitudinally from the broken distal edges mainly on the ventral side of the scapulae. Miller (1975:221–222) discusses the possibility that such striations, rather than being caused by the abrasive use of a tool, could be caused by dragging on

the ground. However, he maintains that "a much greater force [than dragging] is needed to produce scratches on fresh bone" for "it is extremely difficult to work and does not scratch easily."

The similarity of location, direction and type of striation supports the hypothesis that the striations were produced during use of the scapulae as a tool. The similar wear pattern of the blade, as mentioned in the discussion of artifact shape, also supports this hypothesis. These artifacts have therefore been placed in the same group as those categorized by shape to Group II (Table 2).

Polish and residues are two other attributes of tool use. There are some smooth, seemingly polished, areas on some of the artifacts (Nos. 1971, 1975, and 2181) in areas where the tool might have been held. However, the smoothness could be due to the natural surface of the bone in these areas. The main "residue," found on the Group II artifacts, is dirt, which is often embedded in the blade and perhaps is an indication of tool use. Group I and III artifacts do not have any visible residues. Root-etched artifact No. 1974 has plant fibers attached.

Experimental Use-Wear Analysis

By simply studying the artifacts it is not easy to discern if striations, cut marks, and wear patterns are caused by natural or butchering events, or by purposeful tool manufacturing and/or tool use-wear processes. By carrying out manufacturing and use-wear experiments, it was hoped that these processes could be more definitely differentiated.

Two deer (one White-tail, one Mule) shoulders with intact scapulae were obtained. The meat was removed from both scapulae with basalt

flakes and with a metal knife. Both tools worked well in removing the bulk of the meat, but the basalt was best for removing the meat close to the bone and for removing the periosteum. No butchering marks were made on the bone, since the meat was easily removed and great force was not necessary. The two scapulae were very close in size (11 x 19 cm and 13 x 20 cm) to some of the Keatley Creek artifacts.

Tool Manufacture

In order to remove unwanted portions of the scapula, a deep groove was made, using basalt flakes and a basalt graver, near the base of the spine, across the spine at the base of the neck, and along the length of the infraspinous fossa to the proximal end of the scapula. In the process of making this groove, other cuts parallel and at angles to the main groove were inadvertently made, since the stone tool did not always stay in the previously made cut. This produced cuts some of which were similar to some of those on artifact Nos. 2180 and 2181 **(Fig. 10**). These grooves, as well as the two deep cuts on No. 2179, exhibit special characteristics which appear to be caused by cutting with a stone flake. They have squared, even edges and ridges inside the groove.

The bone proved to be very tough and hard and it was not possible to cut through the spine or through the thicker part of the blade near the neck using only the stone tools. Nor would the bone break along the groove. It was therefore necessary to use a saw. In this way, a scapula tool similar to No. 2181 was obtained, as well as another useful tool from the other part of the blade (**Fig. 12**). The blades of these tools were sharpened a bit using a sandstone slab, although they were already thin and sharp.

Tool Use-Wear

Both fresh scapulae were used in experimental use-wear studies. The knife-like edges produced by cutting one scapula, as previously described, were used to cut fresh, frozen and cooked meat and fresh and frozen fish. They were also used to cut up broccoli, carrots, celery, potatoes and onions, and to cut off a small tree branch (approximately 1.0 cm diameter). They worked equally well in all cases, and could be compared in quality to a good Chinese carbon-steel cleaver. They did not seem to dull very quickly.

It was very easy to cut through all the meat samples by using a sawing motion. The natural structure of the bone seems to provide a finely serrated edge, which is not particularly sharp when the finger is rubbed along it, but which is very effective when a sawing motion is used. The vegetables, however, cut very nicely by simply pressing down on them.

The neck and head form an excellent handle, very comfortable to hold, with the head fitting nicely into the palm of the hand, and the forefinger pressing down on the top, flat, smooth edge of the scapula. Comfort was increased, and grip improved, by wrapping a thin piece of soft leather around the neck and head.

The other fresh scapula was modified only by removing the spine (again by sawing it off). It was then tested for efficiency as a shovel (or trowel) by digging in the garden with it. It proved to be very functional. A hole about 20 x 20 cm was easily dug, and the "corners" of the proximal end were found to be very good for digging into packed dirt and loosening it up, so that it could then be scooped out. The scapula also worked well to scrape dirt aside.

The scapula did not show signs of wear, even though the garden soil contained many small rocks, which were encountered during the digging process.

Some digging was also carried out in more gravelly, sandy soil and a few striations similar to those on artifact Nos. 1975 and 1982 were produced. The digging lasted for only a short time, but it would seem that the scapula is quite a tough, hard bone and one would be able to perform a great deal of digging before the tool was worn out. Perhaps, once the proximal edge is worn through, the rest of the blade, which is very thin, might wear down quite quickly. This could easily produce the wear/breakage pattern seen in artifact Nos. 1972, 1974, 1975, and 1982. Again, the neck and head made a comfortable handle, especially if wrapped with a thin piece of leather.

In performing these experiments, it was not possible to reproduce the straight striations found on the blades of artifact Nos. 2180 and 2181, except during the manufacturing process, when cutting the groove with the basalt flake produced striations similar in appearance and direction to those on Nos. 2180 and 2181. However, this does not seem to adequately explain all of the striations on the blades, which cover the surfaces up to the thicker edges or spine of the scapulae. Perhaps some were produced from filleting as previously described, and some from use-wear, but it is not clear what contact material would have caused such striations.

The same is true for the chips and microflakes removed from the blade edges of the Keatley Creek artifacts. They were not reproduced in the experiments. However, similar chips and microflakes are not found on any other edges of the scapulae, even other very thin edges, and this points to formation by tool use-wear.

Only artifact No. 1974 does not have several of the attributes of the others. It is most similar to the Group II artifacts, but the heavy weathering and root-etching, the presence of the spine, the missing acromion and coracoid process, and the possible tooth marks leaves its position open to question.

It becomes apparent at this point that there are two distinct types of scapula artifacts from Keatley Creek (Table 4). One type consists of artifact Nos. 2179, 2180, 2181, and 1973, which have been classified by shape into two groups (Table 2, Groups I and III). Shape, tool manufacture and use-wear studies, and experimental evidence indicate probable tool use as knives. However, there may be two types of knives (Table 4), although they may have been used in similar ways on similar materials.

The other major type of scapula consists of artifact Nos. 1971, 1972, 1975, and 1982, which were classified by shape into Group II (Table 2). This study indicates their probable use as shovels or trowels (Table 4).

Artifact No. 1974 is classified as "non-tool" for reasons previously discussed.

Ethnographic and Other Archaeological Evidence

There is ethnographic and archaeological evidence for scapulae used prehistorically as scrapers, knives, hoes, and possibly net gauges. Two kinds of scrapers from the Thompson River region in British Columbia are mentioned by Smith (1900:411, 420, Figs. 339, and 356). One is a skin-scraper made from a deer scapula, the other a sap-scraper. However, neither of them resembles any of the scapulae artifacts from Keatley Creek. Scrapers "made from the sides of the superior ends of bison scapulae" have been

found in the Plains of central South Dakota (Lehmer 1952b:333). Again, these appear to be quite different tools from the Keatley Creek artifacts.

Bone knives are mentioned ethnographically, but they are not always made from the scapula, and they are constructed and shaped differently from the Keatley Creek knives. Lehmer (1952b) found bone knives with hooked ends ("possibly for cutting squash") in South Dakota. These were cut from scapulae, but judging from the illustration, they were cut out from the very large bison scapula blade and the head was not needed as a handle.

Stewart (1977:155–56) found that useful knives could be made from a deer ulna bone. She refers to these as herring knives, but found that they were also good for cutting nettle-fiber string and cedar bark. The experimental knife made for this project was fairly good for filleting fish, but did not cut fish skin very well. Magne and Matson (1984:213, 224) reported several archaeological examples of modified scapulas from Eagle Lake (Chilcotin, B.C.) similar to those at Keatley Creek. They state that the function of these artifacts is unknown, but suggest that they were used in hide processing. This seems unlikely.

Scapula knives with scalloped edges made from bison scapulae have also been found in the southern Plains of the United States (Johnson 1982:152). These knives again are not made, or shaped, like the Keatley Creek knives. Serrated deer scapula knives were apparently used for cutting tule reeds in the Great Basin (Southworth-Kidder 1993) and some of the Keatley Creek scapulas might have been used for cutting tule reeds to make mats although they lack serrated edges.

A bone knife used by the Blackfoot Indians of the Plains had the grip wrapped with calf skin, making it more comfortable and providing a better

grip (Wissler 1975:32), much as was found with the experimental deer scapula knife made for this project.

Bone knives and bone flakes with sharp edges have been found in experimental work by Stanford et al. (1981) to be very satisfactory for slicing through either warm or frozen flesh, but worked best on the latter. Experimental bison butchering demonstrated that bone tools could work better than stone ones for some tasks. The edge was durable and the tools easily severed the neck and muscle attachments (Johnson 1985:217). Frison (1974:200–201) has proposed the use of frozen meat caches as a winter food supply on the northern Plains, and the use of bone tools to free an amount of frozen meat from the caches. The experiments done in this study show that the deer scapula knives cut frozen meat. However, it was probably not common for Keatley Creek provisions to be kept frozen.

Scapula hoes are also reported. They were found at the Fort Pierre site, central South Dakota, where they were made from bison scapulae, with the head removed during the Stanley Focus period, but left on during the Monroe Focus (Lehmer 1952b).

Use of deer scapulae as hoes is reported for the Mound Builders of the Mississippi Valley. These people are said to have "commonly fitted the shoulder blades of deer to wooden handles for use as hoes" (Young 1956:5). This would seem to support the idea that deer scapulae are quite strong, since these hoes would likely have been well-used in the agricultural communities of the Mound Builders.

Of special interest, is the report by Lehmer (1952a:317) of bison scapulae from an Oklahoma site with "the scapula spine . . . removed." Also of interest is his comment that "these pieces show excessive amounts of

wear, cutting edges often being well up toward the neck of the bone." Both the cutting off of the spine and the pattern of wear are typical of the Keatley Creek trowels.

Curwen (1926) describes remains of scapulae in Europe with spines removed, longitudinal striations, and which are very worn, suggesting use as shovels. He also gives a detailed description of the etymological evidence for "the wide-spread use of shoulder blades for digging." This, of course, does not apply to the native Indian situation in North America.

Finally, Larson (1995:10–26) suggests that a deer scapula with markings on one edge may have been used as a net gauge on the Washington Coast. This seems a plausible use, but could have been made more easily with wood. The markings are quite different from anything on the Keatley Creek scapulas, although the spinous process has been removed as at Keatley Creek.

Conclusion

This brief survey of ethnographic and archaeological literature supports the use of scapulae as tools by prehistoric peoples. The unique context of the Keatley Creek scapulae, recovered largely from particular features of the site, and their relative completeness, makes them especially interesting. The evidence obtained in this study of shape, manufacture/use-wear and other markings, and experimental evidence, supports the probability of manufacture and use of tools, specifically knives and trowels, made from ungulate scapulae by the aboriginal people of Keatley Creek.

References

Binford, L.R.

1981 *Bones: Ancient Men and Modern Myths*. Academic Press, New York.

Brown, C.L. and Gustafson, C.E.

1979 *A Key to Postcranial Skeletal Remains of Cattle/Bison, Elk and Horse*. Washington State University.

Curwen, E.C.

1926 On the Use of Scapulae as Shovels, *Sussex Archaeological Collections Relating to the History and Antiquities of the Country*, 67: 139–145.

Frison,G.

1974 *The Casper Site: A Hell Gap Bison Kill on the High Plains*. Academic Press, New York.

Johnson, E.

1982 Paleo-Indian Bone Expediency Tools: Lubbock Lake and Bonfire Shelter. *Canadian Journal of Anthropology*, 2(2): 145–157.

1985 Current Developments in Bone Technology, in: M.B. Schiffer (Ed.), *Advances in Archaeological Method and Theory*, Vol.8. Academic Press, New York.

Larson, Lynn

1995 Modified animal bone and antler. In L. Larson and D. Lewarch (Eds.), *The Archaeology of West Point, Seattle, Washington*, Vol. 1, Part 2, pp. 10–1 to 10–51. Larson Anthropological/Archaeological Services, Seattle, Washington.

Lehmer, D.J.

1952a The Turkey Bluff Focus of the Fulton Aspect. *American Antiquity*, 17:313–318.

1952b The Fort Pierre Branch, Central South Dakota, *American Antiquity*, 17:329–336.

Magne, M., and R. G. Matson

1984 *Athapaskan and Earlier Archaeology at Big Eagle Lake, British Columbia.* Archaeology Laboratory, University of British Columbia, Report to Social Sciences and Humanities Research Council of Canada.

Miller, G.J.

1975 A Study of Cuts, Grooves, and Other Marks on Recent and Fossil Bone: II. Weathering Cracks, Fractures, Splinters and Other Similar Natural Phenomena. In E. Swanson(Ed.), *Lithic Technology: Making and Using Stone Tools*, Mouton Publishers, The Hague.

Smith, H.I.

1900 Archaeology of the Thompson River Region, B.C*., Memoir of the American Museum of Natural History*, Vol. 1, part 6, AMS Press, New York.

Southworth-Kidder, Jan

1993 Building of the Kon Tule. *Bulletin of Primitive Technology* 1(6): 36–9.

Stanford, D. et al.,

1981 The Ginsberg Experiment: Modern and Pre-historic Evidence of a Bone-Flaking Technology, *Science*, 212:438–440.

Stewart, H.

1977 *Indian Fishing*. J.J. Douglas, Vancouver.

Wissler, C.

1975 *Material Culture of the Blackfoot Indians*, Anthropological Papers of the American Museum of Natural History, Vol. 5, part 1, reprint of 1910 edition, AMS Press, New York.

Young, S.P.

1956 The Deer, Indians and American Pioneers. In W.P. Taylor (Ed.), *The Deer of North America.* Stackpole Co., Pennsylvania .

Figures

Figure 1: Scapulae artifacts 2179, 2180, 2181: dorsal view.

Figure 2: Artifact 1972.

Figure 3: Artifact 1974: root-etching; weathering.

Figure 4: Artifact 1975.

Figure 5: Artifact 1982.

Figure 6: Artifact 1973.

Figure 7: Artifact 1971.

Figure 8: Filleting marks on scapula (re-drawn from Binford, 1981).

Figure 9: Artifact 1975 and 1982.

Figure 10: Artifact 2181: A: ventral; B: dorsal.

Figure 11: Artifact 2179: A: dorsal; B: ventral.

Figure 12: Artifact 2180. Note that the spine was not removed and thus could be used as a point for pressing down with the index finger. On the ventral side there was also a depression suitable for thumb placement.

Figure 13: Side view of experimental mule deer scapula with spine, and of artifact scapula with spine cut down; (s = spine).

Photographs

Photo 1: Item 2180.

Table 1. Artifact Recovery Locations

HP*	#Scapulae	Location	I.D. #
7	3	floor pits	EeRl 7: 2179/2180/2181
7	3	roof-beam pits	EeRl 7: 1971/1972/1975
7	1	roof surface	EeRl 7: 1974
7	1	roof deposits	EeRl 7: 1973
47	1	refuse dump	EeRl 7: 1982

Table 2: Categorization of Artifacts by Shape

HP*	#Scapulae	Group	I.D. #
7	2	I	2179,2181
7,47	5	II	1972/74/75/82/(71)
7	2	III	2180,1973

Table 3: Categorization of Artifacts by Manufacturing/Use-Wear

Shape group	I	II	III
Spine removal	2179,2181	1971/72/75/82	1973
Deep cuts thru spine	2179,2181		
Blade ground	2181		2180
Chips/flakes	2179,2181		2180
Straight striations	2179,2181		1973,2180
Irregular striations		1971/72/75/82	
Similar wear pattern		1971/72/74/75/82	

Table 4: Artifact Types

Type	Artifact Number
Knives: blade cut away, remains on one side of spine	2179,2181
Knives: blade remains on both sides of spine	1973,2180
Trowels	1971/72/75/82
Non-tools	1974

Figure 1. Scapulae artifacts 2179, 2180, 2181: dorsal view.

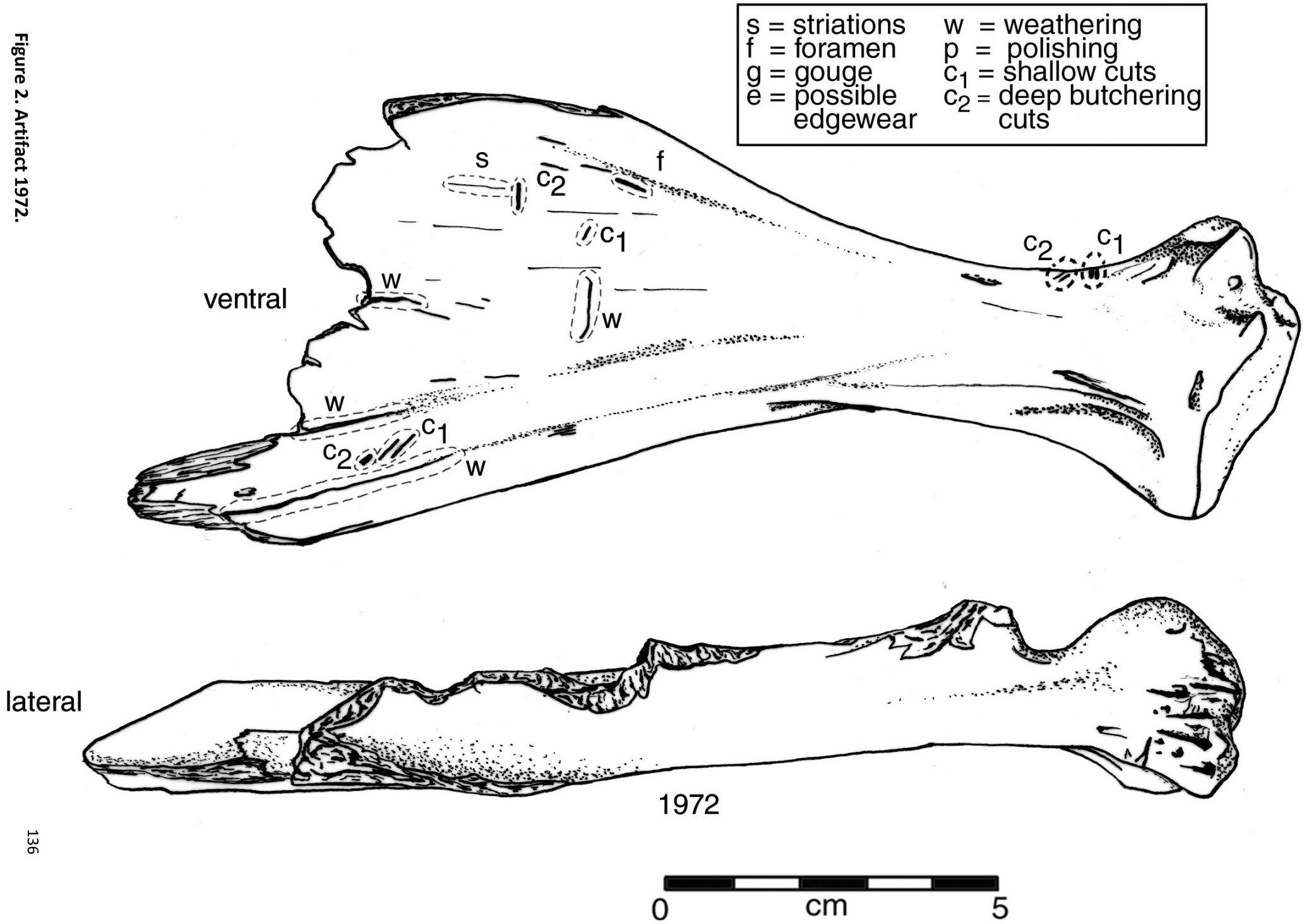
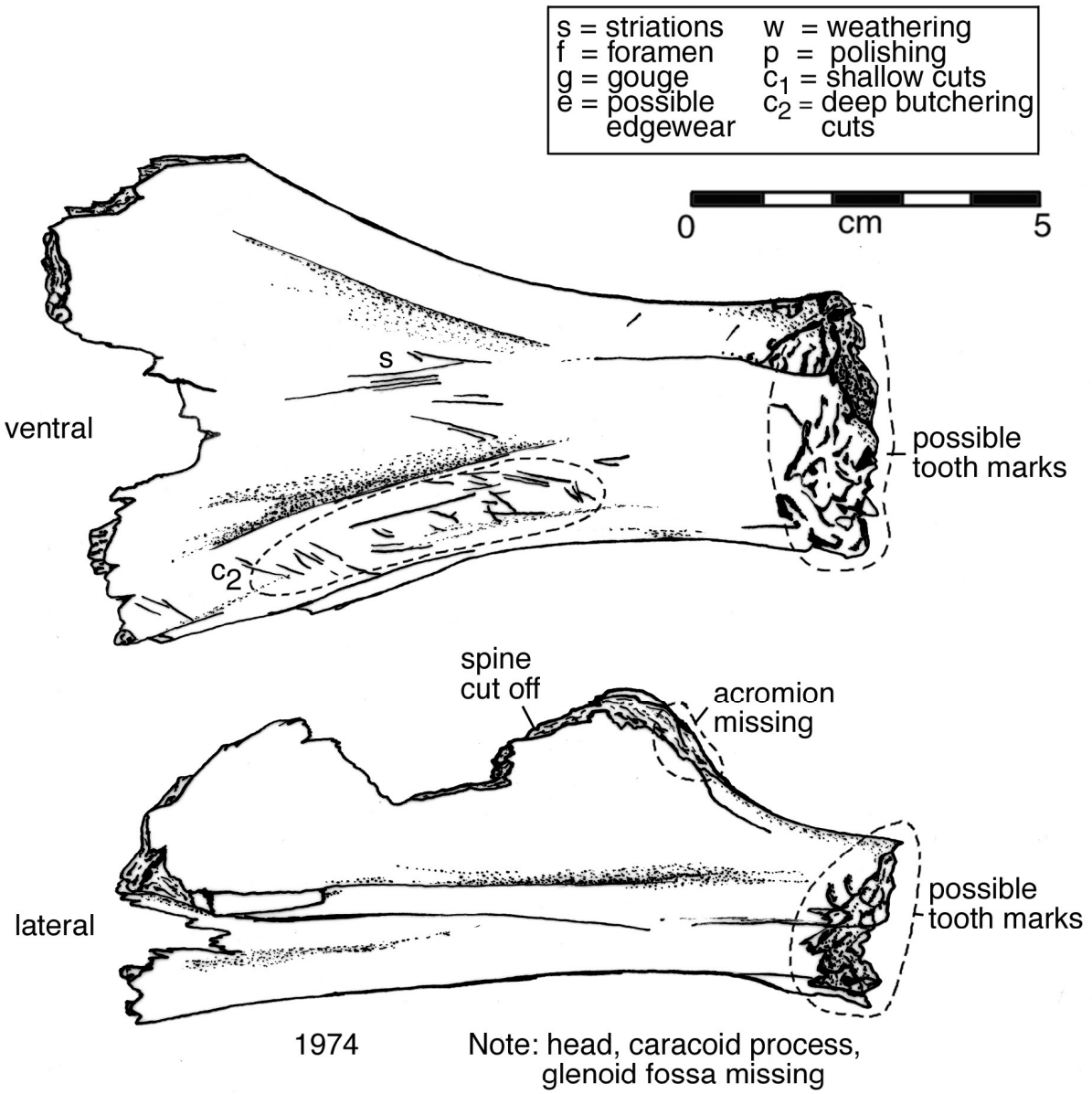


Figure 2. Artifact 1972.



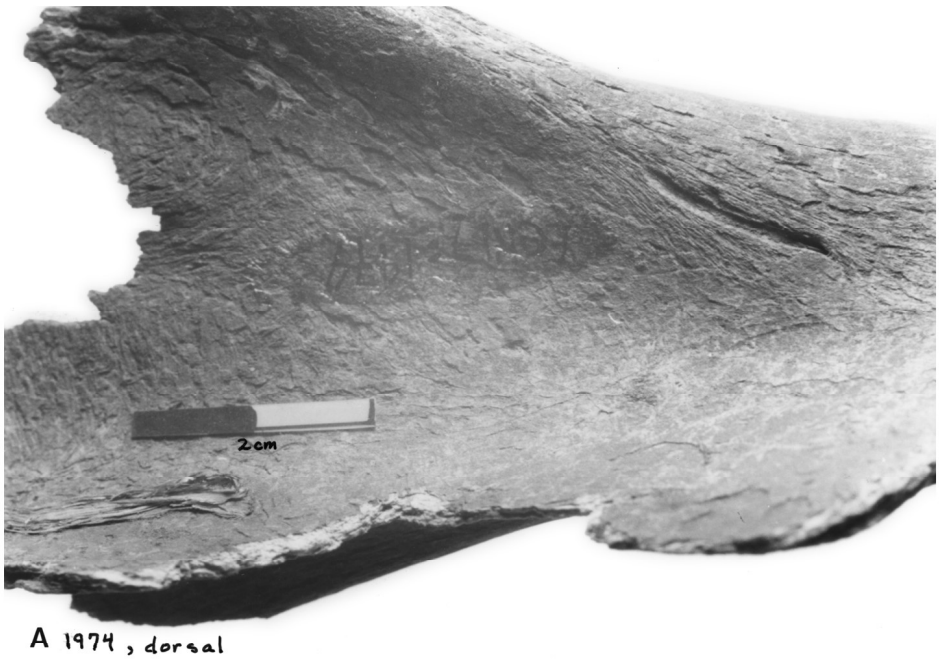
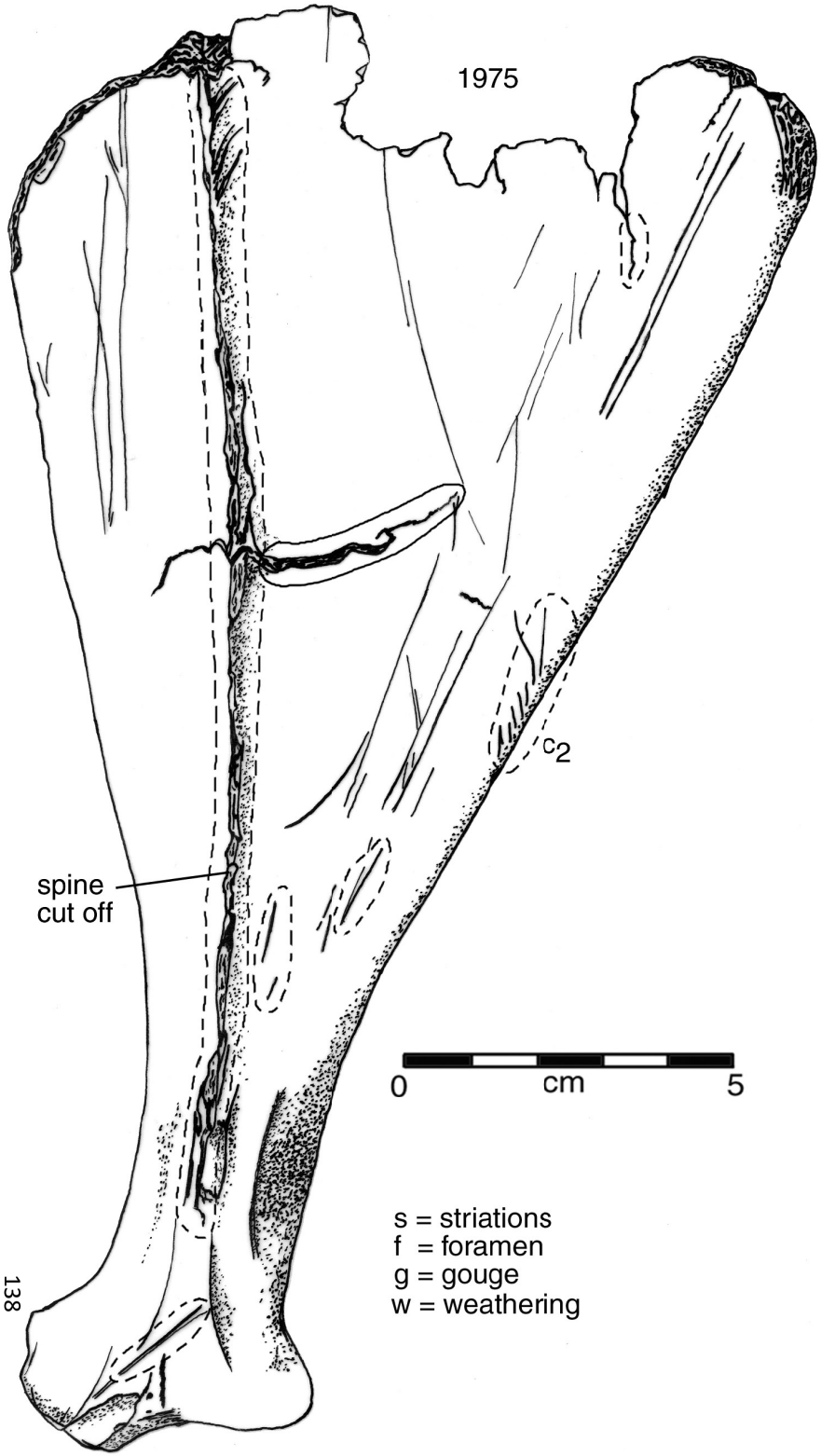


Figure 3. Artifact 1974: root-etching, weathering.



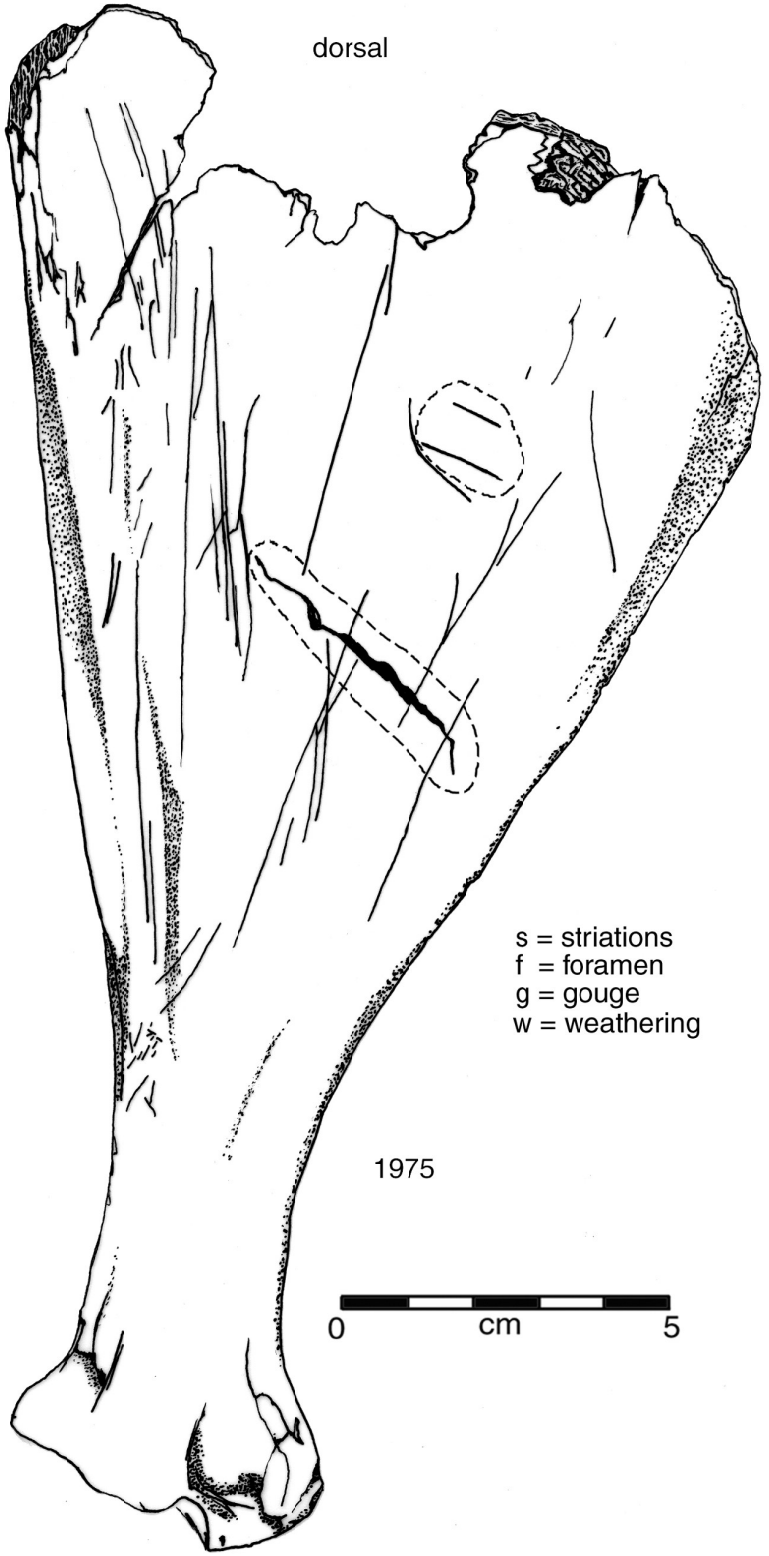


Figure 4. Artifact 1975.

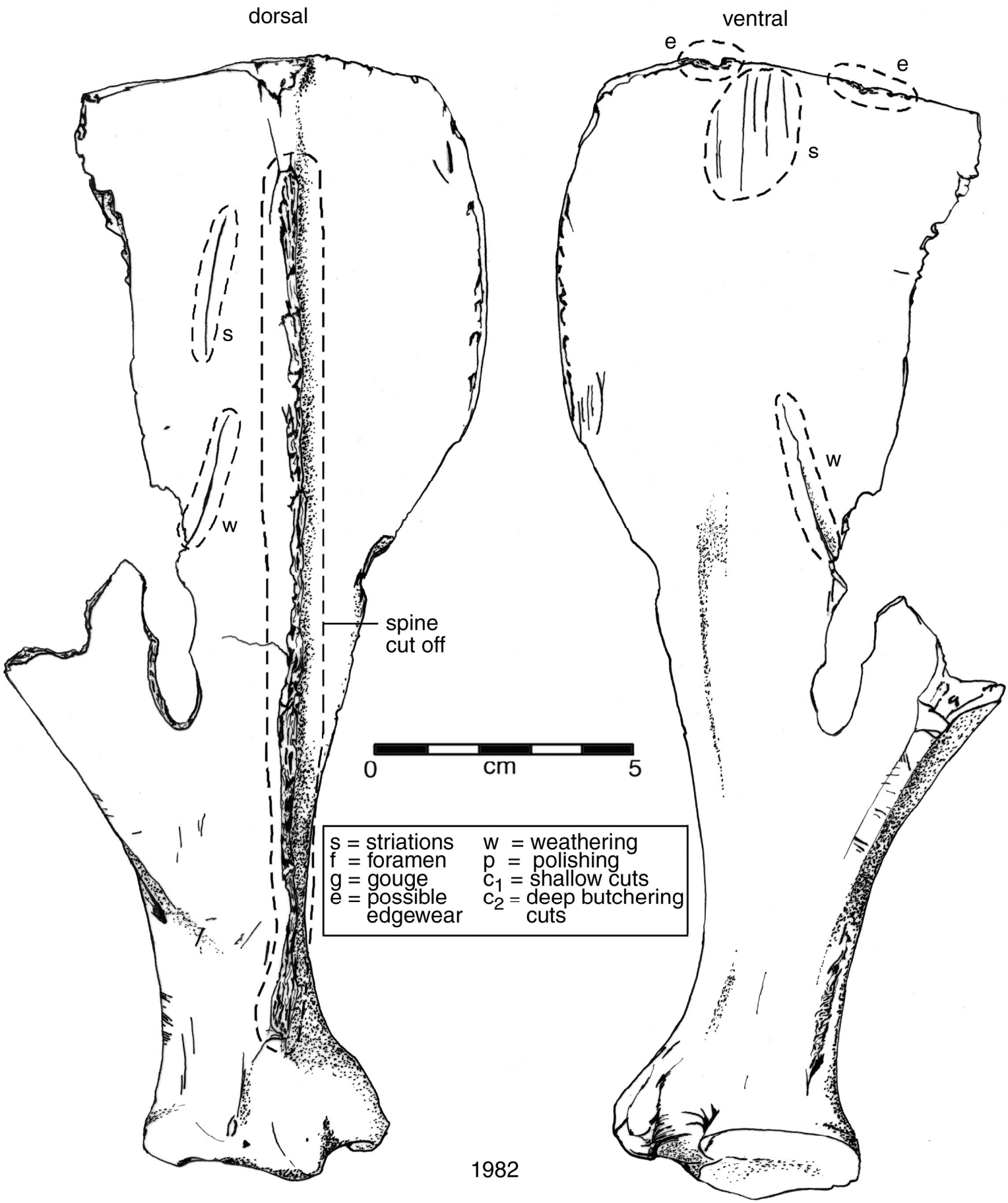
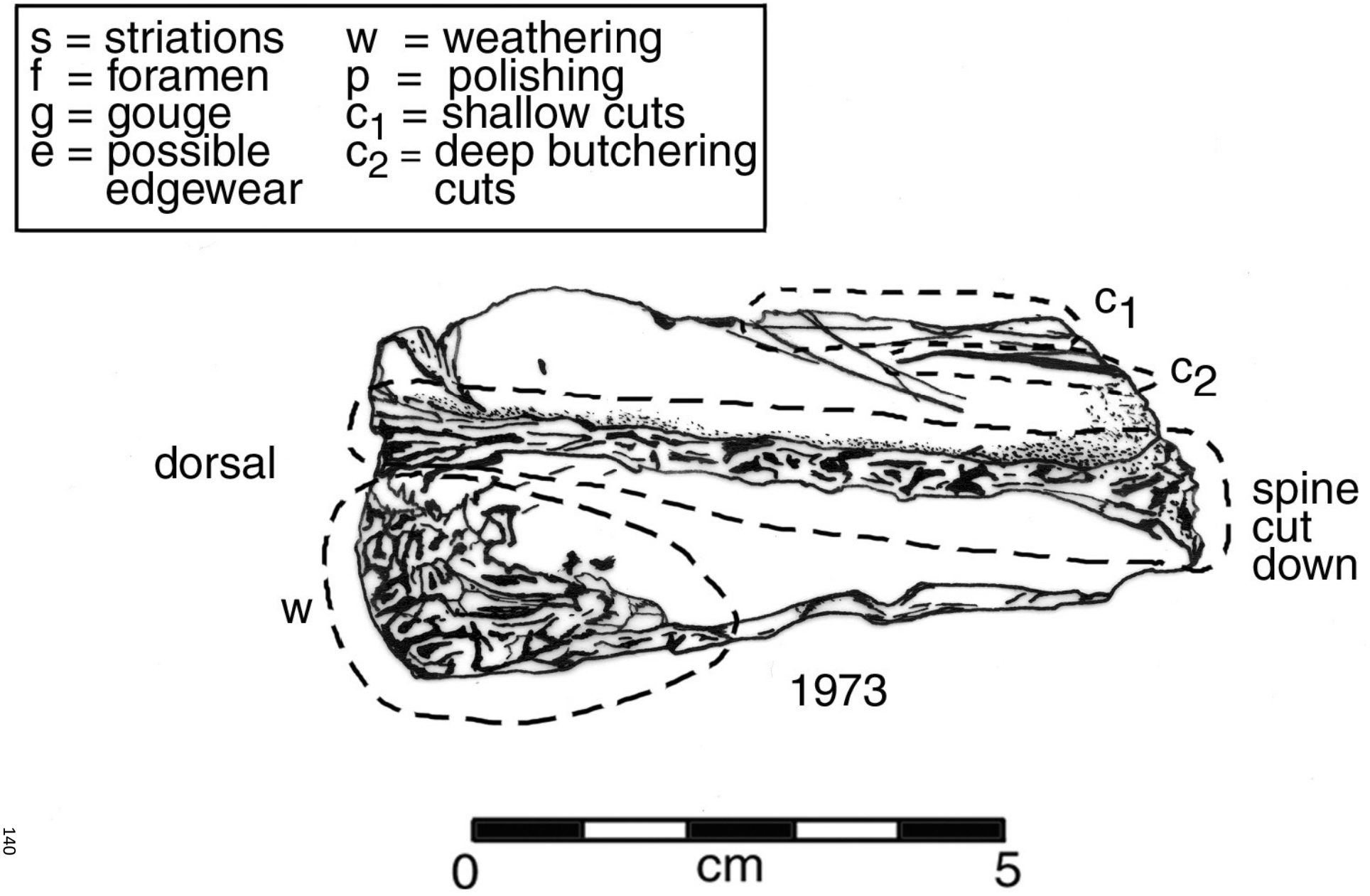


Figure 5. Artifact 1982.

Figure 6. Artifact 1973.



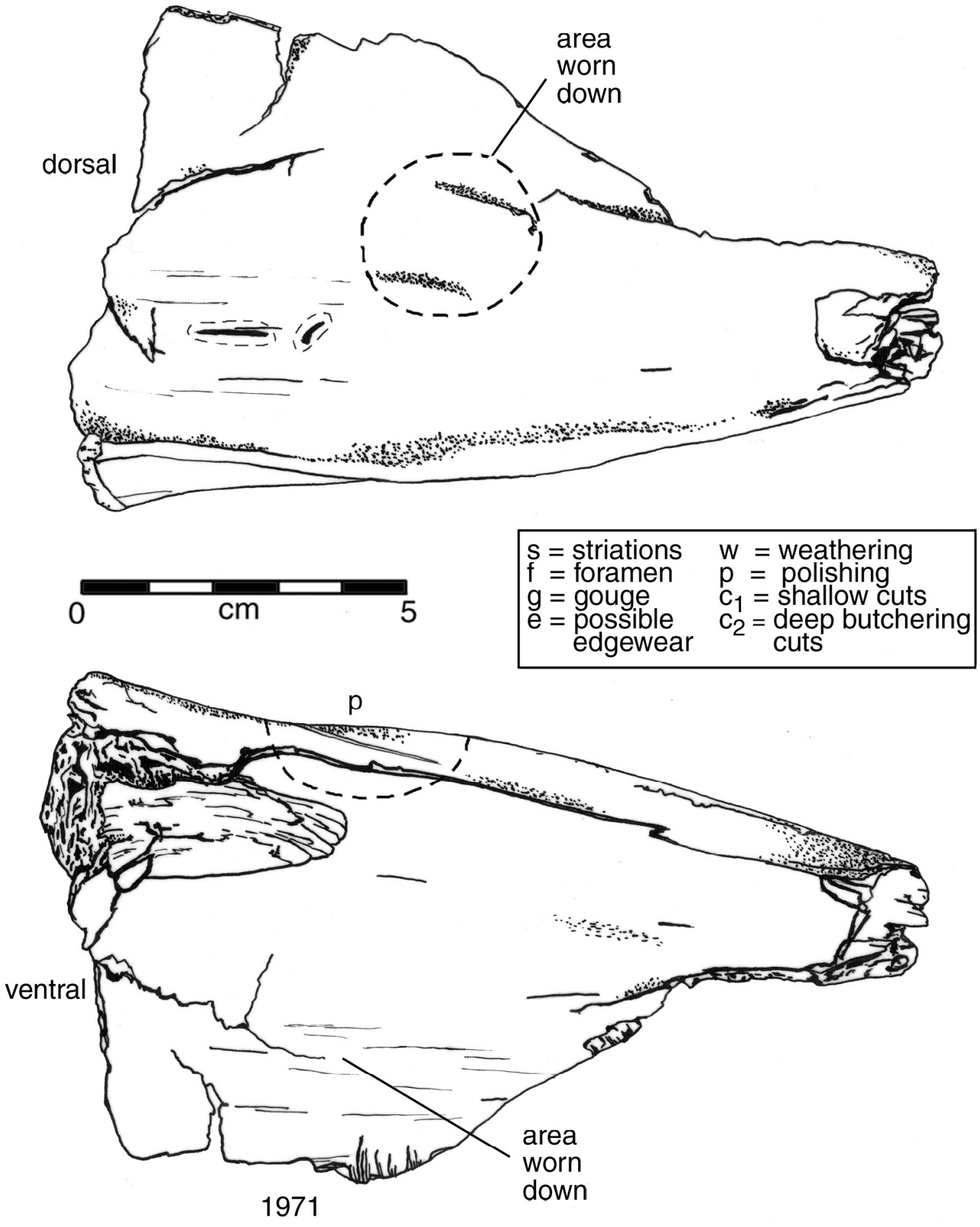


Figure 7. Artifact 1971.

Figure 8. Filleting marks on scapula (re-drawn from Binford, 1981).

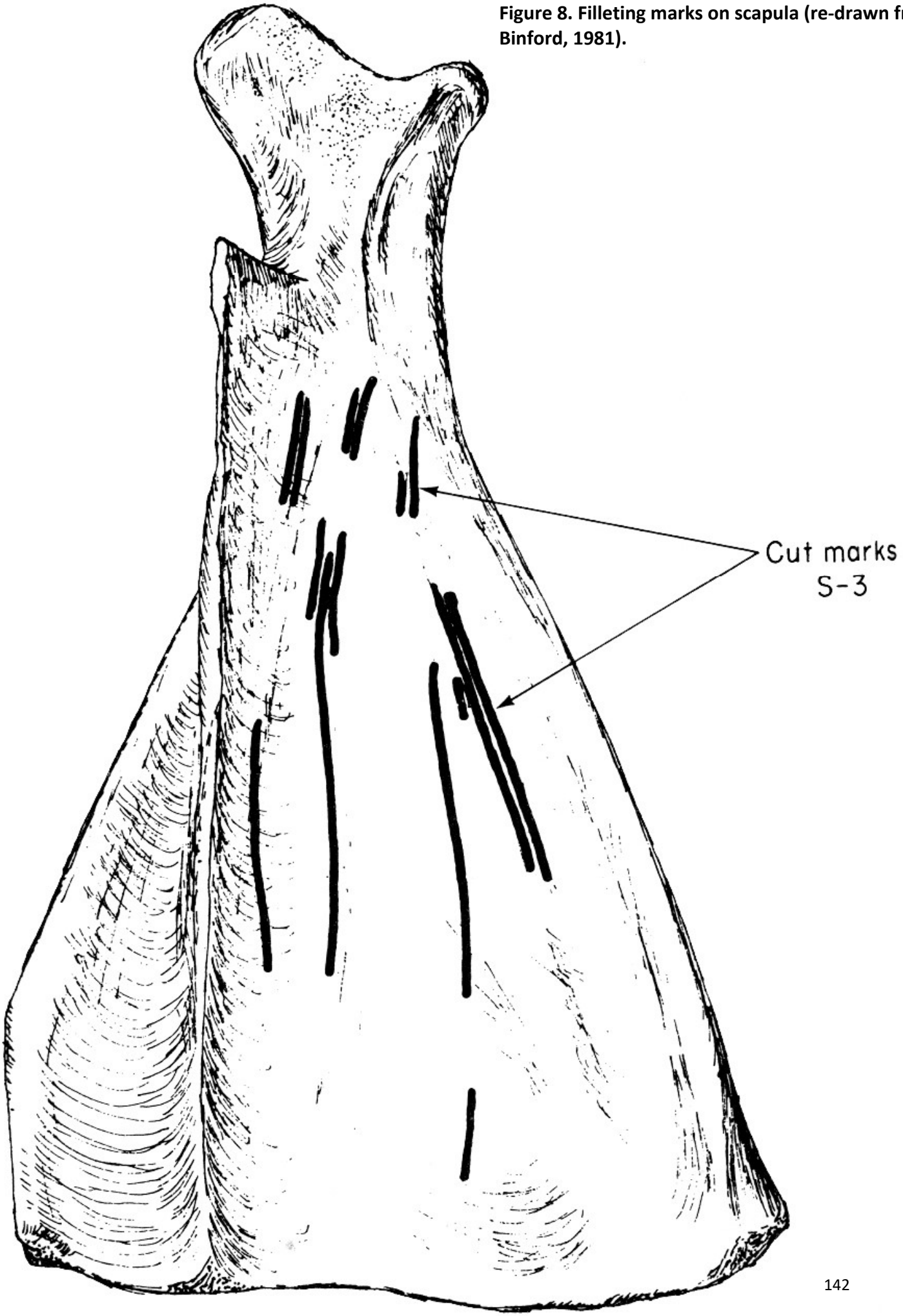
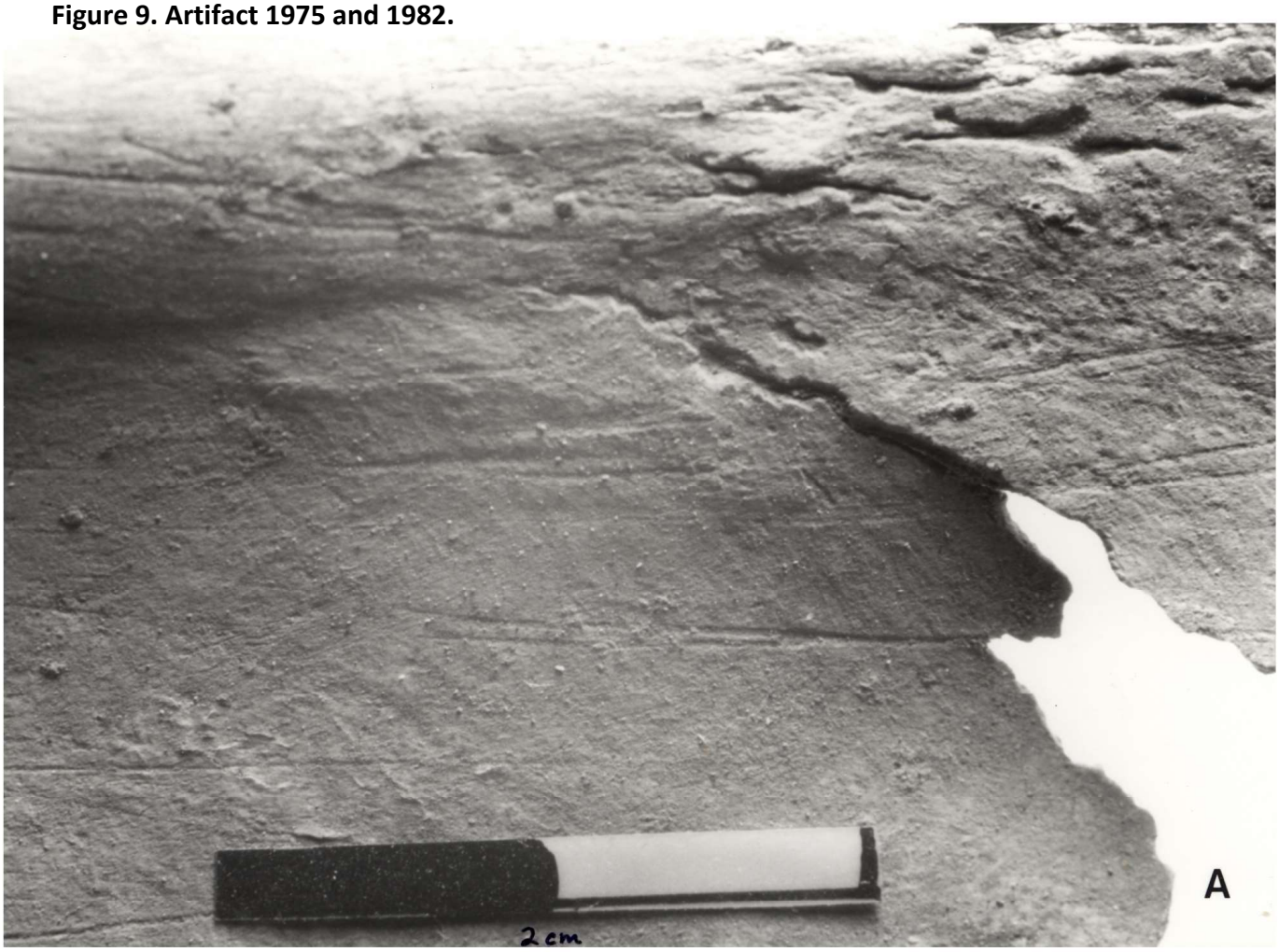


Figure 9. Artifact 1975 and 1982.



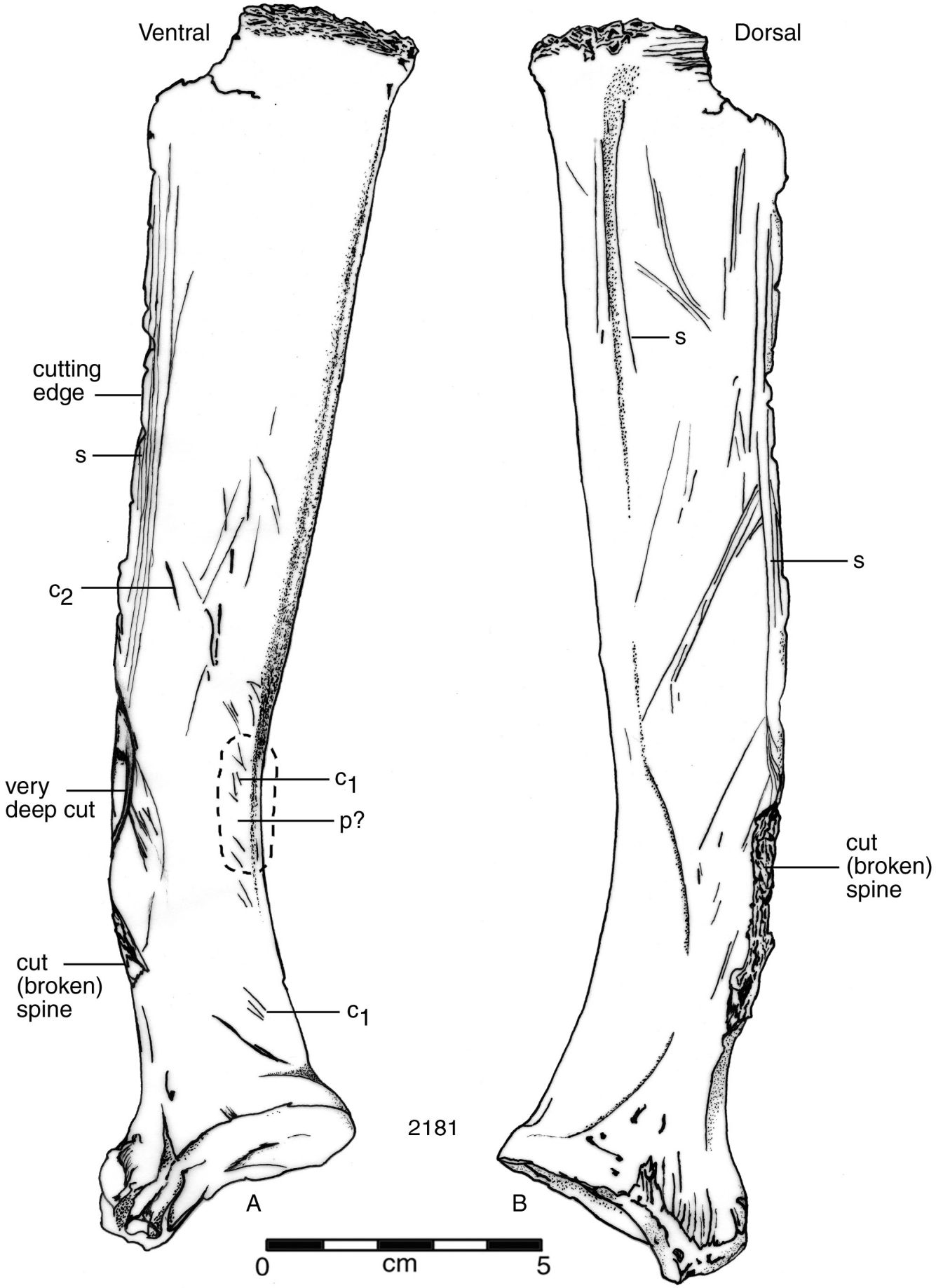


Figure 10. Artifact 2181: A: ventral; B: dorsal.

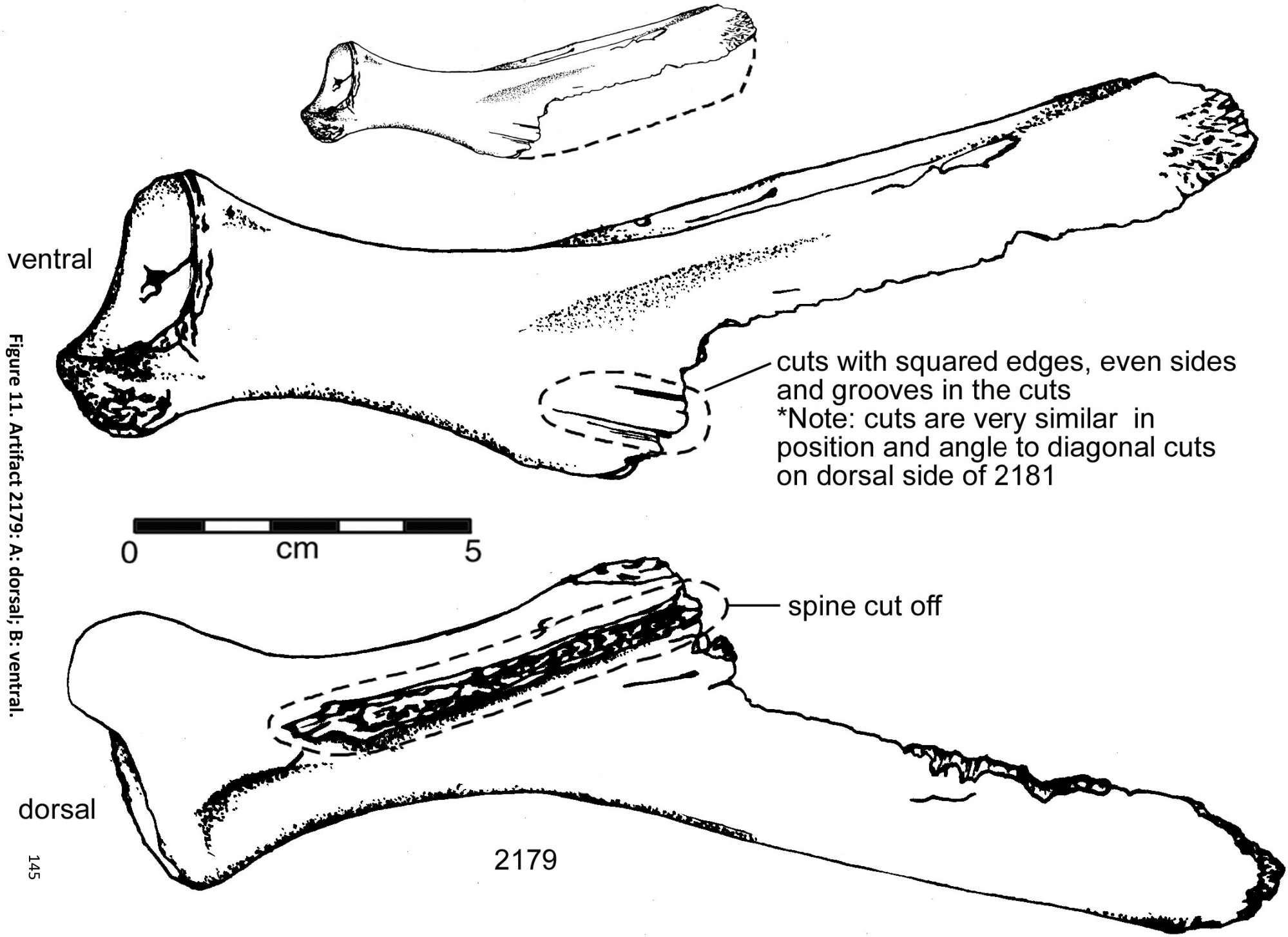


Figure 11. Artifact 2179: A: dorsal; B: ventral.

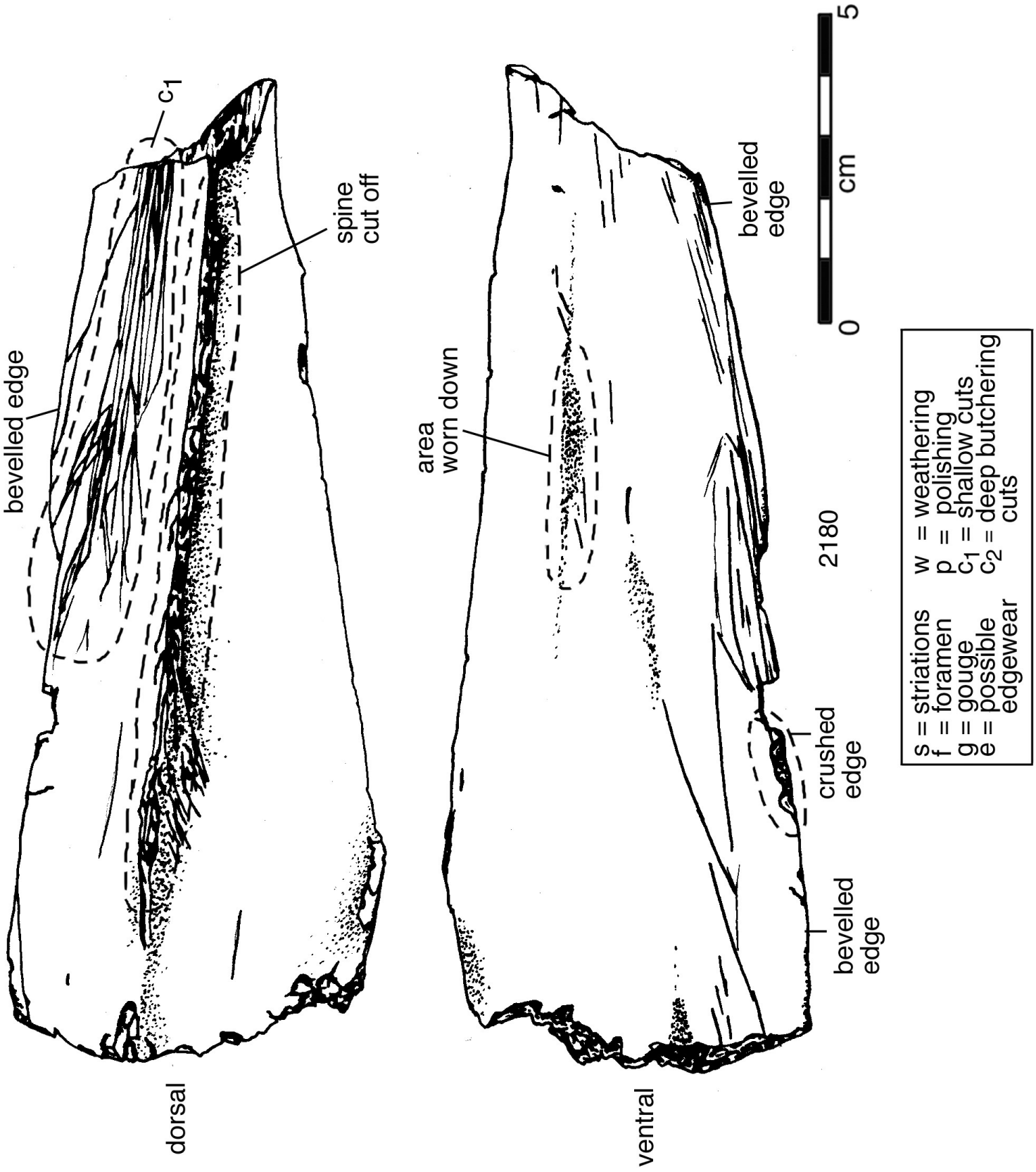


Figure 12. Artifact 2180. Note that the spine was not removed and thus could be used as a point for pressing down the index finger. On the ventral side there was also a depression suitable for thumb placement.

Figure 13. Side view of experimental mule deer scapula with spine, and of artifact scapula with spine cut down; (s = spine).

Photo 1. Item 2180.

Beyond Holes, Goals, and Roles: Summary of Excavation in Housepit 3

Gyles Iannone, Rob Gargett, and Pierre Friele

Introduction

The major goals of the Fraser River Investigations into Corporate Group Archaeology (FRICGA) project are to:

1) obtain information concerning the development of complex hunter-gatherers and of the rise of socio-economic differentiation, and
2) gain information related to the presence of Residential Corporate Groups in the Mid-Fraser region of the Canadian Plateau.

Part of the reason for asking such questions stems from the presence of various sized pithouses at the Keatley Creek site (EeRl 7). It is important to explain why differential house size occurs at this site, and how these houses interacted as an active community. In the first four years, methodologies were developed in efforts to obtain the types of data best suited to achieving the projects' outlined goals. In dealing with such questions the field archaeologist is often left with very select evidence to recover and assess. It was decided that the best method for researching the goals of the project would be to excavate contemporaneous houses of all size classes (small, medium, and large), with special attention being paid to contemporaneous house floors. It was felt that by comparing these floors and their material culture remains, one would best be able to deal with the apparent socio-economic differentiation at the site. Housepit 3 was excavated as part of this program.

Many intermediate objectives of the 1987 season of excavations were aimed at understanding the processes which created the archaeological record at Keatley Creek. At all times, excavators were required to be alert to

variability in the sediments in the immediate sampling area, around the housepit, and in other excavated portions of the site. Uncovering large floor areas, it was hoped, would reveal patterning of artifacts and features which could be used to infer:

1) discrete activity areas,
2) the range of activities carried on in the house,
3) family areas, and
4) areas associated with high status.

As well, wide area excavation would facilitate the objective of assessing the range of variability of floor sediments and the possibility of contamination of living space contexts by sediments from earlier times. In the process of achieving the above objectives, more would be learned about the design, construction, functioning, and decay of pithouses, the extent to which sediments were used to insulate pithouses, and the locations of activity areas on the roof surfaces. The eventual reconstruction of social organization within each pithouse requires the analyses of storage, cooking, and other features, as well as the distribution of faunal and artifactual remains.

Housepit 3 and Excavation Goals

The reasons for choosing HP 3 for excavation included

1) its moderate size (it fit into the sampling scheme of excavating large, medium, and small houses),
2) testing proved that HP 3 was uncomplicated in terms of stratigraphy
3) its floor dated to the time period under question (Kamloops Horizon 1,200–200 BP), and

4) the fact that its floor was recognizable, which is a prerequisite if one is going to successfully compare contemporaneous house floors.

Housepit 3 is located approximately 80 m due west from HP 7 (Vol. III, Preface, **Fig. 1**). Both of these houses contain contemporaneous floor deposits dating to 1,080±70 BP. Housepit 3 is oval in shape, with an east-west rim crest to rim crest measurement of 16 m, and a corresponding north-south measure of 13 m. The north-south baseline for the site runs through the western portion of the house. Outside of HP 3, the rim slopes gradually away from the house, leaving moderate to sharp slopes around the entire housepit.

The major goal of the excavations was to expose the entire floor deposit. Although this goal was not achieved in all areas, it was felt that the vast majority of the floor had been uncovered, and that the small sections of floor left unexcavated would have probably provided only minimal additional information. Altogether, approximately 68 m^2 (1986–1989) were excavated, with the rim/floor interface being reached in the northeast, northwest, and southwest of the house (**Fig. 1**). The southeast portion of the house failed to be excavated back to the interface, but excavation exposed a rising floor, which generally had very little in the way of material cultural remains. Square U in the north and Square W in the west may still contain limited amounts of valuable floor, but time constraints did not permit their complete excavation.

Along with this major goal of excavating floor deposits a secondary goal was implemented during the 1989 field season. In the ongoing quest to identify socio-economic differentiation, the roof was seen to hold some valuable clues in the form of outside activity areas, as well as in terms of interior roof storage activities. Even so, no strong methodology had been developed for extracting the data from these deposits. Initially the methodology related to excavating this stratum entailed excavating three

arbitrary levels. Level 1 consisted of the top 5 cm of roof materials. It was felt that this would reflect any activity areas which were on the roof at the time of its active use. Level 2 encompassed all remaining roof sediments, except for the last 5 cm above the floor. These last 5 cm were excavated separately in hopes of obtaining any materials which may have been stored inside the house in the roof beams during the occupation of the house.

Upon examining this methodology, Iannone set about to develop a stronger, more reliable excavation procedure. It must be recognized that the roof is an active layer not only in the systemic context, but also during the collapse, and prior to final collapse. If one expects to derive any information concerning artifact patterning in the roof matrix, one must take these situational actions into account. The developed methodology was aimed at getting as much out of the roof as possible by treating it as a dynamic deposit. At this time it must suffice to outline the general excavation procedures implemented during this field season.

In looking at the roof matrix in HP 3, it soon became evident that a more sophisticated methodology could be developed to deal with the roof. First and foremost, based on the fact that the rim slopes away from the HP 3 on all sides, no foreign materials are able to enter the housepit itself. This leaves one with various forms of reworked roof deposit, without the influx of foreign colluvial sediments. Secondly, in looking at exposed profiles, it was noted that within the roof stratum there were at least three naturally separable sub-strata. It was felt that if one could deal with these deposits as separate entities, and monitor their horizontal and vertical changes across space, one could establish some viable conclusions as to how these sub-strata were formed and more importantly how artifacts moved about within and between them. Based on these factors the following excavation scheme was developed relating to the roof.

The roof stratum was excavated in two arbitrary levels, and three natural sub-strata, with varying forms of this scheme occurring based on the thickness of deposits and the number of sub-strata present. The top 5 cm of the roof was excavated as an arbitrary level (Stratum IIa/Level 1). If this arbitrary level cross-cut two natural sub-strata this was noted in the square record but the entire 5 cm was treated as an individual entity in terms of artifact recovery. The next level was a natural deposit which was removed until the next natural sub-stratum was reached. Excavation of this natural sub-stratum continued until one reached the final, naturally defined sub-stratum. This last sub-stratum was excavated as an entity until it was perceived that approximately 5 cm of roof was remaining above the floor. At this point the level was discontinued, and the last of the roof came off as one 5 cm arbitrary level (Roof Bottom). As with the initial 5 cm level, if this last 5 cm level encompassed more than one sub-stratum deposit this was noted in the square records. As is mentioned above, various forms of this excavation procedure were implemented based on the thickness and types of sub-stratums present in each particular subsquare. Further and more explicit observations pertaining to this scheme are outlined in the following stratum descriptions.

Stratum Descriptions

(Munsell colors represent dry sediments)

Stratum I—Surface

Stratum I (**Fig. 2**) consisted of a loosely consolidated 2.5 Y 4/2 (dark grayish brown) sandy silt with approximately 15% pebbles, 30% granules, and 15% organics. Percentages of clasts and munsell color designations vary slightly depending on which portion of the house one is dealing with. This is due to the fact that slope angles vary horizontally across space, as do parent materials. This parent material (roof sediment) cannot be viewed as a

homogeneous matrix to begin with. Roof deposits must be viewed as an accumulation of different materials deposited during roof construction, roof maintenance, and cultural activities. Thus, any deposit derived from this matrix will also reflect the variability inherent in the parent deposit. As was mentioned previously, all materials above the floor in HP 3 (with the exception of rim spoil and rim slump) must be viewed as varying forms of roof sediments. Admittedly some foreign materials must have entered the house as aeolian additions, but it is felt that these sediments are limited and they are thus deemed minor in regards to the depositional sequence of this housepit. For the most part, this surface matrix is high in root and rootlet content. Lithic debitage and artifacts are often of small size (1–2 cm), the majority of which display some form of patina. These data indicate slow burial of these artifacts. Bone and organic materials are rarely encountered in this deposit. Overall, Stratum I is found across the house, and was formed as erosional processes moved roof materials throughout the house in the form of fine colluvium. In regards to excavation, this stratum was removed in one level (Stratum I, Level 1).

Stratum II—Roof

The roof stratum makes up the majority of the depositional matrix overlying the floor. This stratum is broken up into three natural sub-stratums. To reiterate, the roof's heterogeneity in terms of clast size and color dictate that any deposit derived from this matrix will also vary across space. Thus the following Munsell designations and clast percentages must be viewed as averages rather than constants.

Sub-stratum IIa

Roof Surface

Roof surface is made up of moderately compact 2.5 Y 4/2 (dark grayish brown) sandy silts with less than 5% cobbles, 15–20% pebbles, at 20–30% granules. For the most part this sub-stratum is similar to the colluvial materials found in Stratum I, minus the roots and rootlets. This slight difference accounts for the rise in compaction. Lithic artifacts more often than not display a patina similar to Stratum I. Again very little in the way of bone or organics occur in this deposit. Basically, it is solely the lack of roots and rootlets which increases compaction. Thus it is this factor which determines the separation between Stratum I and Sub-stratum IIa. In regards to excavation procedures, the initial 5 cm of this deposit were removed as Statum IIa/Level 1, with the remainder of the matrix coming off as Statum IIa/Level 2 (except where the first 5 cm exhausted the IIa Sub-stratum, in which case the next recognized deposit became Level 2 of Stratum II).

Sub-stratum IIb

Roof Fill

Roof fill is made up of loose to moderately compact 5 Y 2.5/2 (black) sandy silts with 5–10% cobbles, 30–50% pebbles, and 20–30% granules. This sub-stratum represents the type of materials which would have been found on the roof in its systemic context, or in other terms during the time that there was an "active roof." This contrasts with how the term "roof fill" is used in other houses where all roof materials between the upper and lower 5 cm arbitrary levels are described as "roof fill." Lithic artifacts are abundant and for the most part lack the patina found in Stratum I and IIa. This indicates rapid burial of materials. On average flakes are larger in size than in the above deposits, and the overall percentage of flakes is also higher. Furthermore, the roof fill matrix appears to display the highest percentage

of exotic lithic materials. This is probably due to the fact that as a systemic roof deposit it contained artifacts from various occupations and building episodes. It is felt that the majority of exotic lithics found in this deposit may represent earlier (e.g., Plateau) occupations, although this is only a tentative conclusion. Bone and organic materials are found in moderate to low percentages in the roof fill deposit.

As part of the collapse process this deposit would have undergone a number of depositional transformations including some massive movements vertically and horizontally. Also, sorting out of fines would have occurred during and after the collapse sequence. The reduction of these fines along with the remaining overall large clast size combine to create the lack of consolidation in this deposit. The degree of sorting resulting from this pre-collapse filtering is closely tied to individual collapse events. That is to say, in each house collapse, a number of localized collapse events and processes lead up to the final roof collapse. Therefore, no two areas of the house will necessarily display the same events to the same degree. These events may be viewed as a system, with each individual collapse event initiating responses in various others. It is important to piece together these individual collapse events to fully understand the roof deposits. If this can be done one should gain a stronger understanding of artifact patterning in this deposit. In regards to excavation methodology this entire sub-stratum was removed as Stratum IIb/Level 3 (or the corresponding level one had reached for the overall roof Stratum II).

Sub-stratum IIc

Filtered Collapse

Filtered Collapse is made up of moderately compact 2.5 Y 3/2 (very dark grayish brown) sandy silts with 5% cobbles, 20% pebbles, and 40% granules. This sub-stratum represents a deposit formed during the collapse sequence,

prior to terminal collapse, when thinner portions of the roof structure were burning though permitting some of the earth on the roof to filter through and fall on the top of the floor together with pieces of burned roof. It invariably contains sections of burnt structural features. Some of these may be small (<10 cm), others may run across excavation squares. The matrix is enriched by the previously mentioned fines which filtered out of the Stratum IIb roof deposit. Thus, this matrix represents its parent material, yet takes on its own identity due to the sorting/filtering process. Commonly, filtered collapse is dark and rich in organics. The lithic materials uncovered resemble those found in Stratum IIb, although impressionistically average flake size seemed smaller, and overall flake percentage declines. Lithic artifacts found in this sub-stratum which are not derived from IIb are large flakes which may have been stored in the roof beams during active house use. Such artifacts would inevitably be deposited during filtered collapse formation. Concentrations of these flakes were sometimes empirically recognized some 10–15 cm above the floor deposit. Some bone and organics were found in small percentages in the filtered collapse matrix. Commonly, filtered collapse grades from coarse to quite fine as one moves towards the floor. This is an expectable observation as the depositional sequence entails a gradation from fine filtering to less discriminating filtering as larger and larger holes are burned through the roof structure. This process often leads to a very fine, greasy, sandy silt deposit in the last 3–5 cm above the floor. Undoubtedly this represents the initial fine filtering deposition as the roof structure begins to shift. Small to large sections of structural features and bench components are often found within this fine material, laying directly on or just above the floor. These data rule out the idea that one is actually dealing with a floor deposit. It must be stated that one should not expect to find the same form of filtered collapse in all instances. This is due to the fact that filtered collapse is formed during the pre-collapse sequence, thus it will undoubtedly reflect the individual collapse process related to the particular

area of the house one is excavating. This ultimately leads to the differential depth, coarseness, and compactness found in any particular filtered collapse deposit. For these reasons filtered collapse is extremely useful for piecing together house collapse events. In regards to excavation, the initial level of filtered collapse was removed as Stratum IIc/Level 4 (or the corresponding level one had reached for the overall roof Stratum II). The last 5 cm of this matrix was excavated separately as Stratum IIc, Level 5 (or again, the corresponding roof level one had reached).

Spatial Variability of Roof Sediments

One object of our excavations was to observe evidence of differential use of the roof surface, with the hypothesis that the sunny south side would be more likely to exhibit evidence of activities carried out on the roof. Although excavations in the northwest of HP 3 did not extend as close to the rim as in the southwest for a precise comparison to be made of the variability in lithic debitage, one major difference was encountered—fire-cracked rock and heavily charcoal-stained (very dark) sediments were predominant in the northern roof deposits, while browner sediments and little fire-cracked rock occurred in the south. One inference which might be made from this is that the southern part of the roof was not used as a dump for exhausted heating rocks and charcoal. If only a portion of the roof was used for dumping refuse, some other use of the remaining area might be implied.

Relatively abundant debitage in the 1–10 cm range and simple retouched tools were found higher in the roof deposits, representing, it is thought, refuse which collected on the surface of the roof during the occupation phase. The subjective field impression of the use of the southwestern portion of the roof as a lithic workshop was supported by more detailed analysis (see Vol. I, Chap. 14).

Roof Thickness

An elliptical area in the center of HP 3 appears to contain little if any sediments from the roof. Aeolian surface fines and very small (i.e., 1–2 mm) angular gravel, the result of slopewash, predominate above the floor in the central area. Some of the possible explanations for such a void are:

1) The sediments heaped on a conical roof may have slid toward the rim, creating roof deposits, which are thin near the apex and thick near the rim. In the collapse phase (whether collapse was deliberate or not), this would result in relatively shallow deposits nearest the center of the house.

2) As is ethnographically reported, people may have left and entered through a hole at the apex of a conical roof. In this case, the lack of roof sediments at the center would be expectable. Depending on the actual sequence of collapse, the lack of sediments where the hole was would translate into a lack of roof sediments on the ground.

3) The inhabitants may have exposed the roof timbers prior to collapse, in order to scavenge usable wood for new construction or for fuel for fires, a lack of roof sediments in the center would likely be the result.

A compelling choice from these possibilities will likely continue to elude us until more such "holes" have been examined.

Near the perimeter of the floor, roof deposits thicken. They thin out again toward the top of the rim. This is what one would expect given the construction and re-use sequence illustrated in Volume I, Chapter 17. An area of charred wood and fire-reddened sediments is visible in profile (**Fig. 2**) about half way up the rim, just above Stratum IV at about 85 m south. This is precisely the position where the roof beams are believed to have been anchored. Here, roof sediments are thickest. The thickest deposits would naturally occur at this point, both because the sediments on the roof are likely to be thickest directly over the footings of the roof, and because

gravity would encourage those sediments higher up on the rim to slump to this point during collapse and immediately afterward.

Roof Discussion

The picture that evolved from the excavation of roof sediments is that they are as variable as those on the floor. Clearly, they are the product of both cultural and non-cultural transformations occurring during and after occupation. Distinguishing them from floor and surface accumulations depends on the understanding that most of the sediments which occur above the floor must be roof covering material. The only composition of the roof material which allows positive visual definition of the roof is the structural component. Wood was used throughout for support and cover. Everything else occurring in roof deposits must have been placed on top of the wood, with the possible exception of items stored in the roof beams and left when the pithouse was abandoned.

Clastic Variability

During the occupation, when it was necessary to replace a roof, usable structural elements were probably removed and the remaining elements burned in place to facilitate removal. The charcoal and organic-rich collapse debris and earlier occupation floor were then removed prior to rebuilding. These deposits would be preferentially placed on the new roof. Such fertile sediments (versus "sterile" till) would encourage the rapid growth of vegetation, and consolidate and stabilize the sediments against most forms of erosion, as well as insulate the living space within. Thus, we should expect the roof materials to be high in cultural and culturally-modified sediments of all kinds, and to be as variable, spatially, as floor deposits. For example, if the north of the roof was used to dump exhausted fire rocks and charcoal, the likeliest place for that material to be employed in the rebuilding of the roof would be the same part of the roof. Presumably, if roof sediments are

being moved from the house depression to the rim in preparation for a new roof, the rim-top closest to the area being stripped would be the preferred destination for the debris. Likewise, floor sediments, which are being stripped along with the debris from the roof collapse, should come to rest on the rim or on the roof nearest to where they were removed from. Therefore, the clastic composition of a given part of the roof should mirror artifact patterning in the floor and roof-top deposits, and would tend to concentrate such material through successive occupation episodes. This seems to be the case in HP 3. All the sediments comprising the roof collapse debris are very dark due to their high organic content. They contain high levels of fire-cracked and fire-reddened rock of all sizes (0.5–25 cm) in spatially variable concentrations (Vol. I, Chap. 14), some of which can be interpreted as individual dumping episodes.

Charcoal is found throughout in variable concentrations, and charred and partly charred wood can be found near the contact with the floor, generally around the perimeter of the floor. This is as one would expect: roof sediments are deepest at that point, and would have acted to deter scavenging for fire-wood which might have occurred closer to the center of the house where the collapse debris would have been more accessible. Equally plausible, is the idea that the depth of the sediments would have acted to smother a fire upon collapse nearer the rim, while this might not have been the case closer to the center where they were not so thick or may not have even been present. The perimeter location of partially burnt remnants of much of the wood found in HP 3 (**Fig. 3**) tends to support the latter notion, but the two possibilities can be compatible.

Near the floor/rim interface wood can be found which is several centimeters above the observable floor. Beneath, there is a soft, loamy deposit, which thickens toward the rim. These are some of the best sorted deposits encountered in HP 3 and are what we refer to as "filtered collapse."

Sections of roof coming to rest slightly above the floor probably allowed fine roof sediments to pass around them and through cracks, while larger clasts would be trapped above. Alternatively, many fine elements may have gradually filtered into the thick bed of pine needles that generally covered the roofing poles while the roof was functional. When the roof burned, these pine needles would be the first elements to be consumed and any sediments trapped in the pine needle layer would be the first to fall onto the surface of the floor. We expect that any airspaces between the collapsed roof and the floor would be filled in this manner. The differential downward transport of fine sediments helps to explain an equally anomalous layer which occurs above the wood in these areas: a completely unconsolidated lense of small gravel (i.e., 1–2 cm range) containing almost no fine sediments. These kinds of deposits are found in both the excavated south and north rim/floor interface in HP 3. It seems very unlikely that either stratum—well sorted fine vs. coarse lenses—could have been created by cultural activity given that they have undergone a collapse event. Collapse would act to mix, rather than to preserve any sediments which were on the roof. Reworking by groundwater and gravity seems to be the most likely agent for the production of the anomalous strata described above.

Stratum III—Floor

Recognizing Floor Deposits in Housepits

Because no single characterization of floor sediments is possible each excavator was forced to consider the processes which likely contributed to the formation of strata in each area excavated, *while excavating.* This method was critical for the optimal recovery of data pertinent to the short, medium and long-term goals of the FRICGA project.

Excavations at HP 3 support the intuitive and ethnographically reported occurrence of rebuilding episodes involving the removal of previous pithouse collapse and floor sediments and their disposal on the perimeter of the rim prior to reconstruction. The newly-exposed substrate of "sterile" glacial till then became the new floor, and was subject to the various processes, outlined below, which result in a discernible floor.

Inspection of cleaned profiles everywhere in HP 3 revealed a quite variable boundary between those sediments we identified as "floor" and those termed "sterile." This uneven boundary does not, in all likelihood, represent an original surface on which the observable "floor" sediments had been deposited. Some observations which clarify the origins of the floor/sterile boundary are:

1) That very small (i.e., 1–2 mm diameter), well-preserved fish bone were noted occurring at the boundary, suggesting that they were below the level where trampling would have destroyed them. Most such fragile organics would not likely have survived long in the trampling zone. Indeed, such fine clasts are almost totally absent nearer the living surface. Trampling and reworking of original sediments, resulting in transport downwards, probably account for their presence here; and their rarity elsewhere suggests that such clasts were not normally preserved in this manner.

2) Organic staining was also deeper around certain large clasts at the boundary between "sterile" and floor sediments, and especially where the sediments in the substrate are less consolidated (apparently part of their natural variability). In these latter areas, staining can even be observed under large clasts, which do not appear to have been placed there purposely, while in areas where "sterile" sediments are more compact, even large clasts which protrude into the floor are not surrounded by dark staining. This suggests that the presence of

organically stained sediments does not necessarily define the original surface of the floor nor does it represent the actual depth of active human turbation. Rather, it represents the maximum depth to which organics have penetrated the substrate.

3) Organically stained "sterile" sediments are deeper at floor level in the vicinity of post-holes and other intrusive features, such as storage pits. Loosening of once-compacted sediments around such features during their construction, resulting in deeper penetration by organics during occupation, logically explains the presence of these anomalous depressions of variable topography around intrusive features.

4) Whereas larger refuse is often found within floor sediments, as well as on the floor surface, only very small objects (i.e., less than 2–3 mm) are regularly found at the "contact" between the floor and the substrate.

5) If color difference alone were used to define the bottom of the floor, a curious picture of the formation of the floor deposits would emerge. The "contact" between the "sterile" substrate (yellowish) and the darker sediments above is quite uneven, with undulations of variable amplitude and frequency. This argues for an uncomfortable walking/living surface at the commencement of occupation. However, if the "contact" were created as a living surface, trampling should have erased the undulations, leaving a relatively smooth boundary. Thus, some other explanation must be sought for the observable "contact."

These characteristics of the observed floor/sterile "boundary" argue strongly for a microstratigraphical, *in situ* transformation of once-pristine substrate, resulting in what appears to be the base of the "floor deposits." This belief is strengthened by the observation that, in many places, and especially where floor deposits are thin and color differences imperceptible, such as in the center of the house, portions of the floor can be distinguished from the overlying strata only by the presence of unmodified (i.e., not

fire-reddened or cracked—though organically stained) rocks and gravels which appear identical to those comprising the till underneath.

The original floor surface, created when the debris of a collapsed pithouse was removed prior to rebuilding, probably began as pristine (or nearly so) glacial till. Because of organic staining, as described above, stripping the interior down to "sterile" may have removed 1–3 cm of what had previously been "sterile" sediments, along with those floor sediments which had collected during the span of occupation. Successive occupations would act to produce the sometimes deep, sub-surface house depressions observed at Keatley Creek and other sites in the region. In the case of HP 3, it would appear that relatively few such episodes occurred, since the "sterile" at the center of the housepit is only 20 or so centimeters below the observed original land surface. If, as seems plausible, HP 3 had seen occupation over the past 1,500–2,200 years, then it also seems possible that HP 3 was only desultorily occupied during that time. Continuous occupation over millennia would likely have created a much deeper depression, like that of HP 7 (see Vol. III, Chap. 5). This agrees with the expectations of Hayden and Gargett 1987, that the housepit locations of lesser ranking families would go through periods of abandonment, or changes of hand, due to variables relating to the ability of a given group to exert ownership privileges.

Pithouse reconstruction, to reiterate, probably involved "scraping" the sediments from the previous occupation down to "sterile," leaving little or no debris on the new floor. If cultural material had been left after "scraping," then a gradual buildup of floor deposits over successive construction phases should have resulted, and older cultural material would occur in the floor. However, this does not seem to be the case in HP 3, where the thickness of the floor (1–3 cm), much of which can be attributed to organic staining in many parts of the house, argues against palimpsests of occupation. Furthermore, the relative abundance of cultural material in roof

and rim deposits, which do in fact represent the accumulation of more than one occupation as a rule, also argue for the floor deposits being the result of transformations of previously pristine sediments during a single construction/occupation/collapse sequence.

Thus, it appears that the most recent occupation of HP 3 began with the stripping out of previous cultural debris, leaving a "sterile" surface. Trampling and other kinds of disturbance created a permeable layer, 1–3 cm deep, into which artifacts and organic refuse (e.g., grease, bone, charcoal, ash) were mixed. These deposits, because of the sediments on which they occur, and because of their particular formation processes, are distinguishable from other deposits with different origins, such as those comprising the roof.

Clastic Variability

Based on field observations, some of the hypotheses concerning variability in clastic composition of the floor are:

1) In high traffic areas, such as entryways and communal activity areas, the substrate would be continually scuffed and reworked, with large clasts removed when they become loosened and obnoxious. These areas should also be expected to exhibit the thinnest deposits, resembling the substrate most closely, because there is less chance for deposition.

2) Where less energetic activities occurred, such as in sleeping areas, and generally where traffic was light, fine sediments would be expected to compose a larger fraction of the deposits. Less movement of air and less trampling would encourage deposition, and such places would probably always be the ultimate resting place for allochthonous fine sediments introduced, for example, with fuel, bedding material, on feet and clothing, and on the fur of animals (domestic and commestible), as well

as sands and silts blown in from outside, sediments spalling off interior house walls, plus dumping of material from pit cleanings.

3) Depending on the kind and locus of activities and storage, certain clastic components should occur differentially in the floor sediments. Charcoal, ash, meso- and micro-debitage, decayed organics, bone, faeces, fat and fire-cracked rock of all sizes would all be represented to a greater or lesser extent in different areas.

Floor deposits were, in fact, thinnest in HP 3's central area. Here, the floor resembled the sub-floor glacial till most closely in terms of particle size and rounding, but large clasts were absent or rare. However, closer to the rim in the north, large clasts (part of the glacial deposits) were present, even when their tops intruded into the living floor (see **Fig. 1**). This can either be attributable to differential removal of obtrusive large clasts from the high traffic areas, or to variability in the substrate. However, the area which is devoid of large rocks coincides with an area of low artifact density (discussed below), and suggests that the clear area is the result of human behavior (see Hayden 1982; Hayden and Cannon 1982, 1983).

The process of continual removal of sediments from the floor, through sweeping, and differential removal of large clasts may also explain the basin-shaped cross section of the floor in the central area. Presumably, if the inhabitants had begun with a horizontal surface—a plausible assumption—the floor would eventually take on the shape of a bowl due to displacement and sorting of clasts in the high traffic central areas, possibly within the generation or so that each occupation episode lasted.

Floor deposits are thicker nearer the rim and contain more fine sediments resulting from less energetic activities: sleeping and relaxing, for example. More cultural debris of all kinds was found in the peripheral areas, and although discernible patterning was elusive and difficult to validate in the field stage of research, differential removal and deposition is indicated.

Thickness of Floor Deposits

Variability in thickness of floor sediments is (obviously) due to different regimes of deposition and erosion—deposition of both reworked autochthonous sediments and allochthonous sediments, and erosion due to trampling or occasional house-cleaning. For example, in the sleeping area, where, presumably, new bedding material (e.g., fir boughs) was being introduced as old material decayed, and no removal of fines occurred' for reasons explained previously, net deposition would result. Conversely, the entryway and high traffic areas would tend to be areas of net erosion. Close to the rim, we might expect to see more fine sediments and hence thicker deposits on the floor. There, fines might even trickle through the roof/rim interface and be carried downslope by gravity, unnoticed by the occupants. Larger clasts might also find their way into the living space by the same route, but they would more than likely be monitored by the inhabitants and continually removed. In this way, it is speculated, an initially steep floor/rim interface might become more gradual. In fact, there was evidence of rim slump along inside walls of HP 3 and HP 7.

To summarize, although not uniform throughout, the characteristics of floor sediments can be described in relation to their location in the housepit, as follows:

1) Those nearer the center are thin (less than 2 cm), and are composed of organically stained glacial till which has probably been reworked by trampling. Larger clasts (i.e., greater than 5–10 cm) are absent, probably due to maintenance of a comfortable living surface. Very little bone, lithic debitage or other recognizable organic refuse occurs in this area.

2) Closer to the rim, all kinds of debris increase in frequency (e.g., lithics, bone, and charcoal). The fine fraction also increases, with the inclusion of more silts, sands and decomposed organics. These sediments are

more compact and darkly stained. Moreover, floor thickness in some areas is between 5 and 10 cm.

Considering all the above factors, it is clear that a single, simple, characterization of floor sediments, for the purpose of distinguishing the floor from other strata in a housepit, will remain elusive. Overall, variability in clastic composition, coupled with variable rates of deposition, renders the search for a single definition futile. However, given a knowledge of the most important formation processes, such as intensity of activity, differential removal of certain size classes, and likelihood of differential rates of deposition, it is clearly possible to identify floor deposits in most areas. Excavators must keep in mind the depositional, erosional and turbational possibilities for each stratum being investigated, with visible changes assessed as to whether they represented real variability within a stratum or, indeed, different strata.

Whereas it is not always possible to distinguish roof from floor deposits on the basis of color or texture, other kinds of evidence proved useful. Cultural material on the floor lies horizontally. This has been observed repeatedly in excavations at Keatley Creek. Objects which appear to be standing vertically or sub-vertically, at or near the floor, can be easily attributed to roof deposits. Leftovers from the collapse of the pithouse, such as fire-cracked rock, charcoal, sticks and beams, were useful indicators of the floor/roof contact. There is a point during excavation when typical roof sediments (i.e., gravels, wood, charcoal, flakes, etc.) can be observed to "flick" off the floor when trowelled. The level at which the larger roof clasts cease to occur defines a horizontal plane. Beneath that point, far fewer of the sediments typical of the roof such as charcoal and larger lithics are found.

In sum, there are a number of criteria for determining the floor/roof boundary, some or all of which may be present in a given area.

1) Although usually subtle, and not always perceptible, color differences due to organic staining can be useful.

2) Roof sediments are in general less compact than those which have built up on the floor near the perimeter.

3) Near the perimeter of the floor, roof and floor sediments have quite similar clastic composition. Texture is a better indicator nearer the center, where the floor is mainly reworked glacial till.

4) In most places, charred roof beams and fallen posts can be assumed to lie directly on the floor. However, this may not be the case at the floor/rim interface, where airspaces, filled with fine sediments, can occur beneath the structural remains.

5) Artifacts, bone, and lithic debitage are usually found in a horizontal attitude on the floor. Articulated animal bone could only occur if it had been on the floor at the time the roof collapsed.

6) Variable quantities of fire-cracked rock and fire-reddened gravels occur in roof sediment, while (usually) less is apparent in the floor.

7) Charcoal flecks (whether from fires or roof collapse), and fire-altered rock in the roof can be seen to "flick" off the floor. This is probably due to the difference in compactness between the two deposits.

Rarely would all of the above be used in the field in one subsquare to recognize floor contexts. Likewise, it would not be prudent to employ only one. Although the characteristics of the floor/roof boundary are unique in each excavation unit, distinguishing floor from roof is made possible by the knowledge of clastic variability gained during the excavations at Keatley Creek.

The observed composition of floor stratum was made up of highly compact 10 YR 4/3 (brown/dark brown) sandy silts with 10–20% pebbles, and 30–50% granules. The floor in HP 3 was quite thin, averaging between 1 and

2 cm in depth. It would appear that prior to the last occupation (re-roofing event) the entire house (except for a small area in Sq. O) was cleared down to sterile. From this point the floor built up as occupational sediments were trampled into the sterile sub-strata. This eventually led to various forms of yellow/brown mottled floor surfaces. Superficial fire reddening was present in some areas, but it was almost always associated with sections of burned structural features. Thus this reddening probably resulted during the house burning, rather than during house occupation.

By removing the last 1–2 cm of filtered collapse deposits with a whisk broom one was able to successfully uncover numerous horizontal artifacts which indicated that one had reached the top of the floor. Common artifacts included lithic debitage of all sizes, and various retouched tools. Trachydacite was the dominant material for lithics found on the floor. Exotic materials were quite rare. This scenario may support the idea that the majority of exotic lithics found in the roof fill belong to the earlier Plateau horizon. Hammerstones, both fragmentary and whole, along with abraders were encountered in some instances. In terms of fauna, concentrations of ungulate remains as well as both articulated and disarticulated salmon bones were recovered from the living surface. In regards to excavation methodology the first 5 cm of the floor was excavated as Stratum III, level 1. Any remaining floor (which was a rare occurrence) was removed as Stratum III, level 2.

Stratum VII—Geological Substrate (sterile till)

This was a highly compact glacial till deposit with a high percent of cobbles, pebbles, and granules. It's Munsell designation was 10 YR 4/4 (dark yellowish brown). Upon reaching this stratum excavations were terminated.

Stratum VIIIa—Dump Events

This stratum was a medium compact 10 YR 3/4 (dark yellowish brown) sandy silt with 7% pebbles, and 30% granules. Stratum VIIIa was only found in Squares I and Q. It would appear that it had been deposited on a previous floor, and hence became an occupational surface. This was demonstrated in Square Q where the initial floor interfaced with the dump. At this point a section of articulated salmon was found laying on both the dump and the floor deposits. At this time we feel that this dumped material may have been swept off the floor, thus incorporating sterile and cultural materials. On the other hand, it is equally plausible that the dump is derived from pit or post construction. In either case, it was dumped near the wall, and from that point was treated as a living surface. This stratum was excavated as VIIIa, Level 1.

Stratum IX—Rim Slump (previously "IV")

This is a medium consolidated 10 YR 5/4 (yellowish brown) sandy silt with 15–25% pebbles, 10% granules, and <5% cobbles. It is only found in the southern portion of Square O, and in previously excavated neighboring squares by Gargett in 1986 and 1987. The matrix is quite high in organic content. It appears to represent rim material which slumped into the house. As a result of this process the living floor was covered over, and a new floor built up over the top of the slump. During excavations this stratum was removed as one level, (Stratum IX/Level 1).

Observed Artifact Patterning

Lithics

As might be expected, the surface stratum reflected no lithic patterning. An important observation from this layer relates to the abundance of

patinated flakes. This observation suggests slow burial. These same non-patterned but patinated observations also hold true for Stratum IIa.

Although it is difficult to predict abundance of such things as lithic waste, it seems unlikely that so little debris as that found in floor contexts, would have accumulated in HP 3 in the generation or so postulated for one pithouse occupation as estimated from its last reroofing event. Clearly, regular removal of debris from floors is in evidence. Where the garbage goes may be revealed by future, more extensive excavation. It could be that certain kinds of refuse are dealt with differently, as noted by Schiffer (1972, 1976), and Hayden and Cannon (1983) in the Maya region. The heavy, bulky, fire-cracked rock may have been heaped along the edge of the roof near the rim, as opposed to being dumped directly on the roof, but still became incorporated in the roof surface materials during and after collapse. The lighter, day-to-day floor refuse may simply have been dumped outside, near the entry-way or along the rim. Patterns of refuse disposal may be difficult to distinguish from patterns of activity in roof/surface accumulation contexts. However, presence of some tool preforms on the roof seem to argue against the possibility that they were the result of dumping. It seems much more likely that these result from manufacturing activities, and that this is an example of hypothesized activity on the roof. Such an interpretation seems supported by Spafford's more detailed analysis of roof artifacts (Vol. I, Chap. 14).

In terms of field observations on the roof, the following details are of interest. Stratum IIb contains the highest percentage of lithic materials. These artifacts are fairly "clean" in appearance, thus indicating rapid burial. Impressionistically, flake size appears substantially larger in Stratum IIb than in any other roof stratum. In looking at the patterning of flakes only two concentrations were encountered. In the southwest (Sq. O), roof fill (IIb) had higher percentages of lithic materials than usual. By far, the largest

concentration of lithics was in the north (Sq. U), in the Stratum IIb roof fill. Over 300 flakes were recovered in two of the southwestern sub-squares. Other than these two concentrations, lithic patterning was not observed in the field (Vol. I, Chap. 14). Based on the fact that these two areas also have quite high lithic densities on their immediate floors, it seems plausible that the high densities in the roof fill deposit reflect rebuilding events which incorporated materials from the activity areas associated with the aforementioned floor deposits. This scenario indicates that these portions of the house were related to intensive lithic activities over the long term occupations of this house structure. Stratum IIc displayed no lithic patterning whatsoever, except for the occurrence of levels containing unusually large horizontal flakes. It is highly plausible that these flakes represent lithic materials, which were stored in the roof rafters. Observations during excavation indicated the presence of these flakes between 10 and 15 cm above the floor. This pattern is not seen across the house, but was recognized in some instances, particularly in the northeast corner of the housepit.

In regards to the floor, a detailed analysis of lithic artifacts is provided in Volume II, Chapter 11. In addition, field observations indicated that higher than usual concentrations of flakes were found in the north in Squares VV, V, U, and in the south in Square O. Moderate numbers of flakes were seen along the west wall of the house, and moderate to low percentages were found along the east wall. For the most part these frequencies declined as one moved towards the center of the house. Cores were randomly scattered across the floor, and rarely corresponded with areas high in flaked stone. In terms of hammerstones, we found concentrations of four whole and two fragmentary pieces in the northeast of the house (Sq.'s Q and II). These hammerstones were not found in areas high in lithic debitage. Due to the

lack of correspondence of flakes, cores, and hammerstones, one must be cautious in defining any lithic manufacturing areas.

Housepit 3 produced an abundance of lithic tools relating to game hunting and processing. The non-diagnostic materials included spall tools for hide scraping, a worn cobble (presumably for hide softening), retouched unifaces and utilized flakes, as well as a palette fragment which could have been used for preparing pigments for hunting ceremonies as indicated by Romanoff (1992), although this interpretation is speculative. These materials were found in living floor contexts, and combined with the diagnostics discussed below seem to suggest a special focus on hunting for the last occupants.

In terms of projectile points (presented in detail in Vol. I, Chap. 3), HP 3 contains far more than any other excavated house. This occurrence would appear to back up the tentative assumption that this structure was inhabited by a hunter. By far the most dominant point style is that of the Kamloops side-notched point (1,200–200 BP). Altogether, 79 points of this type, were recovered during excavation (1986–89 inclusive). Thirteen of these points were recovered from floor contexts (thus dating the last house occupation), one from a post-hole (thus dating this depression), three from pit feature HP 3—89:2 (thus dating this storage structure), and 62 from various roof deposits (reflecting various rebuilding episodes during the Kamloops horizon).

Three interesting Kamloops side-notched points were found in the deposits of HP 3. These were very well made, equilateral, concave based points with very small auxiliary notches skillfully removed from the tang margins immediately below the hafting notch (Figure 4). This stylistic variation has not been noted on any other Kamloops horizon point from the Canadian Plateau (M. Rousseau, personal communication 1987). It is interpreted as being the stylistic mark of an individual knapper. The

presence of several such points in surface and roof deposits is an argument for the use of the rooftop, either as a workshop or as a dump for refuse. However, the maker may have lived in the house before the last rebuilding episode.

Other point types which were encountered were of Plateau horizon style (2,400–1,200 BP). Altogether 17 Plateau style points were recovered from this Housepit (1986–89 inclusive). Three small Plateau corner-notched points (1,500–1,200 BP) were recovered from floor contexts, and fourteen from various roof deposits (reflecting previous rebuilding episodes). One lone Shuswap horizon (3,500–2,400 BP) point was recovered from the HP 3 rim. This may indicate initial use of this housepit during Shuswap times.

Abraders were found near the periphery of the floor in the east (Sq.'s Q, I), north (Sq.'s V, U, EK), and west (Sq.'s X, N). Thus, they appear to be evenly distributed around the housepit. Tentatively this may indicate individual work stations. Iannone does not believe that these areas reflect separate domestic groups, but individual families most likely did utilize separate work stations for distinct activities. In 1987, more ochre was recovered from the northern portion of the floor. Fewer artifacts, and less refuse in general, were recovered from the central portion of the floor, although the post-cranial skeleton of a juvenile dog was found there.

Interestingly, a shaft smoother was found in a concentration of projectile points and lithic debitage in the south, while most of the ochre was found in the north, where a piece of carved antler (possibly a gaming piece) was found. It is tempting to think that more non-subsistence, possibly ceremonial and artistic activities were carried on in the northern part of the house, or that it was reserved for specialized families, while more mundane activities occurred on the other side of the house. However, it is also possible that the northern part of the house was reserved for sleeping or other sedentary activities. The south, it is thought, should have been the warmest part of the

house, and may therefore have been the preferred area, thus being assigned to the highest ranking individual or family.

Status Items

Excavation of HP 3 produced moderate amounts of status/wealth items, the majority of which came from the northern portion of the house. Altogether, this area of the house contained one small bead (in the roof), one piece of carved antler, the working edge of a nephrite adze (in the roof), two bowl sections from one or two soapstone pipes (in the roof), two sections of incised bone (in the roof—one is perforated to form a pendant, the other may also be a pendant fragment or possibly a gaming piece), one perforated clam shell pendant (in the roof), and one large piece of graphite (on the floor). The southern portion of the house produced far less in terms of status items, but did contain one perforated bone fragment (in the roof), one possible soapstone pipe fragment (in the roof), and one small fragment of native copper (in the roof).

Faunal

In general faunal remains were absent in Stratum I, and Sub-stratum IIa. Stratum IIb exhibited low frequencies of ungulate remains, with little or no salmon bone present. This pattern is reflected in the Stratum IIc deposit as well. The floor (Stratum III) contained moderate frequencies of both ungulate and salmon bone. For the most part, the highest concentration of faunal remains were in the north and western portions of the house, (near the wall) with the east showing comparatively less. Detailed distributions of faunal remains in the roof and floor are discussed in Volume II, Chapter 7.

Importantly, in the eastern side of the house, a few fully articulated sections of salmon were recovered from the floor area adjacent to the wall. This data indicate an area where little or no trampling took place, possibly a bench area. In fact, this observation is backed up by the presence of

numerous sections of burned bench plank which were found near the floor/rim interface throughout the northeast portion of the house (**Fig. 1**). It also probably indicates very late deposition of these salmon, since even if they were in a low traffic zone one would not expect them to remain articulated for a great deal of time. Numerous sections of partially articulated salmon were also recovered near the wall in the western house zone. Again this indicates an area of low trampling action, possibly a bench area or other form of activity area which limited the movement of persons.

Features and Post-holes

Features

Only three features were discovered during the 1989 excavation season. Feature 87-I-16-1 from Square II was a continuation of Feature 16-1 from Square I. This feature turned out to be a storage pit, (110 x 72 cm in width, 57 cm in depth) with a few salmon vertebrae being recovered. In terms of dating this feature, it was felt that is was related to an earlier Plateau occupation. This was due to the presence of a Plateau point found in the initial 1987 excavations in Square I.

Feature 89:1 (Sq. M) was a moderate sized (42 x 45 cm in width, 23 cm in depth), basin-shaped pit. The contents included two worked antler pieces, faunal remains (salmon and mammal), and a few flakes. This feature appears to be a storage pit. In terms of dating this feature it was noted that it was probably in use prior to the last roof construction. This assessment was based on the fact that a post-hole which contained a section of burnt post was dug into this feature. This basically rules out any chance of this being an active feature during the time of the final occupation.

Feature 89:2 (Sq. MM) (116 x 104 cm in width, 74 cm in depth) was a large, deep, bowl-shaped storage pit. This pit contained both ungulate and salmon

bones, as well as some ochre. No floor overlay this feature, and it appears as though it was not completely filled in, as the top 20 cm contained Stratum IIc filtered collapse materials. It is most probable that this was a storage pit which was in use during the final occupation of the house. Three Kamloops points found in the pit fill support this interpretation. Pit feature 87-F was 44 cm deep and contained 1,200 salmon vertebrae plus some freshwater shell in its bottom (see Vol. I, Chap. 10, Appendix III). This was a remarkable concentration.

Post Holes and Roof Construction

An examination of the plan of post-holes excavated in HP 3 (**Fig. 1**) reveals evidence for repeated occupation episodes and the likelihood that successive occupations employed similar construction methods. Four obvious clusters of postholes are visible in the north, east, south, and west of HP 3. It is clear from excavations that they were not all used during the last occupation. Differences in size, and the different depths to which they extend below the floor argue against contemporary use. Furthermore, many were deliberately filled with large rocks and other sediment. Some of the fill was darkly stained near the top, suggesting that they were either filled with floor sediments or became stained deeply by organics penetrating from above. Some contained bone, lithics and other refuse near the top. Five were found to contain the unburnt, rotten remains of wood with grain standing vertically, suggesting that these were the remains of posts left in the ground or broken off after house collapse. One, approximately 30 cm long and 10 cm in diameter, and two other, less substantial examples were found. Interestingly, with one exception, each was found in a different posthole cluster, suggesting that they may have been in use during the last occupation.

Two important large post-holes were encountered in Square M. These two post-holes were side by side, about 8 cm from each other. The eastern

hole went down 45 cm into till, whereas the western hole reached only 39 cm into the substrate. The most important factor concerning those two post-holes is that they contained burned remnants of structural posts. Thus they probably relate to the very last occupation of the house. Other small (10 x 10 cm) post-holes were encountered as one neared the floor/rim interface. It is probable that these reflect the small posts utilized as bench supports during the occupation of the house.

The limit of detectable roof sediments and the orientation and size of the charred wood (likely roof beams) recovered (see Fig. 3) suggests that construction methods and architecture details may be inferred (see Vol. II, Chaps. 2 and 15). The pattern of burned wood fragments in HP 3 indicates that some parts of the roof support structure may have collapsed intact (or nearly so). Ethnographically, pithouses were entered through holes in conical roofs. However, Richards and Rousseau (1987) have observed side entrances archaeologically. Elongation of the area which had no discernible roof sediments points to the possibility of an entrance in the westernmost part of the perimeter, where the rim is low. However, the excavation of more housepits, and the continuation of work in HP 3 is necessary to determine if in fact a side entrance was used in this or other cases.

At present, it appears that the ethnographic cross-section of a Lillooet house published by Teit (1900) is likely to represent the prehistoric construction pattern of medium-sized housepits at Keatley Creek.

Hearths

Only one small (50 cm x 60 cm) central hearth was encountered in HP 3. It is thus postulated that this feature was utilized by all occupants of the house.

Communal Areas

The central area of the house yielded fewer artifacts, less cultural debris, fewer and thinner fire-reddened areas, only a few, small, shallow features, and no storage features. There seem to be at least three possibilities for this lack of evidence for cultural activity:

1) this area was little used;
2) high traffic and/or high maintenance continually stripped the area of sediments and debris;
3) high traffic inhibited its use for cooking, storage, or other activities.

It seems illogical that such a (relatively) large area could have been devoid of activity to the extent that no cultural debris accumulated there. If the central area saw little activity, it might then have been a logical place for storage, sleeping, or other non-disruptive activity, and would still have resulted in more cultural debris being incorporated in the sediments. Thus, it would seem that high traffic is most likely responsible. This may have resulted from a central roof entrance.

Communal activities, such as dancing and other rituals and maintenance of the area for such activities, could result in the differential removal of all kinds of cultural sediments from the area, and the reduced likelihood of finding food debris, storage features and other personal or familial correlatives. If the hypothesis that several families co-existed in a pithouse is correct, such an area may have been kept clear of individual families' possessions and food remains, much in the way that central communal areas were kept clear at !Kung open-air encampments, and among other tribal groups such as the Mandan and Huron. Stryd (1973) argues that the central area was one of central importance because it contained the hearth. However, at Keatley Creek hearths are rarely encountered in the house center.

Summary and Conclusions

Some promising observations were made in the excavations at Keatley Creek. The ability to distinguish discrete depositional contexts in the stratigraphically complicated housepits continues to be refined. Opening a large area within a housepit has produced evidence that different areas of both floor and roof may have been used for different purposes—a major first step for investigations of social inequality through spatial analysis.

Postulated roof-top activity areas received some interpretive support, with clearly different sediments excavated from the north and the south. Segregation of, at least, refuse on the roof appears to have been the case. That activities occurred on the roof seems to be indicated.

Housepit 3 has played a major role in understanding site formation processes, as well as artifact patterning. It has especially lent itself to the fuller understanding of the roof deposits. It is hoped that this will eventually allow for a better conceptualization of how artifacts move within the roof.

References

Hayden, Brian

1982 Recognizing intact Iroquoian domestic refuse: The Draper Case. *Ontario Archaeology* 38:47-50.

Hayden, Brian, and Aubrey Cannon

1982 The Corporate Group as an Archaeological Unit. *Journal of Anthropological Archaeology* 1:132-158.

Hayden, Brian, and Aubrey Cannon

1983 Where the garbage goes: Refuse disposal in the Maya Highlands. *Journal of Anthropological Archaeology* 2:117–163.

Hayden, Brian, and Rob Gargett

1987 Roofs, Rims, Rooms and Resources. Paper presented at the Canadian Archaeological Association Annual Conference, April 1987. Calgary.

Richards, Thomas, and Michael Rousseau

1987 *Late Prehistoric Cultural Horizons on the Canadian Plateau.* Simon Fraser University, Department of Archaeology, Publication No. 16, Burnaby, British Columbia.

Romanoff, Steven

1992 The Cultural Ecology of Hunting and Potlatches among the Lillooet Indians. In B. Hayden (Ed.) *A Complex Culture of the British Columbia Plateau,* pp. 470–505. University of British Columbia Press, Vancouver.

Schiffer, Michael B.

1972 Archaeological Context and Systemic Context. *American Antiquity* 37:156–165.

Schiffer, Michael B.

1976 *Behavioral Archaeology.* Academic Press, New York.

Stryd, Arnoud H.

1973 The later prehistory of the Lillooet area, British Columbia. Ph.D. Dissertation, University of Calgary.

Teit, James A.

1900 The Thompson Indians. *American Museum of Natural History Memoirs* 2:4.

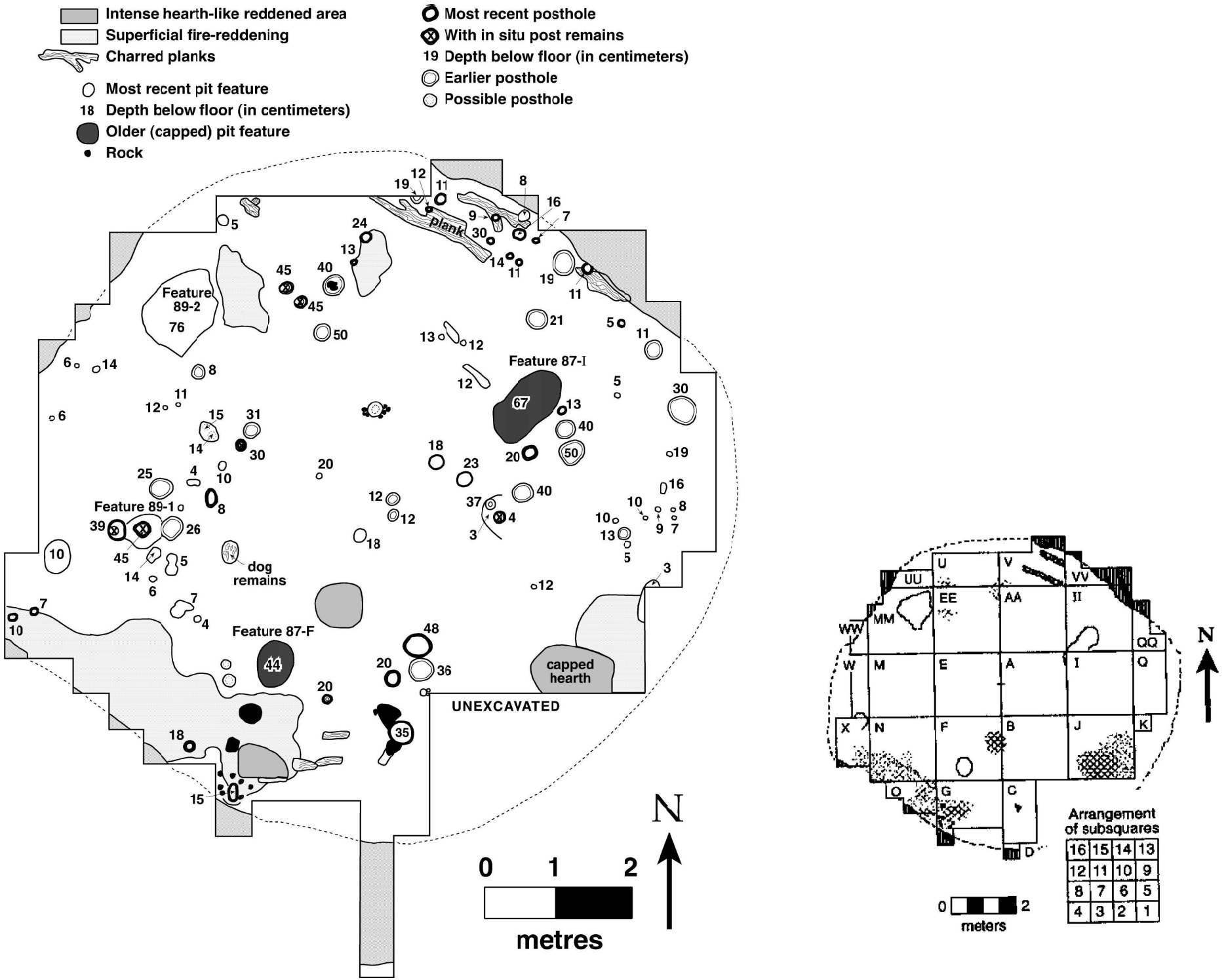
Figures

Figure 1: Plan view of the HP 3 excavation. Individual grid squares are shown in the inset.

Figure 2: Wall profiles of Housepit 3.

Figure 3: A plan view of charred beams found in Housepit 3.

Figure 4: Kamloops style projectile points from HP 3 with arrows pointing to unique notching.



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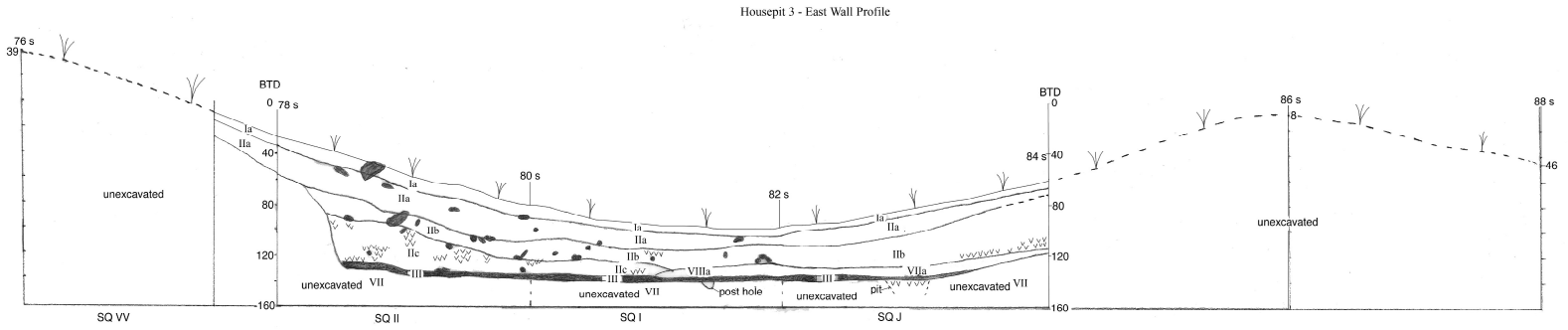

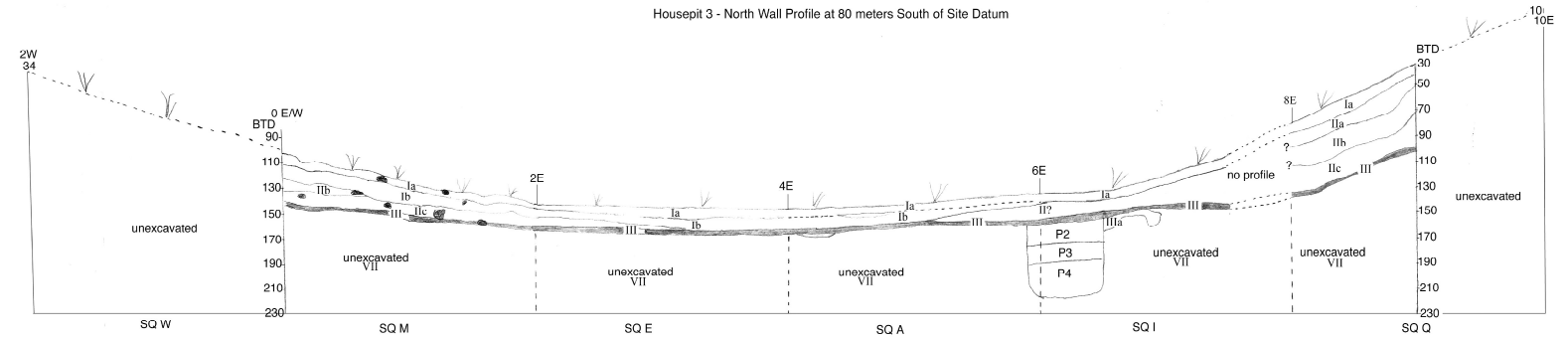

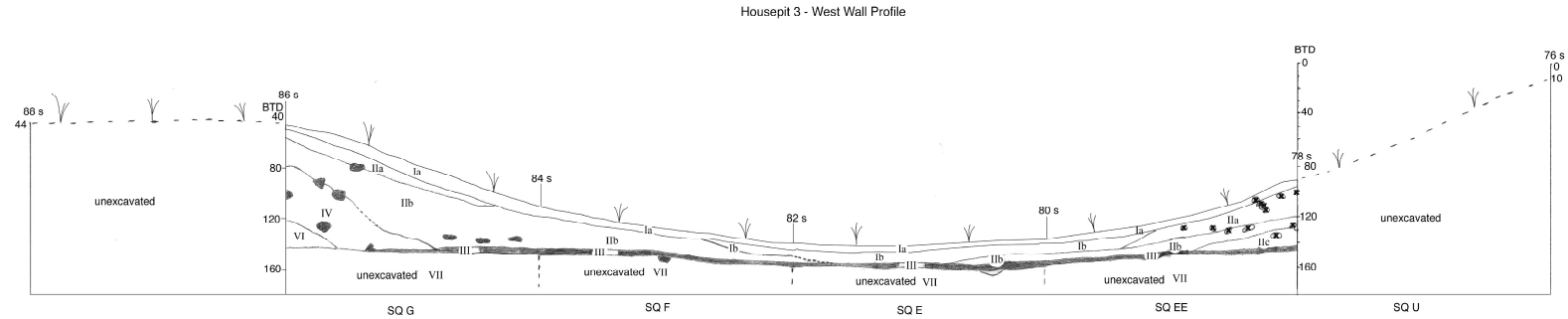

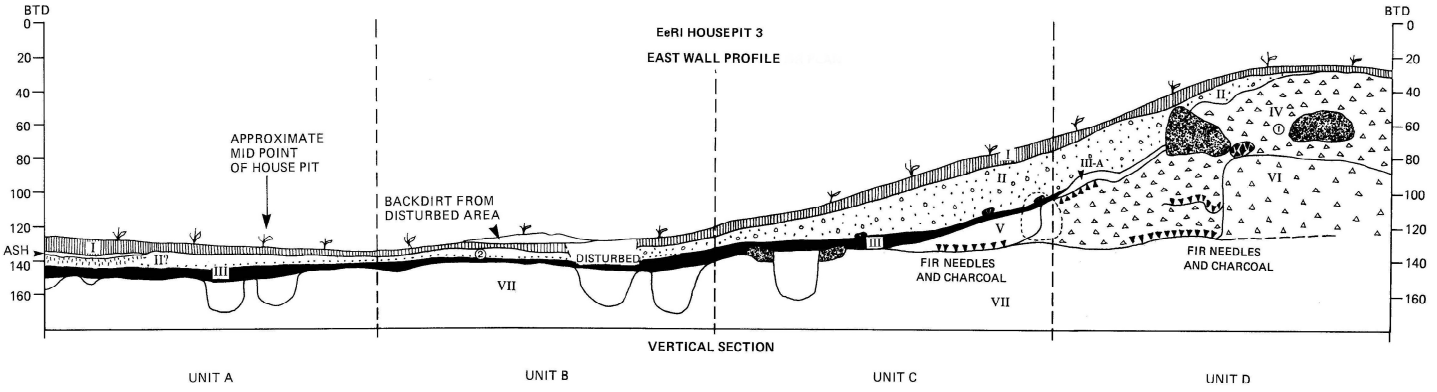

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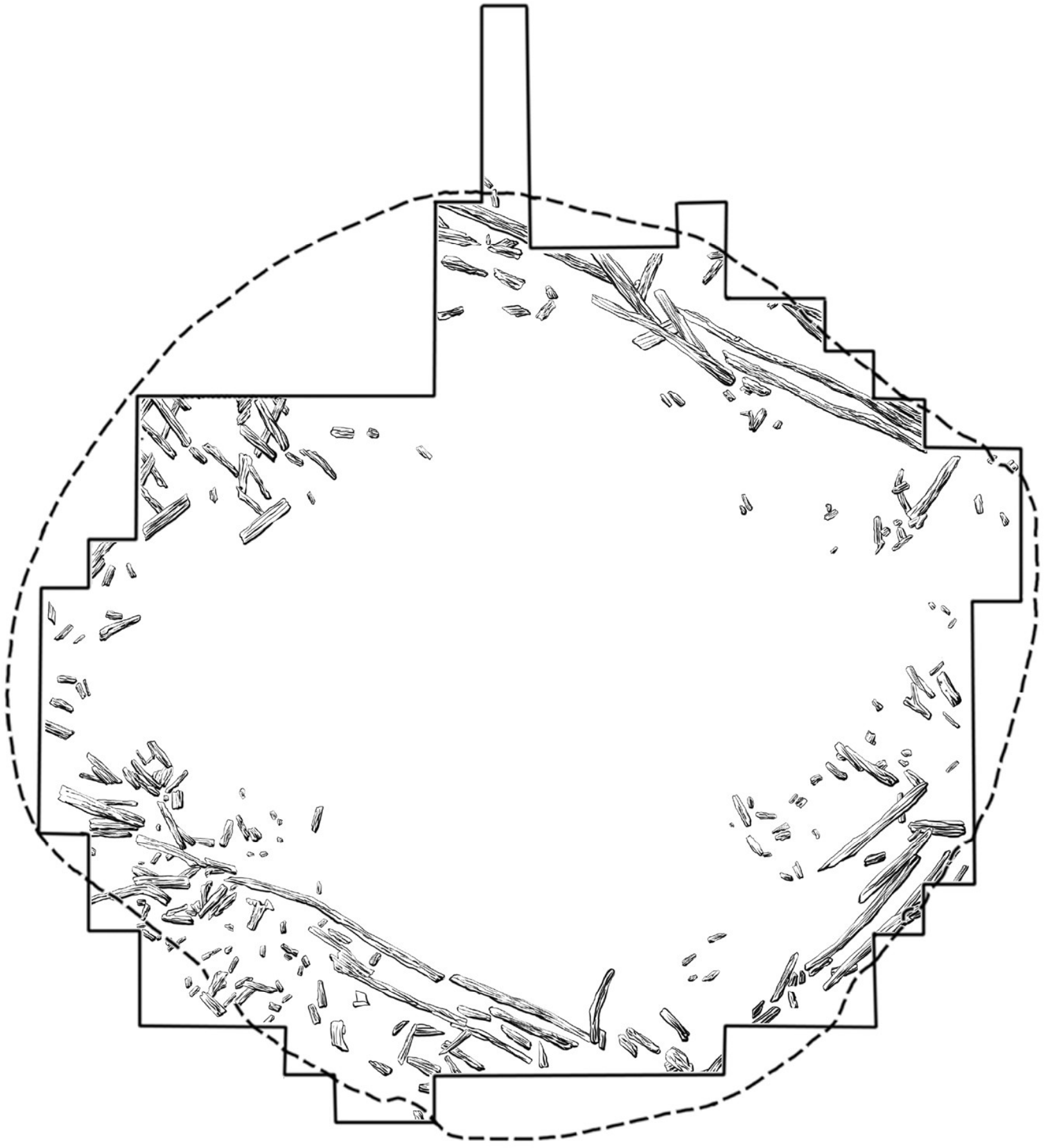


Figure 3. A plan view of charred beams found in Housepit 3.

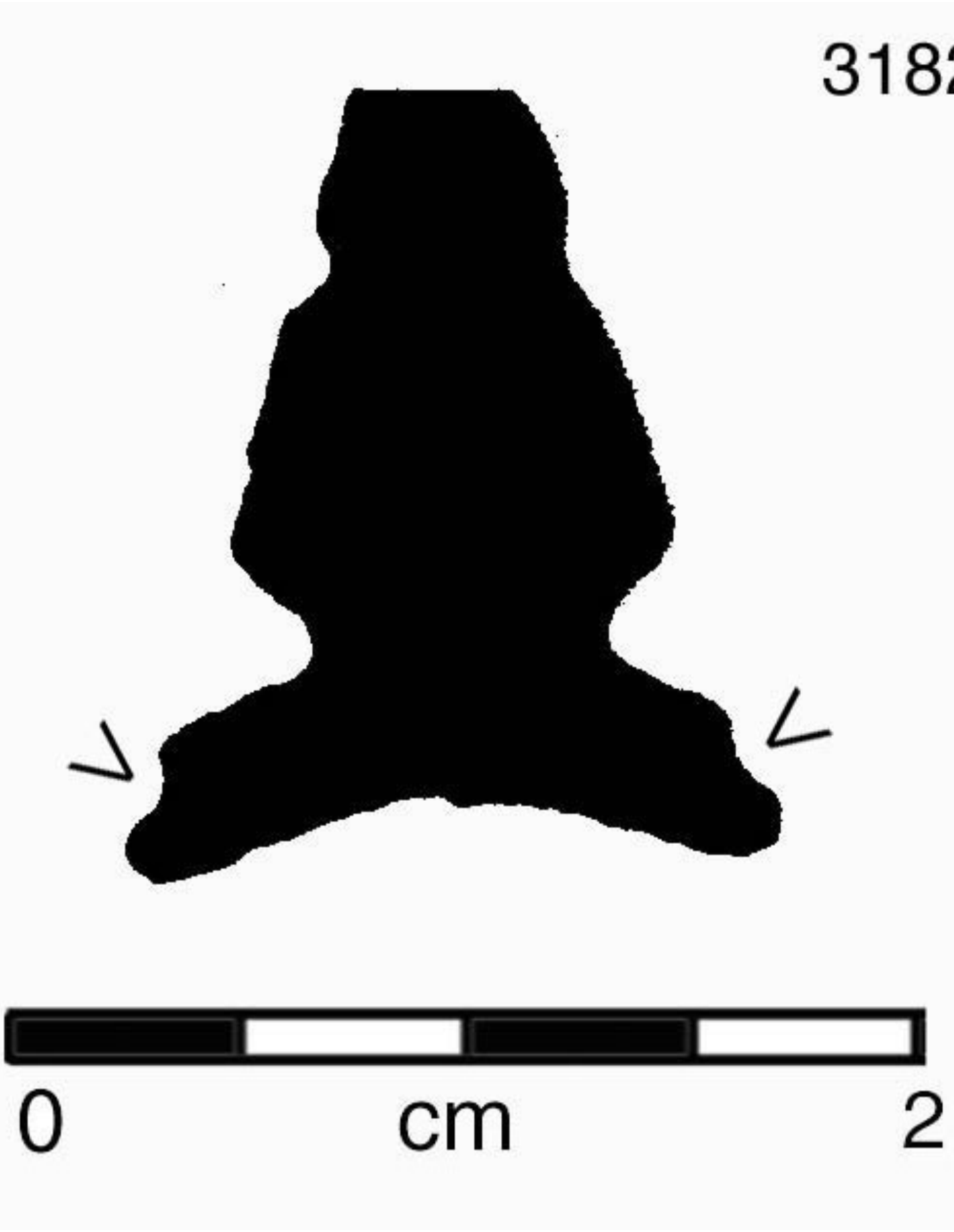


Figure 4. Kamloops style projectile points from HP 3 with arrows pointing to unique notching.

Excavation of Housepit 7

Diana Alexander

Introduction

This report briefly summarizes the results of excavations in HP 7. This was one of the largest housepits at Keatley Creek, measuring 17 m from rim crest to rim crest, and it is situated on the northeastern periphery of the site core at the base of a slope leading up to terrace 1 (Vol. III, Preface, **Fig. 1**). Discussion focuses on the interpretation of strata and features uncovered during the 1989 field season (May 8 to August 14). Since this report was written prior to any analysis of the 1989 collections and without a detailed examination of all the field notes, the following should be viewed as an impressionistic overview. I have attempted to relate the result of the previous three seasons of excavation at HP 7 to the 1989 results.

Purpose and Extent of 1989 Excavations

The goal of the 1989 project was to complete excavations of the floor of HP 7. Prior to the 1989 field season, 120.75 square meters of the housepit were excavated (**Fig. 1**), primarily in the center of the housepit and in the rim deposits along the eastern edge. In 1989, an additional 44 square meters were excavated in the area between the housepit wall and the previously excavated area in the center of the housepit.

Except for a few subsquares (50 x 50 cm units) along the extreme outer edge, all of the housepit floor was excavated by the end of the 1989 season (**Fig. 2**). I am confident that all major cache pits and hearths have been exposed, as well as most of the postholes used to support the roof structure and any internal house features.

Methodology

The housepit was covered by a four square meter grid of squares which were consecutively designated with a letter of the alphabet as they were excavated. In 1989 we began excavations in Squares JJ to WW and continued work in the previously designated Squares of U and Y.

Each square was divided into 16 subsquares, 50 cm on a side, numbered from 1 to 16. Each subsquare was excavated separately using a trowel and dustpan, and the soil was screened through 1/4 inch mesh. All bone, debitage, and judgmental samples of the larger floral remains were collected and bagged by stratum and level for each subsquare. One liter flotation samples were collected from the floor of four subsquares in each square to acquire a systematic sample of debitage, fauna, and flora lost through the use of the large screen mesh. Flotation samples were also collected from each of the fill units in the pit features and from most of the larger postholes.

Detailed profiles were drawn of each of the walls of the squares and the exposed outer edges of the excavation. A rough sketch of one wall of each subsquare was also made prior to excavation, to indicate natural strata and arbitrary excavation levels.

As in previous years, the deposits were excavated according to visible stratigraphic zones or strata. In the 1989 excavation, the most commonly encountered strata were: surface (I), roof (V), floor (II), rim spoil (XIII), rim slump (XVI), and dump material (XXVI). Surface was generally removed as one level, irrespective of its thickness, although in the beginning, it was sometimes divided into 5 cm arbitrary levels contoured to the surface. The floor was excavated in 5 cm arbitrary levels contoured to the floor surface.

Rim spoil, rim slump, and dump material were not divided into arbitrary levels.

Initially, in the 1989 season, all roof deposits were excavated in three arbitrary levels. The top 5 cm of the roof (contoured to the roof surface) was excavated as Level 1 and designated "roof surface." The bottom 5 cm (contoured to the underlying floor stratum) was excavated as Level 3 and designated "roof bottom." The matrix between the top and bottom 5 cm levels, no matter what thickness, was excavated as Level 2 and designated "roof fill."

After two to three weeks of excavation it became obvious that there was considerable variation within the roof stratum (see discussion of roof stratum). In excavating most of the roof stratum as a single level (Level 2—"roof fill"), we felt we were losing considerable information about how the roof had been constructed and eventually collapsed. Moreover, we came to the conclusion that the top of the roof stratum was not actually formed when the roof initially collapsed, but was colluvium deposited subsequent to the collapse. Therefore, Level 1 did not represent the surface of the roof where the inhabitants of the housepit originally conducted their activities and consequently Level 1 could not be expected to reflect activity areas on the roof—the reason for excavating "roof surface" as a separate 5 cm level. However, we also wanted the level and strata designation scheme to be consistent with out initial work and, as far as we could determine, the work of previous excavators in HP 7. As a result, we maintained the same stratum and level designation, but added the designation "layer" to distinguish between the different matrices that we could see in the roof. The nature and number of layers varied between squares.

The result was a system whereby, the top 5 cm and bottom 5 cm of the roof were still excavated and bagged separately with the designated Level 1 (roof surface) and Level 3 (roof bottom). However, in addition they were also given a layer designation (**Fig. 3**). Level 2—roof fill was subdivided into different layers with each layer being excavated and bagged separately. In most cases the top 5 cm of the layer which appeared most likely to represent the initial roof collapse was also bagged separately. All bags from Level 2 were labeled "roof fill" no matter what layer they came from.

The following is a schematic drawing to illustrate the excavation scheme:

This roof would be excavated and labeled accordingly:

- Stratum V—Level 1 (0-5 cm) roof surface—layer 1
- Stratum V—Level 2 (5-10 cm) roof fill— layer 1
- Stratum V—Level 2 (10-15 cm) roof fill — layer 2
- Stratum V—Level 2 (15-30 cm) roof fill — layer 2
- Stratum V—Level 2 (30-35 cm) roof fill — layer 3
- Stratum V—Level 3 (35-40 cm) roof bottom— layer 3

This scheme was used in all the 1989 excavations except in Square NN. In this square the stratigraphy was much more complex and to simplify excavations, each separately excavated level was given a different number and the layer designations added after the square was complete. Therefore, the only difference to the above example would be that the levels in Square NN would be numbered one to six rather than one to three.

Provenience for the artifacts and other cultural remains from the site is according to stratum, level, and layer within each subsquare. A plan view of the cultural remains was only made for the floor deposits, with each 5 cm

level of the floor having a separate plan (in a few subsquares, all levels of the floor are plotted on one plan view). All flakes, tools, bone, charcoal, and features were plotted on these plan views, as well as any fire-altered rocks or unaltered rocks greater than 4 cm in maximum dimension. The stratigraphic cross-sections can be seen in **Figure 4**.

Housepit Excavation Results

Surface Stratum

In examining the field notes and reports from previous years, it became obvious that the definition of surface has varied considerably according to the excavator and year of excavation. Three separate definitions of surface seem to exist:

1) the modern A horizon, i.e., the littermat, including any vegetation, roots, and loose humic soil;
2) the colluvial deposits, i.e., the littermat and all of the deposits below it which contain 5–15% clasts (greater than granule size) and appear to lie over a matrix with a much higher clast content that is usually interpreted as the initial roof collapse, and;
3) the modern surface, which is the definition we used in 1989 and describe in detail below.

In 1989, we defined surface as the modern surface or the littermat, and soil deposited since the last occupation in the housepit. These deposits are typically a dark grayish brown sandy loam with ca. 8–15% pebbles and less than 5% cobbles. Most clasts are angular and appear to be fire-altered. Although aeolian deposition is probably responsible for some of this soil build up, the size of the clasts suggests that most of the surface is the result

of colluvial deposition. The main agents causing soil movement into the housepit are probably slopewash and gravity bringing soil into the center of the depression from the rim as well as disturbance by cattle and horses which use the area to graze. The soil is typically very loose near the surface where roots and other organic matter is abundant, and on the steeper slopes where the deposits are less stable. Closer to the center of the housepit, and with depth, the surface becomes more compact. These deposits are rarely more than 12 cm, or less than 5 cm, thick.

Little or no charcoal or faunal material is found in the surface stratum, nor is there any evidence of fire-reddening. Presumably, the weathering and movement of the deposits has destroyed any evidence of these remains. Few flakes or stone tools are found in the Surface, with 5–15 being typical of a 5 cm level. Similar frequencies of fire-altered rock are encountered. In general the frequency of artifacts and rocks is greater on the gentler slopes. Many of the stone artifacts are patinated, especially those exposed to weathering in the loose surface deposits.

The surface is distinguished from the underlying layer 1 of the roof Stratum by the slightly lighter color, fewer clasts, and the presence of a post-housepit abandonment occupation in layer 1.

The deposition of aeolian and colluvial deposits in the housepits at the site has probably accelerated since Euro-Canadian contact. The introduction of cattle and horses, and the corresponding decrease in wild grasses due to overgrazing (Tisdale 1947, Brayshaw 1970), would no doubt have increased erosion on the site as a result of more surface exposure and more animal activity. In some of the housepits (e.g., HP 101), recent surface deposition has been extensive.

Given the origin of the surface deposits, it is unlikely that any of the cultural material found in these deposits are in their original context (except refuse from transitory campers that used housepit depressions after the structures had been abandoned and the roofs collapsed). The spatial patterning of the artifacts is more likely to reflect the random effects of natural depositional processes than cultural patterning.

Roof Stratum

The thickness, texture, and cultural content of the roof deposits vary considerably with depth within any given square, as well as between squares. This variation may be accounted for by five factors:

(1) gravity and animal activity moving roof deposits from higher to lower slopes after the initial collapse of the pithouse roof;

(2) temporary, post-collapse occupations in the housepit depression;

(3) the regularity and speed of the initial roof collapse before, during, and after burning;

(4) the thickness and composition of the roofing materials;

(5) "pulling down" roof soil towards the base of the roof prior to structure abandonment and burning (see Vol. I, Chap. 17); and,

(6) cultural activities that took place on the roof during the pithouse occupation.

The following section of the report will attempt to explain the variability recognized in the roof stratum according to these factors.

This discussion will also clarify why I think that any cultural patterning that may have resulted from cultural activities on the roof or from storage of materials in the roof rafters during the pithouse occupation would have

been largely destroyed by the roof collapse and subsequent cultural and natural events. Moreover, inconsistencies in the method of excavating the roof stratum will have further disguised any such potential cultural patterning in the roof. Despite these limitations, Spafford (Vol. I, Chap. 14) has been able to document some very general roof activity areas.

In general, the thickest roof deposits and the greatest number of recognizable layers exist in the roof stratum in the northeast corner of the housepit. The thinnest roof deposits, which often lack any clear layering, occur in the center of the housepit and in the southwest corner. Overall, the deposits are thicker along the eastern edge of the housepit where the wall was cut into the hill slope, and at the base of the slope formed by the wall and rim of the housepit.

Where layering is visible in the roof stratum, three layers are generally recognized. For the purpose of this discussion, these layers are called the post-collapse layer, the initial roof collapse layer, and the filtered roof collapse layer. The post-collapse layer occurs directly under the surface stratum and is characterized by a relatively fine texture and the presence of a post-abandonment occupation. This layer covers the coarse textured initial roof collapse layer which frequently contains burnt roof beams and other roofing material toward its bottom. Finally, the relatively finely textured filtered roof collapse layer may occur just above the floor deposits.

Post-Collapse Layer

The post-collapse layer (generally called layer 1) is very similar to the surface stratum as defined earlier in this report. In general, this layer is a firm, dark grayish brown sandy loam with ca. 10–15% pebbles, and ca. 5%

cobbles. Most clasts are angular and appear to be fire-altered. In many squares, the differences between the surface stratum and the post-collapse layer are very subtle with the layer being only slightly darker, firmer, and more coarsely textured. In some parts of the housepit, especially closer to the rim and along the eastern side, there is a thin (ca. 2–3 cm) dark layer at the boundary between the two strata. This dark layer may be a horizon suggesting a more stable surface at one time, perhaps before Euro-Canadians introduced livestock onto the site.

In all the 1989 excavations (except Sq. U), the surface stratum was excavated separately from the post-collapse layer. The top 5 cm of the post-collapse layer was designated "roof surface" and excavated and bagged separately from underlying roof deposits. In some cases, especially in the western portion of the housepit, the post-collapse layer was only ca. 5 cm thick and the entire layer was excavated as the roof surface. In most parts of the housepit, this layer was more than 5 cm thick and the lower portion was excavated as part of the roof fill but kept separate from underlying layers.

In general, the post-collapse layer is like the surface stratum in terms of texture, color, and cultural content, with little or no charcoal and bone, and low frequencies of artifacts (some with patination) and fire altered rock. Based on this evidence, I suggest that, for the most part, the cultural material in the post-collapse layer has the same history of deposition as the surface stratum, i.e., colluvial redeposition of materials from the rim of the housepit many years after the initial roof collapse and housepit abandonment. However, the top 5 cm of this layer also contain evidence of an occupation which occurred in the housepit depression after much of this colluvial deposition took place.

Evidence for this post-housepit abandonment occupation (PHAO) was found in the center and on the lower slopes of the housepit. This evidence included:

(1) relatively high frequencies of fire-altered rock (ca. 15–20%) and lithics;

(2) high frequencies of unburnt, broken, and cut deer bones;

(3) occasional fish vertebra;

(4) localized concentrations of fire altered rock with charcoal staining and flecking, and;

(5) two pit features excavated down to sterile deposits from the top of the post-collapse layer.

Both pit features contained large quantities of charcoal and fire altered rock overlying fire-reddened soil suggesting use as either a hearth or, more likely, a roasting oven. These ovens were typically used to cook large quantities of plant foods, indicating the use of the site as a base camp for plant collection and processing. The tools and deer bone suggest deer hunting and processing activities.

It is possible that the PHAO represents an outdoor activity area used by the occupants of a nearby pithouse while the village was still in use. However, all of the radiocarbon dates from the housepit occupations predate 1,000 BP, while the presence of a historic metal point from the PHAO indicates an early historic date for this occupation. The presence of some fish bone and large quantities of deer bone in good condition also suggests a relatively recent date for the PHAO, since bone, especially fish species and unweathered mammal bone, is uncommon in the older roof

deposits. This good bone preservation may also have been the result of quick burial by colluvial deposition stimulated by historic livestock activity.

The temporal and artifactual evidence suggests the PHAO was an early historic deer and plant processing base camp. Some form of temporary lodge shelter would be expected at such a base camp and it is possible that such a structure may have been built near, or in, the housepit depression. However, given the excavation techniques employed (i.e., no plan view of cultural material) for these deposits, it is unlikely that evidence for a lodge would be detected. No postholes were detected in this stratum.

In summary, the patterning of cultural material in the post-collapse layer should reflect: 1) the random distribution of materials produced by colluvial deposition, and; 2) the activities conducted in the housepit during the PHAO. It is extremely unlikely that the patterning has any relationship to the activities conducted on the surface of the roof during the pithouse occupation.

Inital Roof Collapse Layer

The initial roof collapse layer is very different from the post-collapse layer, with more clasts, charcoal, fire altered rock, bone, and lithics. Typically, the initial roof collapse layer is a loosely compacted, very dark grayish brown sandy loam. The percentage of different sized clasts can vary considerably, even within a square, with granules comprising 20–30%, pebbles 15–40%, and cobbles 5–10%. However, in all cases, the frequencies are higher than those found in the adjacent post-collapse layer. Moreover, the size and frequency of charcoal fragments is greater, especially in the lower portions of the initial roof collapse layer. In the southeast corner of the housepit,

burnt beams and other roofing material from the pithouse superstructure are common in these lower deposits. A few large beam fragments are also scattered in other parts of the housepit. Fire-altered rock is common and many of the granules and pebbles appear to be fire-altered. Lithic frequencies are higher and, unlike the surface stratum and post-collapse layer, these artifacts are not patinated, thus suggesting a rapid burial.

The nature and content of these deposits leave little doubt that they represent the beam and roof debris from the last occupation of the pithouse. Ethnographic accounts describe a roof comprised of beams and branches covered with soil (Vol. I, Chap. 17; Vol. II, Chap. 2). Fire-altered rock, lithics, and bone from the cleaning of hearths and floors inside the house were also expected to be dumped on the roof. The archaeological evidence supports this model with burnt beams (some covered with smaller poles and branches) at the bottom of the layer and generally high, but uneven distributions of lithics, bone, and fire altered rock.

If any of the roof deposits can be expected to contain cultural material reflecting the *in situ* activities which took place on the roof during the pithouse occupation, that deposit would be the top 5 cm of the initial roof collapse layer. However, if the cultural material from the top 5 cm of the initial roof collapse layer can be examined separately, I doubt that these deposits have enough integrity to reveal roof top activity areas in any greater detail than documented by Spafford (Vol. I, Chap. 14). Photographs of abandoned pithouses from the early historic period illustrate that the roof collapses unevenly. For example, entire roof segments from the door to the rim may fall in before adjoining sections, parts of the earthen roof and support poles may fall in before the beams collapse, and soil covering the

central portion of the roof may move down or be pulled down the slope of the roof before falling into the housepit depression. Burnt beams and fire-reddened soil in the initial roof collapse layer clearly indicate that HP 7 was burned and did not just collapse through weathering as indicated in the photographs. On the other hand, HP 7 may have been subject to weathering for many years prior to burning. Even if the pithouse was burned immediately after abandonment, one would not expect the entire structure to burn evenly and collapse as a single unit. In fact the roof deposits from HP 7 suggest anything but an orderly collapse of the roof.

The initial roof collapse layer varies in thickness from as little as 5 cm in the center of the housepit to as much as 30 cm at the base of the wall or rim (**Fig. 4**). This configuration suggests that most of the soil deposited on the roof had moved to (or was dumped at) the base of the roof slope prior to the pithouse collapse, and that these deposits then slumped into the depression accumulating at the base of the slope. In some localities, the initial roof collapse deposits seem to be mounded while the later colluvial deposits have filled in the surrounding depressions. These mounds may have been produced by roof deposits falling through holes in the roof structure prior to the final collapse. Although charred beams are common in the southeast corner of the housepit, they only occur sporadically in other areas. The paucity of beams and charred post bases in some areas suggests the possibility that some beams and posts were removed from the structure for reuse prior to burning; such a practice would also have heavily disturbed the integrity of the deposits. All this evidence suggests that any patterning of cultural material in the top 5 cm of the initial roof collapse deposits that may have resulted from activities undertaken on the roof during occupation

would have been heavily disturbed (it should also be remembered that the roof deposits appear to contain artifacts from earlier occupations).

Based on the same evidence it is unlikely that artifact storage in the rafters of the pithouse would retain their original spatial distribution during the roof collapse. However, in those parts of the roof deposits where burnt beams are common, the beams usually lie directly above the floor deposits and are surrounded by fire-reddened soil. This evidence suggests that these sections of roof collapsed largely intact and burned after collapse. In these localities the material left on the roof surface or stored in the rafters may be expected to be found more or less in their original locations at the top and bottom of the initial roof collapse layer. In most cases, the bottom 5 cm of this layer were excavated separately and designated as roof bottom. Exceptions occur where a filtered roof collapse layer is found under the initial roof collapse layer and the bottom 5 cm of the former was excavated as roof bottom.

Filtered Roof Collapse Layer

The filtered roof collapse layer only occurs in a few areas of the housepit and only at the base of the wall or rim. It is found above the floor deposits but below the initial roof collapse and resembles the latter except that it contains fewer large clasts. The filtered roof collapse is interpreted to be roof material which has filtered through the beams prior to the final collapse of the roof. These deposits may reflect the use of finer textured soil in the lower part of the roof deposits. It often occurs in areas where rim slump overrides the floor deposits suggesting the possibility that it

originates from deposits which slumped into the housepit from the area where the roof and wall met.

The numbering of the roof layers varies from one square to another, depending on the number of visible layers in the square. For example, in the southeast corner of the housepit, the initial roof collapse layer was sometimes divided into layers 2 and 3 to distinguish between those deposits which contained many beams and fire-reddening and those which lacked these characteristics. In the northeast corner of the housepit, the initial roof collapse layer is called layer 3b. In this case, layer 3a and layer 1 both appear to be post-collapse roof deposits or colluvium, although layer 3a has a higher silt content. Layer 2 resembles the initial roof collapse layer, but given its location between two colluvial deposits, it seems to be best interpreted as redeposited initial roof collapse that slumped into the housepit from higher elevations.

Rim Slump Stratum

The rim slump stratum is interpreted as redeposited rim spoil. It may occur either under the surface stratum and above the initial roof collapse llapse, or between the initial roof collapse and the floor stratum. In all cases, the rim slump is found near the outer edge of the housepit floor. The texture and cultural content is similar to rim spoil with high frequencies of fire-altered rock, bone, lithics, charcoal, and floral remains. The main difference seems to be that the rim slump is more compact than rim spoil, although still loosely compacted and powdery compared to other strata. Rim slump deposits located above the roof deposits are only found along the eastern wall and are assumed to have been dislodged from their original

position on higher slopes by gravity and animal activity. Rim slump deposits under the roof are probably the results of the unconsolidated rim spoil falling into the housepit from its original position on the edge of the pithouse, under the roof. In this case, both gravity and the initial collapse of the roof are seen as causal factors for the soil movement.

Rim Spoil Stratum

Very little of the rim spoil was excavated in 1989 since the floor deposits ended where the rim spoil began. For a detailed description of the nature and origin of the stratum, the reader is referred to Chapter 6 of this volume.

Floor Stratum

The floor deposits also vary considerably in thickness, content, and texture depending on their location in the housepit. This variation has been produced by six possible factors:

(1) the nature of the underlying sterile matrix;

(2) cultural activities which took place inside the pithouse, including the construction, use, and burial of hearths and storage pits;

(3) cleaning practices of the pithouse dwellers;

(4) the possible use of elevated wooden benches around the perimeter of the pithouse;

(5) the excavation and removal of earlier floor deposits prior to pithouse reconstruction, and;

(6) the excavation or re-excavation of storage pits as well as their filling with surrounding floor soil; and,

(7) the use of dump material to produce a level living surface.

In the following discussion I will attempt to show how these factors may have produced the variations seen in the floor deposits. The discussion will also point out how many of the subfloor features and some of the deeper floor deposits represent activities from earlier occupations of the housepit.

In most parts of HP 7, the floor stratum consisted of a dark grayish brown sandy loam, ca. 3–5 cm thick. The ease of recognizing the top of the floor deposits depended on similarities between the floor and overlying deposits. In most cases, the texture, color, or compaction of the overlying deposits was sufficiently different to isolate the floor deposits with relative ease, although the nature of these differences could vary even between adjoining subsquares. Difficulties commonly arose where the overlying deposits were relatively fine textured, where the infilling of pit or post features produced unusually loose and coarsely textured floor deposits, or where the floor thinned at the western edge of the housepit. Except in those localities where hearths occurred, charcoal chunks, fire altered rock, and cobbles were rare in the floor deposits. Lithics and bones displayed clustered distributions reflecting activity areas inside the pithouse (Vol. II, Chaps. 7 and 11). In addition to soil characteristics, three types of artifactual evidence are commonly associated with floors and were used to distinguish them from overlying strata:

(1) burnt roof beams immediately above the floor in the roof deposits **(Fig. 5**);
(2) large, horizontally aligned lithics at the top of the floor, and;
(3) the presence of fish bones, rarely found in the roof deposits but common in the floor stratum.

For the most part, the floor deposits appear to constitute an accumulation surface representing a single occupation. This occupation would include all the activities that took place in the pithouse subsequent to the last roof construction. Based on ethnographic evidence, these activities may have included 20 to 30 years of seasonal reuse (Vol. I, Chap. 17; Vol. II, Chap. 2) of the pithouse by a group of families of varying size and composition (this assumes that the floor was cleared down to sterile prior to each roof construction). Almost all of the projectile points found on the floor are Kamloops in style which is consistent with the radiocarbon date of 1,080 ± 70 BP (SFU 1002) derived from a burnt beam and the concept that the floor represents a single occupation (Vol. I, Chap. 2).

However, along the eastern edge of the housepit where benches have been excavated into the hillside, there are floor deposits which appear to date from an earlier occupation. These floor deposits are compact, laminated with dark organic lenses and sterile-like deposits, and occur below the more typical floor deposits. The lithics from the lower floors are different in that exotics are more common, debitage occurs in higher densities, many lithics are covered with a white patina, and, based on initial impressions, the tool forms are somewhat different from those in the other floor deposits. A Plateau point (Square LL—Ssq. 9) from these floor deposits supports the concept that these deposits predate the last occupation.

Many of the postholes, hearths, and storage pits also date to an earlier occupation (**Fig. 2**). A number of the large fire-reddened areas, interpreted as hearths, are under floor deposits which contain no evidence

of charcoal or fire-altered rock concentrations, thus indicating that the "hearth" was removed before the last occupation. Similarly, most postholes are under the floor deposits and predate the Kamloops occupation. In fact, almost all of the small postholes along the eastern side of the housepit, typically interpreted as bench supports, are under the Kamloops floor. Many of the eight large storage pits (greater than 50 cm deep and 50 cm wide) found inside the housepit were filled in prior to the deposition of the Kamloops floor. The four largest storage pits in the northwest corner contain Plateau points and one also produced a Shuswap point. Moreover some of the storage pits had a hearth (in one case with a Kamloops point) built over the pits.

Time constraints prohibited examination of the distribution of postholes in any detail. Ideally, postholes which are clearly below the floor deposits and associated with earlier occupations should be examined separately from Kamloops age postholes. Taking all the postholes as a single data set, I am left with the following impressions:

(1) the large postholes (greater than 20 cm deep) tend to cluster in four areas (roughly Sq.'s JJ, J, B, and Z) and are ca. 2–2.5 m from the wall of the housepit;

(2) one set of the smaller postholes cluster along the edge of the earth benches, within 1 m. of the wall;

(3) most of the other small postholes cluster near the large postholes, and;

(4) few large or small postholes occur near the center of the housepit.

This evidence suggests that the pithouse was constructed in a pattern similar to that seen in the ethnographic record, with four main support beams and

an open general activity area in the center. For a more detailed reconstruction, see Volume II, Chapter 15. The doorway may have been located in the center of the roof since no side entrance was located. Many of the small postholes close to the east wall are associated with the early floor deposits; they may have been used to support a relatively narrow bench platform in this area. More recent benches may have been wider with small post supports set close to the main beams. Other evidence used to support the idea of a wooden bench includes the remains of wooden planks and the presence of large lithics and bones in the floor deposits at the edge of the floor, as well as "lines" of small debitage which appear as though they had fallen between planks to the floor.

For the most part, the large pits and hearths are in either the northwest or southwest corners within 2 m of the wall. This evidence suggests that the western half of the housepit was heavily used for cooking and storage and perhaps that a bench was not constructed in this area. Most of the pits contained large quantities of salmon bone near the bottom indicating a food storage function. However, two of the large pits in the northwest corner each contain the remains of five or more dogs at the bottom suggesting they were also used as a disposal location for dog remains, and in particular, dog skulls. The intentional burial of dog remains in pits (and the placement of a single dog skull in the center of the house floor) indicates a possible ritualistic importance for these animals (see Vol. II, Chap. 10).

Since the eastern half of the housepit was excavated into the hillside, the eastern margin of the housepit was easily recognized by the presence of a sterile wall. However, the western edge was more difficult to define since the sterile deposits ran horizontally under the rim and floor deposits.

Therefore, the western edge of the housepit, as shown on the floor plan, was delineated as the area where the floor deposits clearly ended or became very difficult to recognize and/or where the rim spoil began.

Dump Material Stratum

In the northwest corner of the housepit, the sterile subfloor matrix dips lower than the surrounding area, unlike other parts of the housepit where the sterile deposits rise slightly as they approach the wall. In the same area, large mounds of soil were dumped over the sterile deposits and, in some cases, over the floor deposits. The dip in the sterile deposits is interpreted as the edge of an earlier housepit depression that was intersected by the original excavation of HP 7. The dumps are interpreted as soil placed over the dip to make the floor surface level with the rest of the housepit floor or to raise the perimeter of the floor up under bench areas.

The dump material varies from sterile-like, gravely deposits to charcoal-rich deposits, possibly from a hearth cleaning. In most places, the floor deposits can be clearly seen above or between these dumping events.

Lochnore Occupation

Below the floor stratum in the southwest corner and under the northern rim are the remains of a Lochnore occupation in a matrix comprised largely of aeolian silt. This material is believed to be the intact remains of an earlier occupation surface. In **Figure 6**, I have tried to illustrate the relationship between the soil deposits which existed on the site prior to the excavation of HP 7 and the configuration of the original housepit excavation. Prior to construction of HP 7, I believe the stratigraphy of the site consisted of a Lochnore occupation in largely aeolian silts, lying

over a gravely till that covered thick silty clay deposits, that, in turn, covered a series of gravely till deposits. The housepit excavation cut through these deposits removing all of the Lochnore occupation except for that portion in the southwest corner and under the northern rim. This activity also produced a subfloor matrix which varies from gravels in the east and extreme west, to clays in the west-central portions (I strongly doubt that the clay represents, as suggested by one excavator, an artificially created dance floor).

The Lochnore component has produced about. four Lochnore points. Similar components have been found under rim deposits in HP 5 together with numerous microblades. One Shuswap point was also recovered from a pit found under rim stratum and dump material along the northern edge of HP 7. Altogether, this evidence suggests the possibility that the remains of a Lochnore housepit or lodge exist below HP 7 deposits in the northwest corner.

References

Brayshaw, T. C.

1970 The Dry Forests of Southern British Columbia. *Syesis* 3:17-43.

Tisdale,

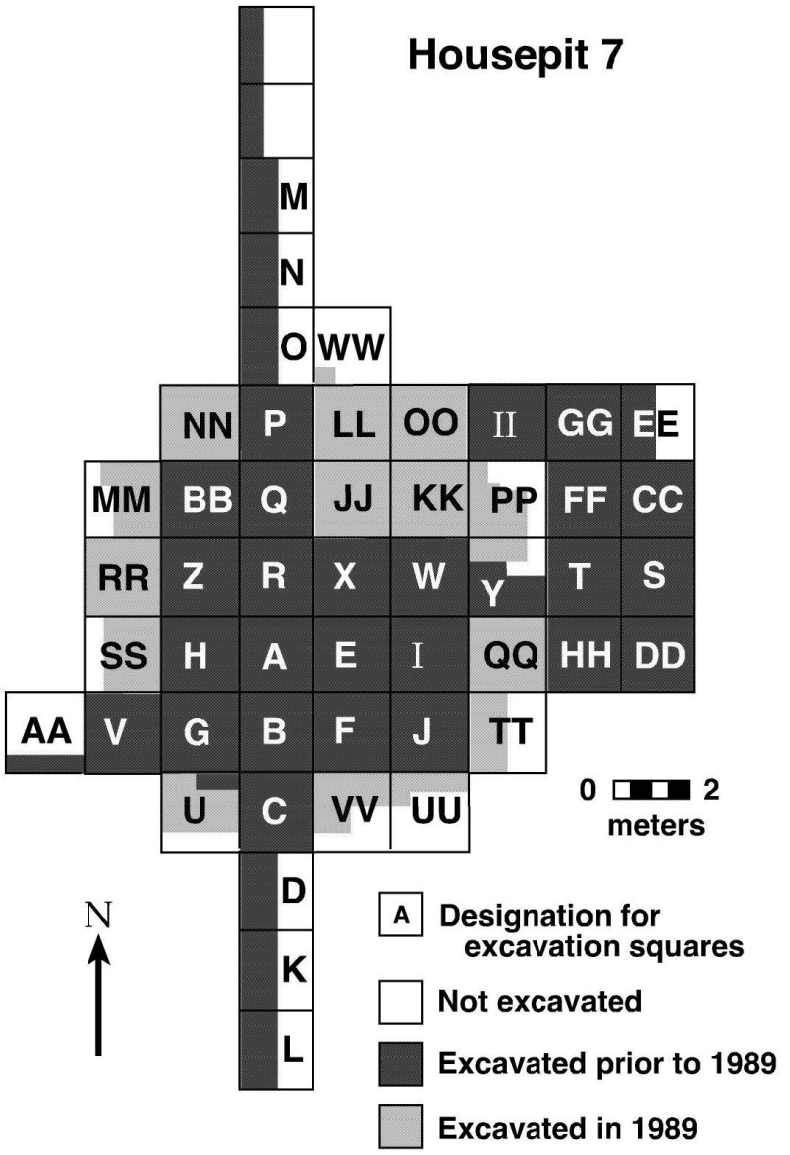
1947 The Grasslands of the Southern Interior of British Columbia. *Ecology* 28:346-383

Figures

Figure 1: (A) Square designations of HP 7 and areas excavated by year. (B) Square designations and corresponding structural features.

Figure 2: The overall floor plan of HP 7.

Figure 1. (A) Square designations of HP 7 and areas excavated by year. (B) Square designations and corresponding structural features.



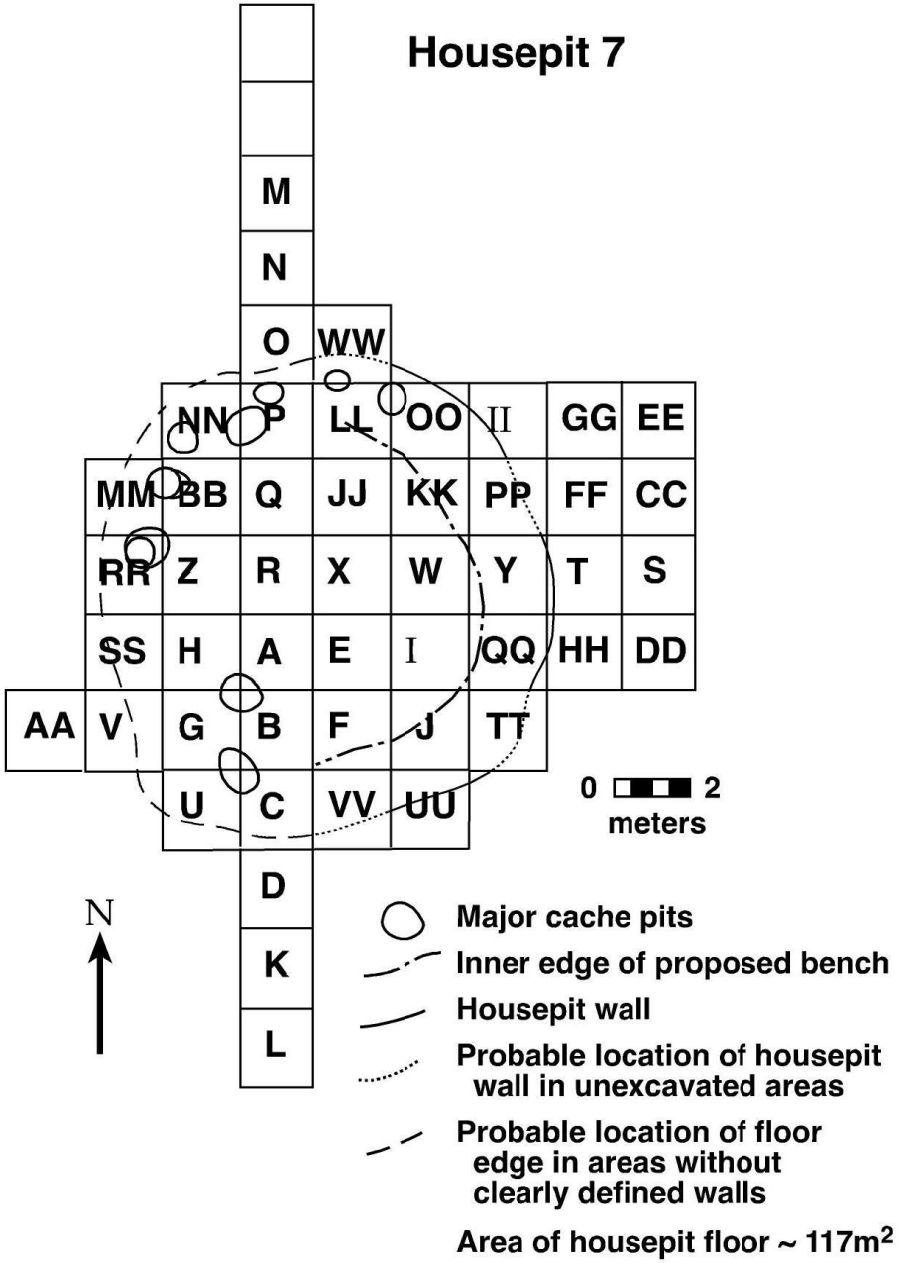


Figure 2. The overall floor plan of HP 7.

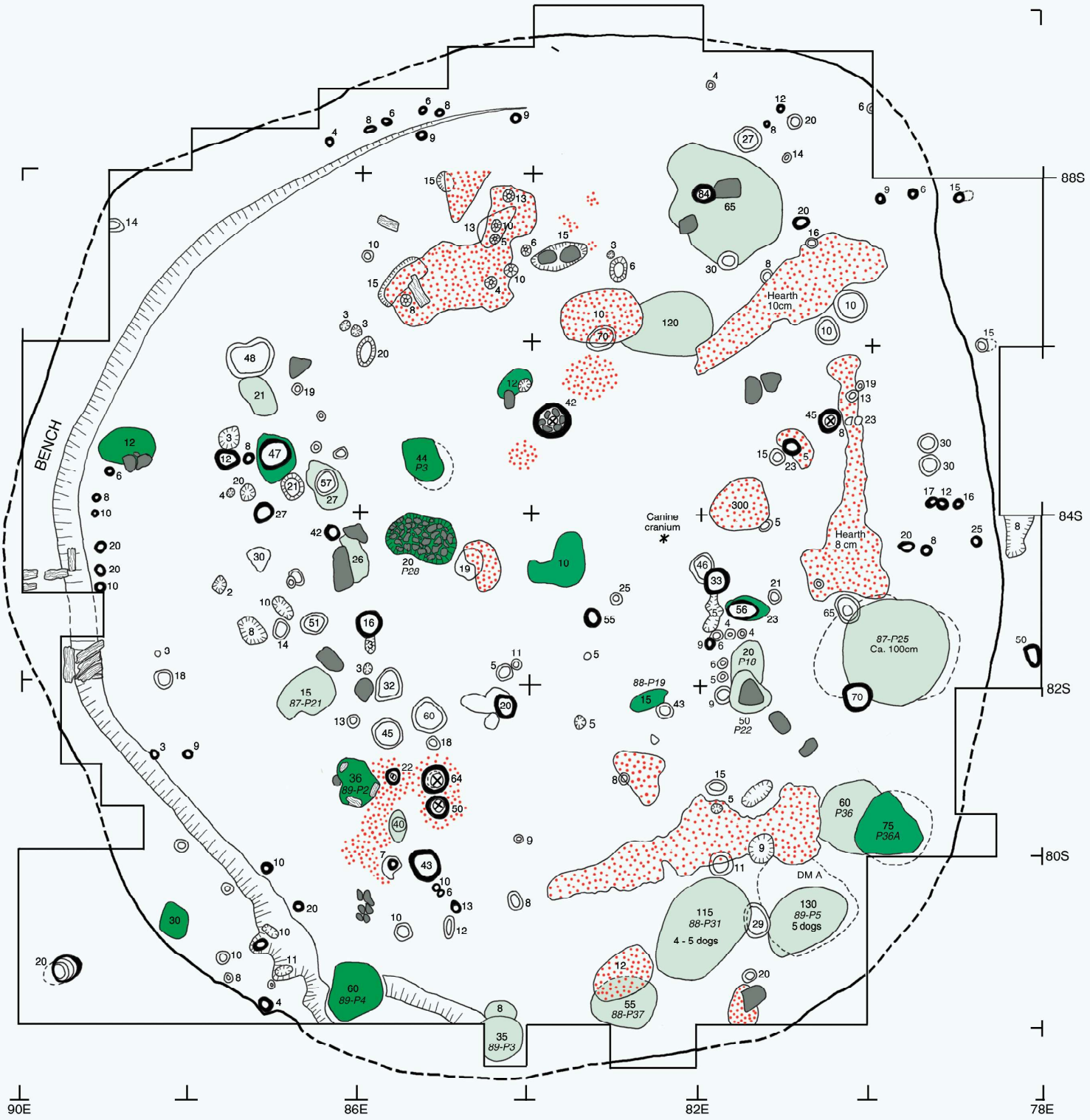
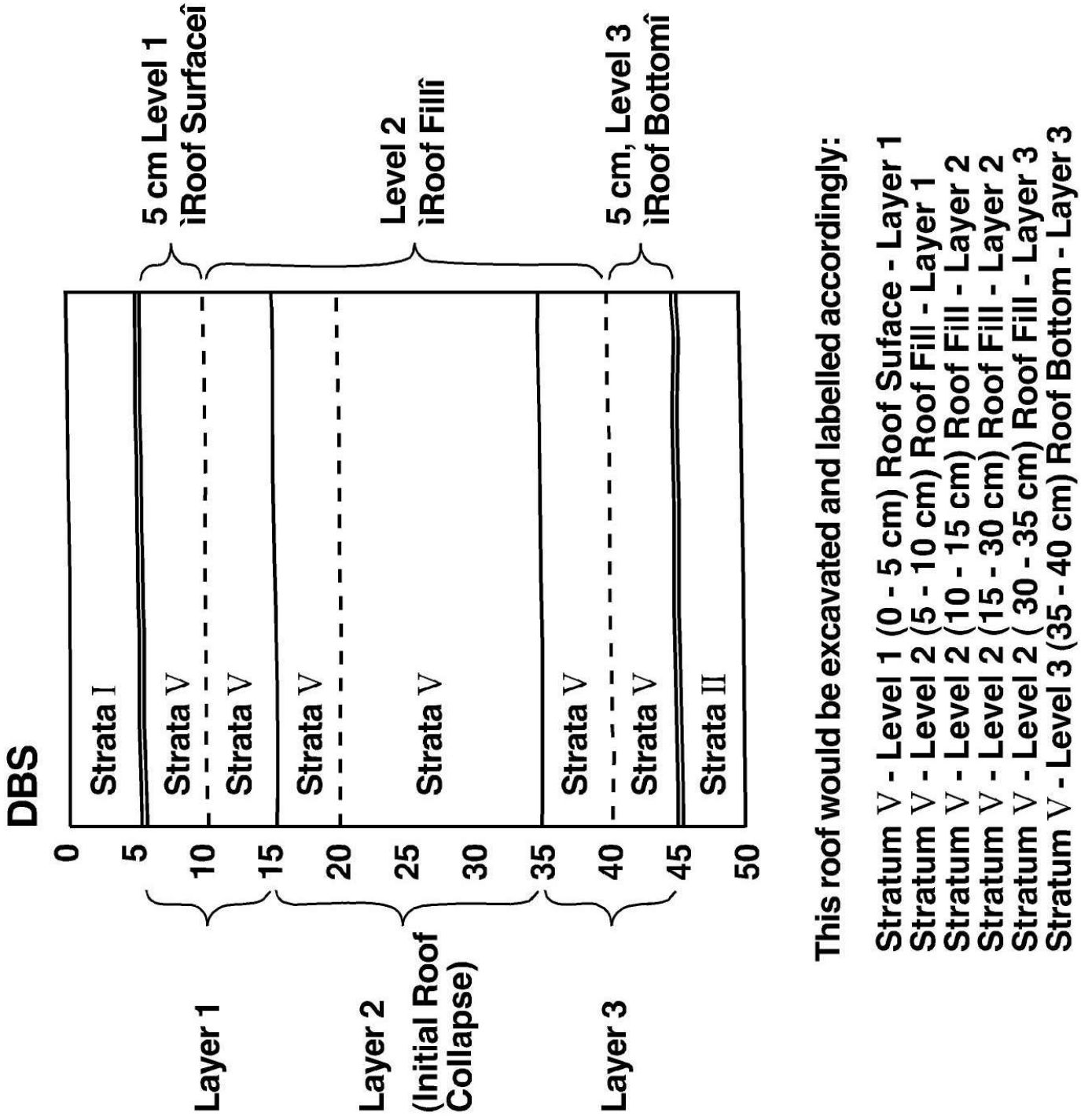


Figure 3. The recording system of strata, levels, and layers used in 1989.



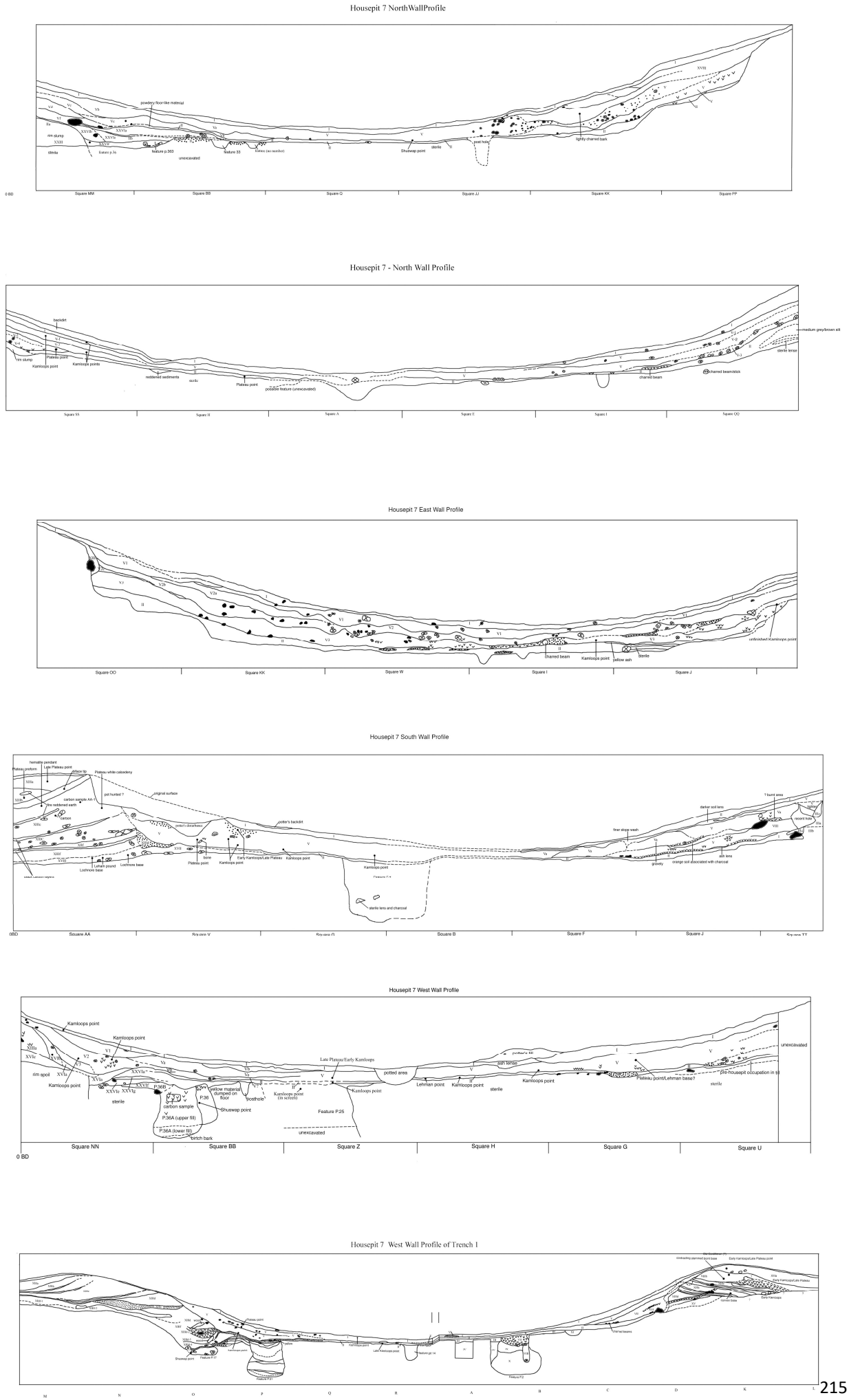
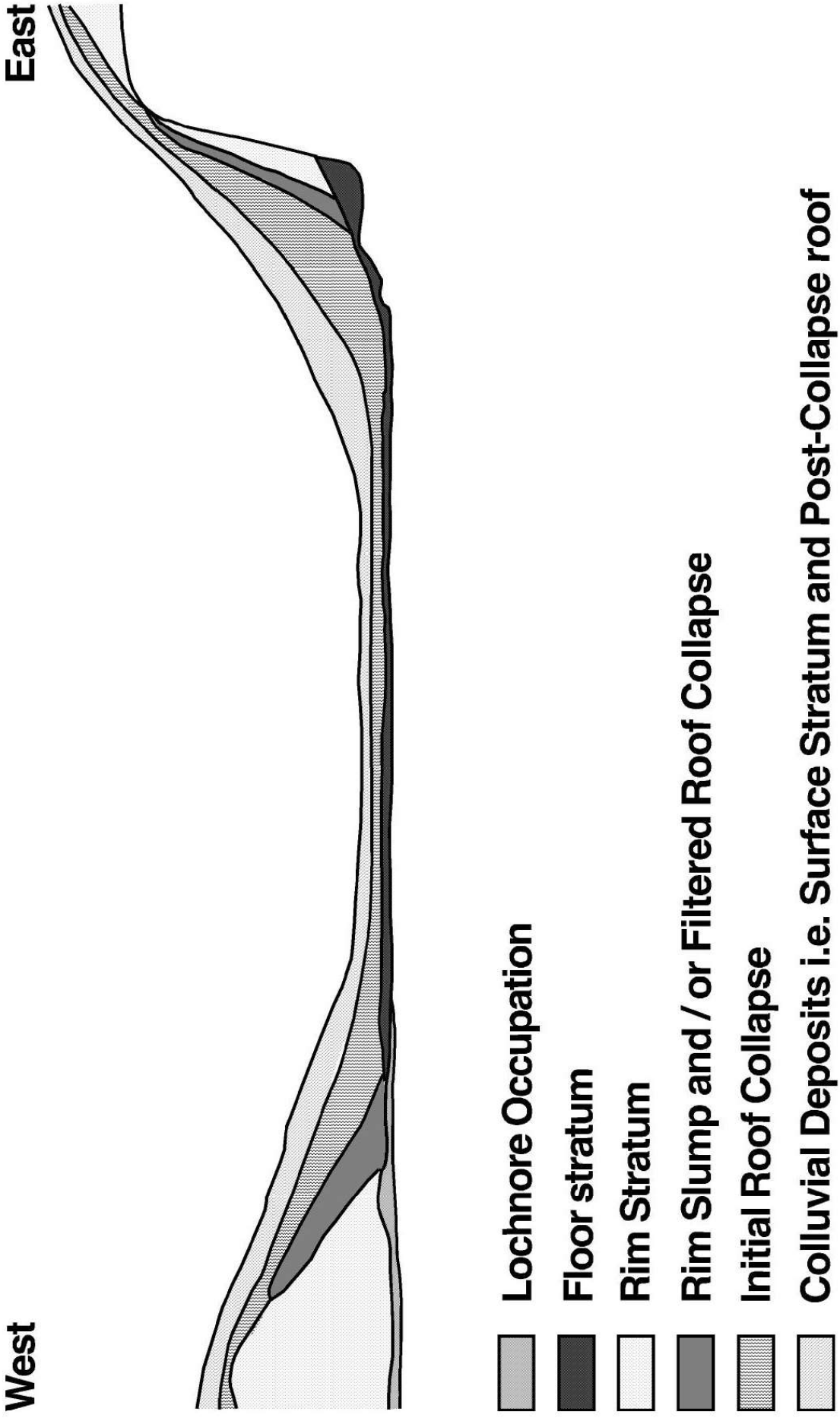


Figure 4. Stratigraphic cross-sections for HP 7.

Figure 5. A charred roof beam lying at the interface of roof and floor deposits in HP 7. The north arrow lies on sterile till, while the darker floor deposits can be seen continuing under the lighter roof deposits in the section immediately to the left of the excavated subsquare.

Figure 6. An idealized view of the suggested relationship between the earlier Lochnore occupation deposits and the HP 7 occupation deposits.



Housepit 7 Wall and Rim Excavations

Robert J. Muir

Introduction

During the 1987 and 1988 field seasons, excavations of the rim and walls of Housepit 7 (HP 7) were undertaken. The objectives of these excavations were to develop an understanding of:

1. housepit rim formation processes;
2. housepit roof construction;
3. roof deposit development; and
4. the occupational and construction history of HP 7.

This chapter presents a summary of excavations undertaken of the east wall and rim, conducted in 1988, as well as a series of trench excavations through the northern and southern portions of the house rim, undertaken in 1987.

This report was prepared prior to detailed analyses of artifacts recovered during excavation. Detailed information regarding lithic, faunal, and botanical remains can be found elsewhere (Vol. I, Chaps. 3, 9, 10, 14, and 16).

The East Wall Excavations

In order to better understand the processes involved in rim formation and the deposition of roof collapse material, we considered it essential to excavate several full sequences of rim deposits as well as to extensively excavate portions of the walls where major roof beams abutted house rims. Thus extensive excavations of the east rim of HP 7 were conducted during the 1988 season and test trenches were placed in the north, south, and west

rims. The east rim of HP 7 was chosen for extensive excavation because it is situated at the base of a large hill in such a way that the hill slope naturally forms the bulk of the housepit rim. Whereas architectural features such as pits and postholes are exceedingly difficult to identify in ordinary rim deposits, such features in the east rim of HP 7 would have to be dug into the naturally yellow till which forms the hill slope and could be more easily identified through excavation.

Nine 2 m x 2 m units were excavated in 1988 (**Figs. 1, 2, and 3**). These included the remainder of Squares S and T which had been partially excavated in 1987 (Ssq.'s 1–4) as an east-west test trench and Squares CC through II. Only the western half of Square EE was excavated as the eastern half was on the periphery of the rim and presumably contained only a very minimal amount of cultural material.

Each square was excavated in 50 cm x 50 cm subsquares with the exception of Square S which was excavated primarily as a single unit. Whenever possible, excavation proceeded by stratigraphic layers. When a single stratum exceeded 10 cm in thickness, arbitrary 10 cm levels were employed within the stratum. All excavated material was screened through 1/4 inch mesh and all lithic debitage, bone, and prehistoric organic material was collected and bagged by stratum and level for each subsquare. Fire-cracked rocks larger than 3 cm in any dimension were counted and recorded by stratum and level for each subsquare.

Excavation proceeded until all cultural strata had apparently been removed and the sterile substrate completely exposed. However, an exploratory test column, excavated in Square HH, Subsquare 1 at the very end of the 1988 field season, revealed that the till-like substrate was not

completely devoid of cultural material in all areas. A single large scraper, presumably "early," (possibly of Shuswap or middle prehistoric age) was discovered at ca. 75 cm within the presumed sterile substrate. Given the occurrence of occasional flakes and charcoal and the loose, silty nature of these deposits, this may represent the accumulation of colluvium or an early pit depression. No similarly loose, artifact-bearing substrate was observed elsewhere in the excavation.

The Strata

Four major strata were recognized during the excavation of the east rim of HP 7. Three of these had already been identified elsewhere in the house during previous field seasons, and in these cases strata designations which had previously been assigned were used. These include Stratum I (surface), Stratum V (roof), and Stratum XV (sterile). The fourth stratum (Stratum XXV) was newly identified during the 1988 excavations.

Stratum I (Ia, Ib, and Ic)—Surface

The designation Stratum I was given to all those deposits which seemed to represent sedimentary processes which occurred after the destruction of HP 7 or were so extensively disturbed by modern human activities that the original context of the deposit could not be accurately interpreted. Three distinct strata of this type were identified.

Stratum Ia

The designation Stratum I had been used in previous seasons to represent those deposits which made up the modern surface. The stratum consisted of littermat material including any vegetation, roots, loose humic surface soil,

etc., of which the surface was composed. This same definition was used in 1988. In general, the stratum can be defined as follows: very dark brown (10 YR 2/2) sandy silt containing many subangular gravels, particularly pea gravels. Pebbles, cobbles, and boulders are, for the most part, absent. Charcoal and fire-cracked rock are also mostly absent, except where the surface has been disturbed to the point that roof and/or other substrata have been intermixed with surface deposits. The compactness of the stratum is highly variable, ranging from extremely compact in relatively flat areas of high traffic to loose, unconsolidated silt and sand in areas of high traffic which are on an extreme slope. The compactness of the stratum appears to be a function of modern disturbance or lack of disturbance. Fire-reddening is virtually absent from Stratum I. Mixing of strata is also evidently caused by the activities of cicadas. Although this disturbance is not always clearly visible when excavating surface deposits, disturbance of this type must have occurred and should be noted as a significant cause of stratigraphic mixing.

In addition to natural surface soil and littermat, deposits which had been extensively disturbed by people working on steeply sloping surfaces (primarily by the excavators during excavation of adjacent squares) were considered and recorded as surface, even if the deposit clearly included roof material.

Stratum Ib

During excavation of a test trench through Square S (Ssq.'s 1–4) in 1987, a light brown gravelly till-like deposit was identified and designated Stratum Ib. This designation was used in 1988 to represent similar deposits elsewhere on the east rim of HP 7. The originally discovered lens of Stratum Ib was found to extend into the northeast portion of Square DD, although

surprisingly it did not extend further into Square S (see profile of 94 m east for details [**Figs. 2, and 3**]). The deposit is best described as brown (10 YR 5/3) sand with some silt, mixed with high quantities (30–50%) of angular and subangular gravels and pebbles. The stratum contains no fire-cracked rock, lithics, bone, or organics. It lies within a depression which is evident in profile. Stratum Ib is interpreted as colluvium which has been dislodged from its original location upslope. Whether this slope movement occurred as the result of human trampling upslope or simply as the result of natural processes, such as water flow or soil creepage, is uncertain. However, as the deposit seems to be completely devoid of cultural material, a natural cause seems probable.

Another deposit similar to that which was discovered and designated Ib was discovered (during profiling) in Squares CC and EE. The stratum is described as follows: very dark grayish brown (10 YR 3/2) silty loam (30–50% silt, 10–30% sand, and 10–30% gravel) containing many angular and subangular gravels and some larger clasts (0–10% pebbles). A few lithics and occasionally charcoal and mammal bone were included in the deposit. The deposit seems to represent colluvium that washed down on roof collapse material and was contaminated with miscellaneous cultural debris. The deposit occurs in lenses and pockets and varies in cultural content. Again, the deposit may be the result of prehistoric use of the slopes immediately adjacent to the housepit for trails, or possibly from digging out material from the slope for roof covering or other uses, although a completely natural origin is also possible.

In all cases Stratum Ib underlies both Stratum Ia and Stratum Ic. It should also be noted that in most cases, artifacts recovered from Stratum Ib

were simply given the provenience Stratum I (surface), as the stratum was not clearly identified during excavation.

Stratum Ic

In some places, natural accumulation of aeolian silt was quite extensive and a thick layer of fine, apparently natural loam lay on top of the cultural deposits. This was particularly true in the peripheral areas including the northeast corner of Square CC and the southeast corner of Square DD. This deposit was compared to natural aeolion silt deposits elsewhere at the site and found to be identical. The deposit is described as a very dark brown (10 YR 2/2) extremely silty (70–100%) loam with few gravels or larger clasts. Organic staining is virtually absent, as is fire-reddening. Lithics are extremely rare and charcoal is only occasionally present. The deposit is interpreted as a natural aeolian silt which is slightly contaminated with cultural materials from around the house. This stratum clearly lay between Stratum Ia and Ib. Again, the stratum was not clearly recognized during excavation and artifacts found within it are simply labeled Stratum I (surface).

Stratum V—Roof

The designation Stratum V originated in 1986 and was used throughout the 1987 season to represent Kamloops horizon roof collapse deposits. This practice was continued in l988. Because the units excavated in 1988 were on an extreme slope and were also located on the house rim, the roof deposits excavated in 1988 were not always typical of roof deposits found previously within the house. The extreme slope of the rim prevented roof deposits from remaining in some locations, particularly in the central rows of subsquares in Squares T, FF, GG, and HH and roof deposits in peripheral areas (above the

inferred roof-line) were not always easily distinguished from surrounding strata. In general roof deposits are described as follows: black (10 YR 2/1) silty (50–70%) sandy (10–30%) loam with subangular gravels (10–30%) and pebbles (0–10%). The stratum tends to be fairly compact and exhibits extreme organic staining. Charcoal is very common, frequently consisting of large fragments (10–15 cm) which seem to represent burnt roof timbers that fell against the wall. Fire cracked rock is present in some locations particularly on the eastern (upslope) portion of the rim where the angle of incline is least severe and roof deposits are relatively thick. As discussed in detail below, a surprisingly large quantity of bone was recovered from the roof deposits, including fish and mammal remains. Lithics are common in most roof deposits, and in one instance, over 200 flakes were recovered from one 5 cm level in one 50 cm by 50 cm subsquare (i.e., Sq. T, Ssq. 9). This concentration may represent debris which resulted from a tool making episode which occurred on the roof, or simply a dump of material collected from elsewhere in or around the house.

Although the deposit clearly consisted of roof collapse material, the designation of rim spoil was used as a descriptor for those deposits which were located on top of the rim. These should not be confused with actual rim deposits (Stratum XIII), as the designation is simply intended to indicate the location of the Stratum V deposits.

Within the house, roof deposits were clearly indicated by relatively complete (although burnt and fragile) roof timbers oriented at right angles to the rim. Some of these timbers extended into adjacent squares within the house. In at least one case, smaller 'cross beams' were found lying on top of the larger timbers.

Stratum XXV

Between the roof deposits and the natural sterile substrate (XV) exists a layer of till-like silty sandy loam which is fairly rich in cultural material. As such a layer had not been clearly identified previously, the stratum was arbitrarily designated Stratum XXV. The stratum consists of dark brown (10 YR 3/3) gravelly, sandy silt containing some gravel (10–30%) and occasionally pebbles (0–10%). It tends to be about as compact as typical roof deposit. Bioturbation is present, making clear identification of stratigraphic interfaces more difficult. Most of the bioturbation seems to be due to cicada activity. Charcoal flecks are present although they rarely exceed about 1 cm^3 in size. Large pieces of wood and charcoal are absent. The stratum is interpreted as being churned up till mixed with cultural material. Contextual evidence, such as large and small flakes laying flat on top of the stratum as well as several large cobbles and small boulders also laying exactly on the surface of the deposit, suggest that the stratum represents an interior surface accumulation which formed prior to the destruction of the pithouse. The stratum was probably produced during the most recent construction and occupation of the house.

Stratum XXV is restricted to the upper slopes of the rim. It does not occur on the extremely steep portions of the wall nor does it occur at the base of the rim.

Some of the squares excavated in 1988 protruded into the pithouse living area. In these cases (Sq. T west side, Sq. HH west side, and Sq. II southwest corner), a number of other strata were encountered. These will be briefly reviewed here.

Stratum II—Kamloops Horizon House Floor

In most cases, floor deposits were not well defined in the 1988 excavation units. Those deposits which were resting directly on sterile till inside the house or were found within 3 cm of complete roof timbers within the house were designated as Stratum II. This stratum tended to be relatively rich in artifacts.

Stratum XVIII - Post-Collapse Rim Slump

This stratum consists of redeposited materials which have accumulated at the base of the rim inside the house due to natural surface erosion and slope wash. The stratum is characterized by a well sorted sandy silt deposit, usually brown (10 YR 5/3) in color. Charcoal is almost completely absent as are organics. Lithics and bone are present but generally rare. Fire-cracked rock is also rare. The stratum forms a thick wedge just beneath the contemporary surface, laying on top of burned beams and undisturbed roof collapse material.

Stratum XIX - Occupation Rim Slump

Between Stratum V (roof) and Stratum II (floor) a layer of extremely compact, fire-reddened silty loam was found at the edge of the floor during excavation. The stratum seems to represent a thick accumulation of floor deposits or material dumped against the wall, intermixed with natural till sediments which have been dislodged from the wall of the house and naturally accumulated at the base of the rim.

The Features

Five pit features, six postholes, and a series of small shallow depressions were discovered during the 1988 excavations. Most of these seem to be related to the roof structure of the house.

P88–1

Located within Subsquares 6 and 7 of Square S, this feature consists of a fairly large (25 cm diameter) vertical posthole dug into sterile till deposits. The hole is approximately 50 cm deep and was filled with a dark brown gravelly silty loam containing large and small fragments of charcoal.

This feature may represent the placement of a major roof beam, however, its vertical orientation makes this interpretation somewhat dubious. Another possibility is that the feature is related to special architectural problems associated with construction of a pithouse on the side of a hill (e.g., a structure to prevent snow and/or slope washed gravels, cobbles, and boulders from accumulating on the roof of the house).

P88–2

Located primarily in Squares CC and FF, this feature consists of an unusually large (210 x 30 cm) basin-shaped shallow pit. The pit was filled with two distinct fill units: the uppermost deposit being extremely roof-like, containing large amounts of charcoal, and: the lower deposit consisting of a very silty and soft light brown deposit containing flecks of charcoal and large amounts of fish bone. It was noted by the excavator, that most of the cultural material in the second fill unit was recovered from its surface, "where bones, flakes, and charcoal accumulated."

This feature is interpreted as a construction platform which was used during the most recent construction of the housepit. It is also possible that the feature acted as a roof beam foundation during earlier house construction episodes.

A single late Plateau/early Kamloops point was recovered from the feature fill. Like most of the artifacts recovered from rim and roof strata, it should not be considered an accurate temporal indicator as it is likely to have been removed from its original context and redeposited.

P88–3

Located in the center of Square CC, this feature consists of a large (100 cm x 100 cm) basin-shaped pit containing several small boulders and large cobbles as well as pebble and cobble packing. The pit was filled with roof-like materials including charcoal, flakes, deer bone, fish bone, and birch bark. A scapula of a deer-size ungulate was recovered from the bottom of the pit. The feature seems to represent a roof beam foundation with the rocks acting to secure and support the beam.

P88–4

Located in the northeast corner of Square DD (Ssq.'s 5, 6, 9, 10, 13, and 14), this feature consists of a large (140 cm x 80 cm) basin-shaped pit containing three large cobbles. The pit was filled with an extremely dark colored (10 YR 2/1) deposit which strongly resembled roof material. A large strip of folded birch bark and a relatively complete, medium-sized left ungulate scapula were among the fill deposit. Again, this feature seems to represent a roof beam foundation, probably used during the most recent construction of the house.

P88–5

Located in the western portion of Square DD and the eastern portion of Square HH, the feature consists of a very large (150 cm • 100 cm) basin-shaped pit or possibly consists of several smaller pits which give the impression of a single large depression. One fill unit was clearly identified while several others were made difficult to identify and interpret due to encroachment of rim deposits into Square HH. The majority of the fill consisted of a dark brown humic deposit with some pebbles and a few cobbles. Charcoal was quite common with some fragments being greater than 120 cm^3. Lithics, bone, and organics were also present although not as frequent as in roof collapse deposits. A small posthole, surrounded on three sides by large cobbles was found within the southern portion of the feature. The feature may have been a beam emplacement used during an 'early' house construction episode.

Six postholes were clearly identified including one on the house floor (Sq. II, Ssq. 8). While this and the other posthole in Square II are clearly related to the roof structure of the house the function of the remaining holes is uncertain.

Eight small shallow depressions were found along the steepest portion of the east rim of the house. Each of these depressions was approximately the same size (10 x 5 cm) and had a characteristic 'half moon' shape. It was suggested that these depressions may represent toe holds used by the inhabitants to access storage space immediately below the roof at the top of the rim.

The Lithics

The 1988 excavations of HP 7 yielded an abundance of lithic debitage. In general the overall frequency of material recovered is comparable to that of roof and roof-like upper rim excavations from previous years. Some of the major trends and exceptional occurrences noted during excavation will be discussed.

In general, lithic debitage was found to occur within Stratum V (roof deposit) more frequently (10–30 flakes/12.5 liters) than in any other stratum, although the surface of Stratum XXV was also noted to occasionally yield equally high frequencies of flakes. Trachydacite flakes and flake fragments were by far the most common specimens however, a wide range of other materials were also present, including cherts, chalcedonies, quartzite, and several small flakes of obsidian.

Two concentrations of flakes are particularly noteworthy: the northeast corner of Square T (Ssq.'s 9 and 13) yielded an unusually high concentration of lithics. Over 300 flakes were found within a 30 cm^2, in little more than 10 cm of Stratum V (a typical 12.5 liter sample yielding over 50 flakes). Included among the debitage was a Kamloops horizon point preform. The concentration is highly suggestive of the possibility that this portion of the roof was used at least once as an outside lithic workshop area. Another possible explanation for the concentration is that it is the result of a dump of debitage which was created elsewhere, (perhaps within the house) gathered up, and discarded on the roof.

A trachydacite core and concentration of large flakes were found in association with Feature 88-3 (Sq. CC, Ssq.'s 2, 3, and 6). The flakes were found beside, under, and on top of one of the larger rocks found within the

feature, and the core was found on top of the rock. Assuming that the flakes and the core are all the products of a single tool making event, it is difficult to explain how they could naturally arrive at the arrangement in which they were found after the roof was in place. Instead it seems that their deposition occurred at approximately the same time as the deposition of the rock with which they are associated, or that they were intentionally deposited. In either case it is clear that the rock has moved little since the deposition of the flakes.

Diagnostics

As was the case in previous seasons, diagnostic artifacts from a number of cultural horizons were excavated and identified during the 1988 season. A list of these is included here (Table 1). Kamloops horizon side-notched projectile points and preforms are by far the most abundant. It should also be noted that Kamloops horizon diagnostics were the only diagnostic artifacts found within floor deposits (Stratum II) of the house in 1988.

Late Plateau/early Kamloops material was also fairly abundant and was found within Strata V, XVIII, and XXV, where Kamloops horizon points also occurred. Only two definite Plateau horizon diagnostics were recovered from the excavations; these were both found within the roof material (Stratum V).

Earlier materials include two Shuswap horizon points and a microblade core, all found in Stratum V. These may be the result of disturbed material from a Shuswap horizon occupation of the housepit or simply artifacts which were redeposited during construction (excavation) of the house floor.

Table 1: Diagnostic artifacts—1988 excavations of HP 7

Square	Subsquare	Stratum	Level	Description
CC	15	V	1	Plateau point
CC	15	V	1	Plateau preform
CC	6	V	2	Kamloops point
CC	11	V	2	Late Plateau/early Kamloops
CC	P88–2			Late Plateau/early Kamloops
EE	12	V	1	Kamloops tip ?
EE	4	XXV	1	Biface tip
S	5	V	1	Late Shuswap point
S	7	V	1	Late Plateau/early Kamloops
S	7	V	1	Kamloops preform
S	9	XXV	1	Late Plateau/early Kamloops
DD	16	V	1	Late Plateau/early Kamloops
DD	15	V	2	Late Plateau/early Kamloops
DD	16	V	1	Microblade core
T	11	I	1	Kamloops preform
T	13	V	1	Kamloops preform
T	16	I	3	Kamloops point
T	16	I	3	Kamloops tip ?
T	8	V	5	Kamloops point
T	16	V	1	Kamloops point
T	16	XIX	3	Kamloops preform
II	6	I	1	Kamloops preform
II	10	XXV	1	Kamloops point
II	8	XVIII	3	Late Plateau/early Kamloops
II	4	V	1	Shuswap point base
II	8	II	1	Kamloops point
II	4	V	2	Kamloops point

The Faunal Remains

The overall analysis of faunal remains is presented in Volume I, Chapter 10, and Volume II, Chapter 7, however some remarks on the general distribution of bones as noted during excavation of the rim will be made here.

Faunal remains were more abundant than expected. The frequency of the remains from rim and roof deposits, particularly those of medium-size ungulates, far exceeded that of previous years. This is especially apparent when one compares the amount of bone recovered from the rim in previous years to the amount recovered in 1988.

Deer-size ungulate and fish (presumably salmon) remains made up the majority of the faunal assemblage. Fish remains seemed to come primarily from pit fill deposits and roof collapse material. In one instance, articulated fish remains were found *in situ* (Sq. DD, Ssq. 8).

The deer-size ungulate remains included antler, scapulae, long bone fragments, metapodials, carpals, tarsals, phalanges, and teeth. Of particular interest is the abundance of relatively complete scapulae which were recovered (four in total), three of which were found in association with pit features (P88–3, P88–4, and P88–5). In each case, a scapula was found within the fill of the northern portion of a feature. It seems unlikely that these occurrences are purely coincidental. Assuming that cultural activities are responsible for the distribution, we can formulate a number of causal scenarios. One possibility is that the scapulae are waste remains of food eaten during the construction of the pithouse. Another is that the scapulae were used as scoops for removing loosened materials from excavated pits and depressions. Finally, they could represent ceremonial offerings which were made at the time of the house raising.

A variety of other faunal remains were found scattered throughout the excavated area. These include bivalve shell fragments, bird bone, beaver teeth, and possibly canid remains. Shell and beaver tooth fragments seemed unusually concentrated in features and in upslope portions of the wall, near the junction with the roof.

Unusual Artifacts

During the 1988 excavations, a number of artifacts which were unusual in form, function, and/or character were recovered from HP 7. The most

notable of these is a stone zoomorphic pendant recovered from floor deposits near the house wall in Square T, Subsquare 12 (Vol. II, Chap. 13, **Fig. 8**). The pendant displays turtle-like (possibly stylized rattle snake) head morphology including eyes and a smiling mouth. The material of which the pendant is made appears to be serpentine.

A very small shell bead was recovered from the roof deposits of Square DD, Subsquare 14. The bead may be composed of dentalium shell, however this identification is far from positive.

Worked bone object fragments, including portions of bone needles, were unusually common in some Squares, particularly S, CC, and DD.

Finally, a fragment of a steatite pipe was recovered from the roof deposits of Square II, Subsquare 4. The artifact appears to be a pipe bowl fragment and is engraved with a repeating chevron pattern.

Conclusions About Walls and Roofs

As stated earlier, one of the primary goals of the l988 excavations of HP 7 was to improve our understanding of housepit roof construction. The 1988 excavations have successfully identified a number of pit and rock features which seem to be roof beam emplacements. These features are located in the uppermost third of the rim with the (apparently) most recent foundations being at the very top. The height of the features suggest that the roof structure may have been gabled (rather than conical) on the side of the house closest to the hillside. This may have facilitated water runoff and prevented accumulation of colluvum at the abutment of the roof and hillside. Future excavations might include excavation of one or more other

houses which are similarly situated on hill slopes (e.g., HP 1), as it would be interesting to compare the results.

Rim Test Trenches

The primary goal of the test trench excavations was to provide data which would allow for a better understanding of housepit rim formation. The understanding of such processes was required to establish the relationships between rim and roof deposits as well as to discover how housepits changed through time.

Exploratory trenches in HP's 1, 5, and 7, excavated in 1986, were extended and expanded. The most extensive excavations were of the rim of HP 7. It is these excavations on which this report is based (Figures 7–9). Excavation was conducted according to individual stratigraphic layers, 10 cm. arbitrary divisions were used when a stratum exceeded l0 cm. in thickness or was not clearly defined. In most cases, individual layers were identified without great difficulty however, rodent disturbance confused this process in some areas.

Analyses of lithics, organic material, soil samples, and carbon samples have been reported in Volumes I and II. A number of additional observations concerning the nature of housepit rim deposits can be made.

General Description

Three basic types of rim deposits were identified:

1. hydrophobic roof-like deposits containing some organics;
2. extremely organic midden deposits; and
3. redeposited glacial till.

Hydrophobic Roof-like Deposits

The roof-like deposits are located in the uppermost levels of the rim. These layers seem to represent roof material which was pulled down onto the rim prior to destruction of the pithouse or material that once lay as a continuous sheet of deposit covering the pithouse structure. The hydrophobic nature of the deposit has allowed excellent preservation of birch bark and other organics. However, the concentration of organic material is not as great as in the organic midden deposits below. Charcoal, gravel, and angular cobbles are also common to these upper levels. These may represent both hearth material, discarded during occupation of the house, and burned roof timbers displaced during various re-excavations.

Few faunal remains were recovered from these deposits. Concentrations of bone occur infrequently, usually consisting of several fragments of a single element. Horn and antler appear to be completely absent from these layers.

Lithic debitage is extremely abundant in these roof-like deposits suggesting that the rims were common areas for the production of stone tools. Shuswap, Plateau, and Kamloops horizons were all represented by diagnostic projectile points recovered from these deposits.

Organic Midden Deposits

Below the upper layers lie extremely organic midden deposits alternating with layers of redeposited glacial till.

The organic layers are primarily made up of birch bark, fir needles, small fragments of wood and charcoal, and a great deal of unidentified fibrous plant material. Ten such layers were discovered and varied between one and ten centimeters in thickness. Each layer appears to be made up of many

individual lenses, often identified as a concentration of a particular organic material. This would seem to indicate that the layers were created through multiple depositional (or dumping) events, possibly representing cleaning episodes which would occur in late fall prior to reoccupation of the house.

As in the above layers, gravels and small angular cobbles are common to these deposits, possibly representing discarded hearth material.

Faunal material is largely absent. This may be due to the scavenging activity of rodents, lagomorphs, canids, and sciurids which would remove discarded faunal materials from around the house between winter occupations.

Lithic material is very common. However, only the uppermost organic layers contained projectile points of any kind and these were found to be of uncertain type (possibly late Plateau).

Redeposited Glacial Till

Layers of redeposited till are found between the organic deposits. These layers consist of compact silts, sands, and gravels. They contain no organic material and are therefore easily distinguished from their surrounding strata. Faunal material is also completely absent. Lithic material includes several Plateau horizon projectile points as well as some less diagnostic points similar to those found within the organic layers (late Plateau?). Lithic debitage is found but is not as abundant as in other types of rim deposits.

In addition to these three basic types of deposits is a fourth type found only on the northern side of the pithouse. The deposit clearly underlies all other strata in the rim. It consists of lenses of redeposited sterile glacial till of varying thicknesses (up to 50 cm) intermingled with lenses of till-like silts,

sands, and gravels thoroughly mixed with gravelly sandy loam and cultural material. Large and small cobbles are relatively common to this deposit while organics are quite rare. Lithic material is not abundant and only one projectile point was recovered.

Changes Through Time

As excavation of the housepit progressed, it grew increasingly evident that the rim deposits contained a great deal of information about the formation and development of the house through time. Dramatic changes in types of deposits as well as in depositional patterns were clearly illustrated in the rims. Many of these are still not understood, but those that are include deposits which indicate initial excavation and later re-excavation of the housepit floor, and stratigraphic patterns including expansion of the house.

The fourth type of deposit described above supplies evidence for the earliest events in the life of the housepit. This stratum obviously represents the earliest rim deposits and the abundance of till may represent material displaced during the initial excavation of the pithouse. The fact that these deposits do not appear in the southern rim suggests that the pithouse has expanded to the south at least once since this initial construction. An expansion of two or three meters to the south would completely remove any initial southern rim deposits. Excavation of the western portion of the rim would allow verification of this possibility and may also provide evidence regarding the extent of this expansion.

Evidence for later expansion of the house is found in the multiple till layers above these earlier deposits. These layers of till are likely derived from renewed excavation of the housepit floor into the underlying sterile till.

However, these lenses occur infrequently enough so that it seems unlikely that they represent each rebuilding and recleaning of the housepit. When roofs required replacing it appears likely that the early residents either left the floor deposits in place, or simply removed the loose organic rich, black floor deposits without extending any further into the sterile till. What the till layers in the rim may then represent are major construction episodes during which the housepit was enlarged.

Even stronger evidence is available for the expansion of the house in more recent times. In the southern rim deposits, all but the uppermost layers are abruptly truncated along a vertical plane on the inside of the house. The truncated deposits would have included portions of many different strata, thereby mixing remains from different time periods. These mixed deposits were most likely thrown up on top of the rim, explaining the variability in diagnostic projectile points from the uppermost layers. The truncation of layers indicates that the innermost portion of the rim had been excavated prior to the final occupation of the house. This excavation into the rim would again expand the house southward. Unfortunately, rodent disturbance prevented the confirmation of such an event in the northern rim deposits.

Not as well understood are the changing patterns in rim deposits through time. This is particularly true of the change from alternating layers of till and organic remains to the more recent roof-like layers. The absence of roof-like deposits in the lower levels indicates some change in the construction of roofs through time. Roof supports may have been placed at the base or on the inside edge of the rim in these earlier times, thus earthen roof deposits would not flow onto the tops of the rims but would instead

slump against the inside edge. However, upon collapse and rebuilding of the house, these slumped deposits would have to be removed and would most likely have been placed on top of the rims. Thus, this explanation is far from satisfactory. Excavation of other housepit rims may aid in the understanding of this problem.

Roof Construction

In seeking to understand how the later earthen roof deposits were related to the rim, as well as in an attempt to assess deposit transformations during collapse episodes, endeavors were made to discover where and how the roof supports were secured. These could have been set right on top of the rim, on the inside edge of the rim, or varying distances down from the inside edge. Unfortunately, no postholes or ledges where such supports would have lodged were clearly identified in the rim trenches. However, stratigraphic evidence, including the layer of roof-like deposits in the uppermost portion of the rim as well as indications of roof beam emplacements from the east wall excavations, indicate that the base of the roof supports may have been on a continuous plane with the top of the rim.

Rock Features

During the 1987 season, two large rock features were discovered within the rim of HP 7. Both features were found in the northern portion of the rim and were located within the earliest deposits. Each consisted of large cobble and small boulder sized rocks. These rocks had been placed in piles and then surrounded and covered in sterile till material. The larger of the two piles was associated with several large fragments of wood.

The cause and/or purpose of these features is difficult to determine. One possibility is that they represent foundations for early roof supports. Patterned placement of more such features would lend support to such a theory. Another possibility is that the piles simply represent rocks removed from the housepit during its initial excavation. A satisfactory explanation will require further research.

Summary of Rims

The 1987 season greatly increased our understanding of rim deposits. Being well stratified, they contain information regarding the construction and occupational history of the housepit. The rims of HP 7 were studied in considerable detail producing a scenario of rim formation against which other rims can be compared. Included in this scenario are multiple expansion and re-excavation episodes, represented by redeposited till and truncated strata; regular cleaning episodes, represented by organic rich midden deposits; and changes in roof construction, represented by changes in depositional patterns.

Further research is required before conclusions can be advanced about several aspects of rim formation and function. These include:

(1) the possibility that rims acted as outside workshop areas for activities such as stone tool production;

(2) confirmation of multiple expansions of the housepit throughout its occupation;

(3) understanding of major pattern changes in rim strata (particularly the absence of roof-like deposits in earlier layers);

(4) the relationship between roof supports and rim deposits, and;

(5) the function of large rock features found among the earliest deposits.

Figures

Figure 1: Plan of the excavated area of the eastern wall of HP 7 showing square designations, cultural depressions, and rock accumulations.

Figure 2: East-west profiles of the east wall excavations of HP 7. Strata are identified with roman numerals.

Figure 3: North-south profiles of the east wall excavations of HP 7.

Figure 4: An overview of the east wall excavations of HP 7 looking northeast.

Figure 5: An overview of the east wall excavations of HP 7 looking east.

Figure 6: An overview of the east wall excavations of HP 7 looking southeast.

Figure 7: West wall profile of Squares M, N, O.

Figure 8: East wall profile of Squares M, N, O, Trench 2.

Figure 9: East wall profile of Squares D, K, L, Trench 2.

Figure 1. Plan of the excavated area of the eastern wall of HP 7 showing square designations, cultural depressions, and rock accumulations.

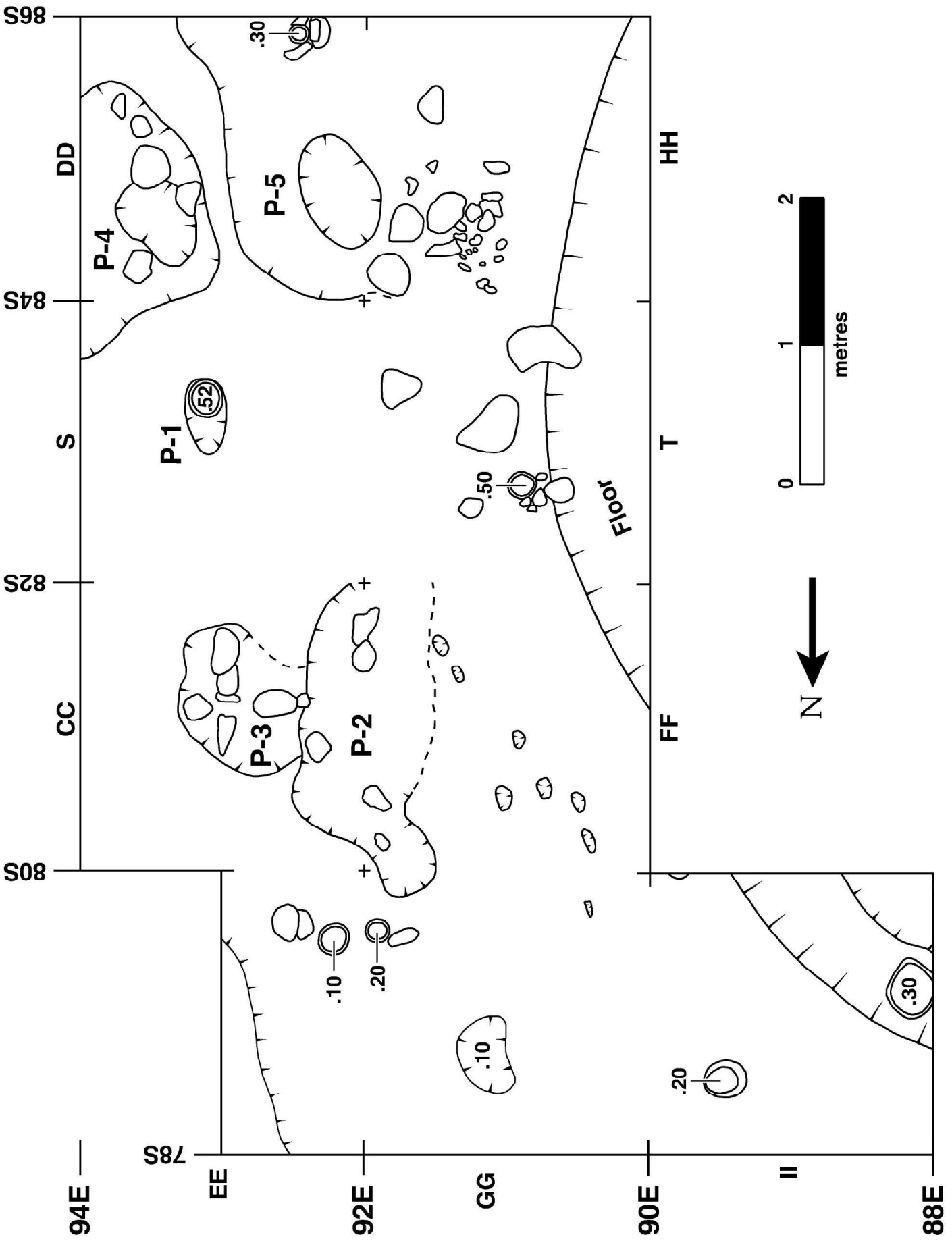
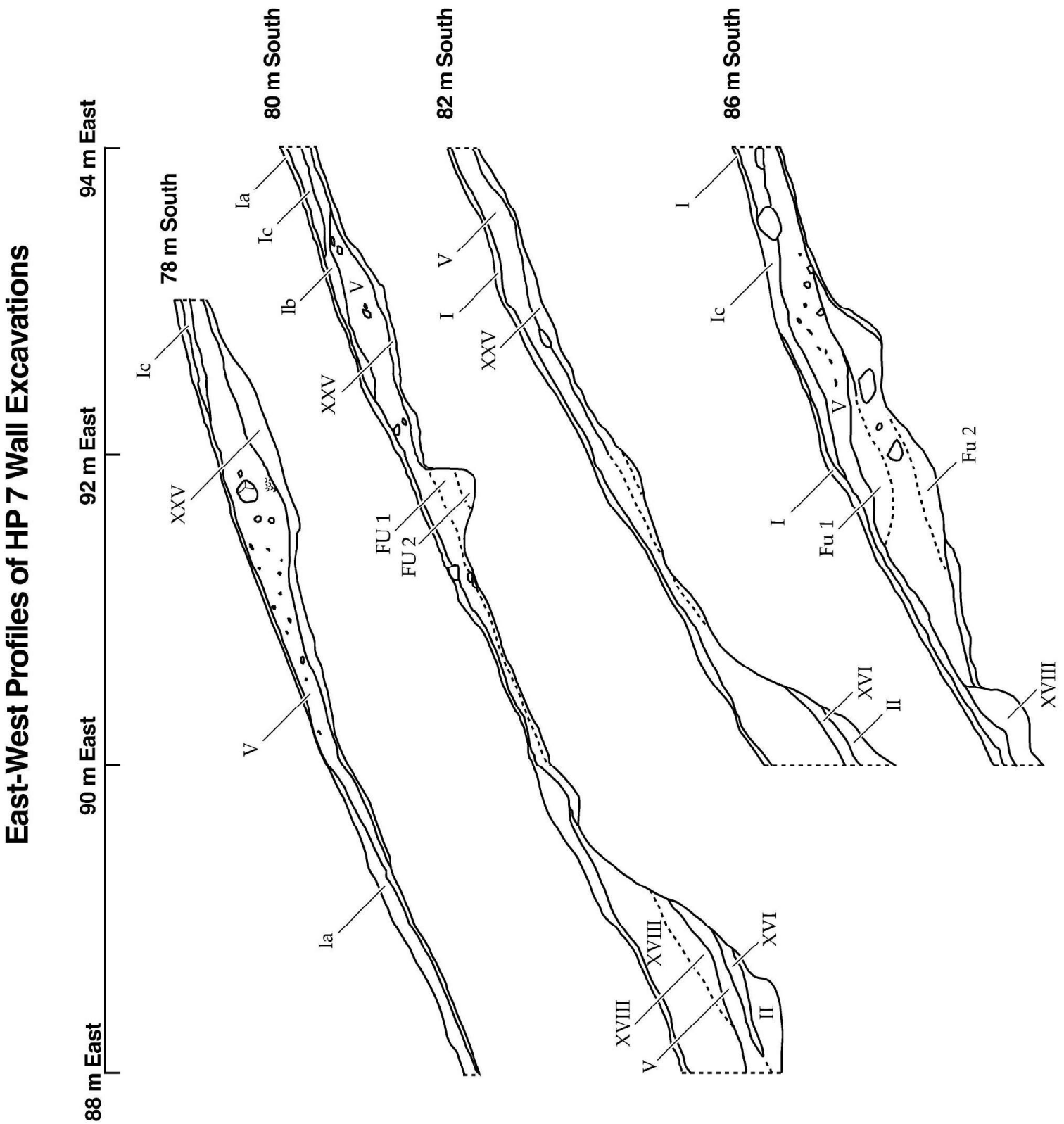


Figure 2. East-west profiles of the east wall excavations of HP 7. Strata are identified with roman numerals.



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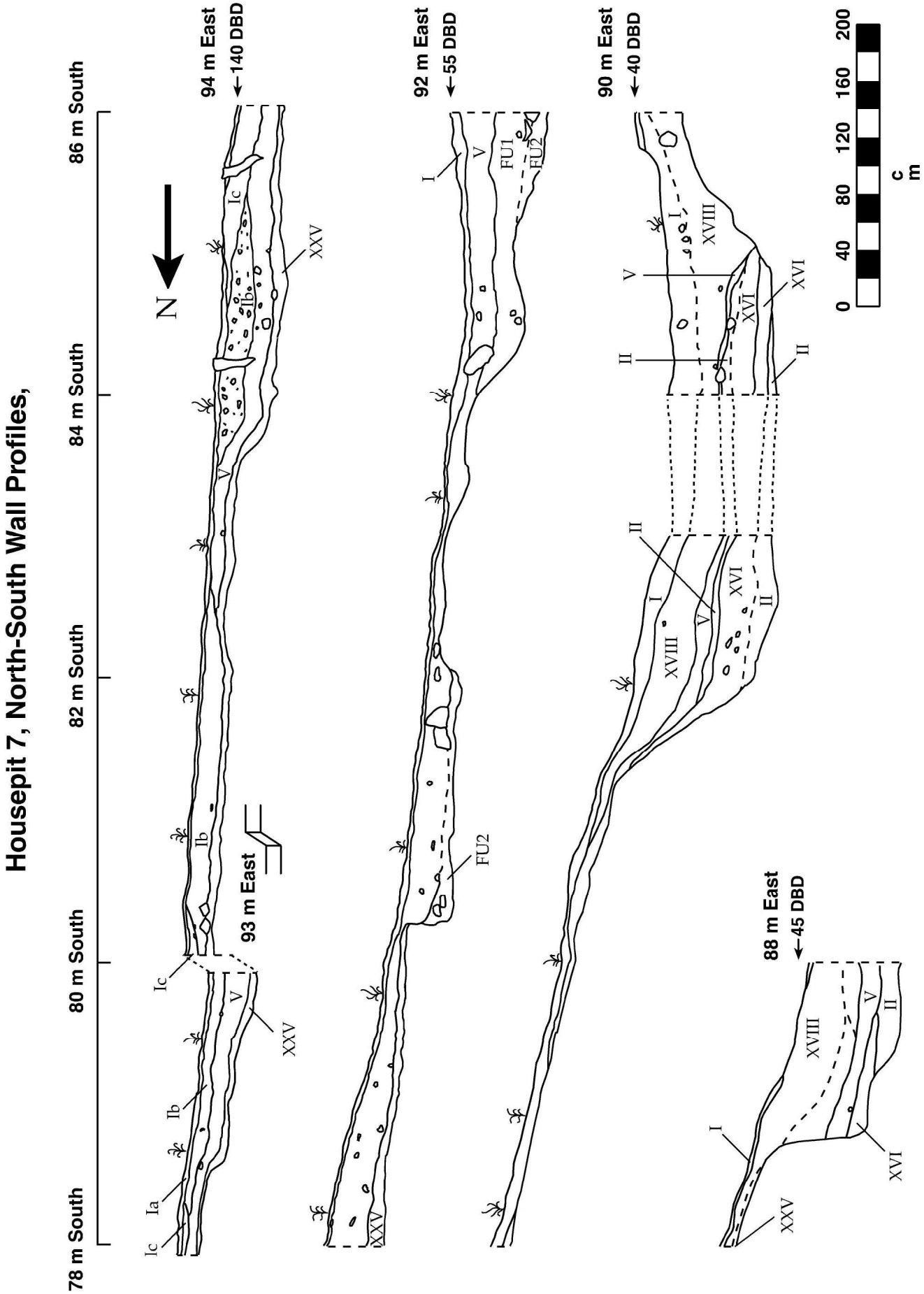

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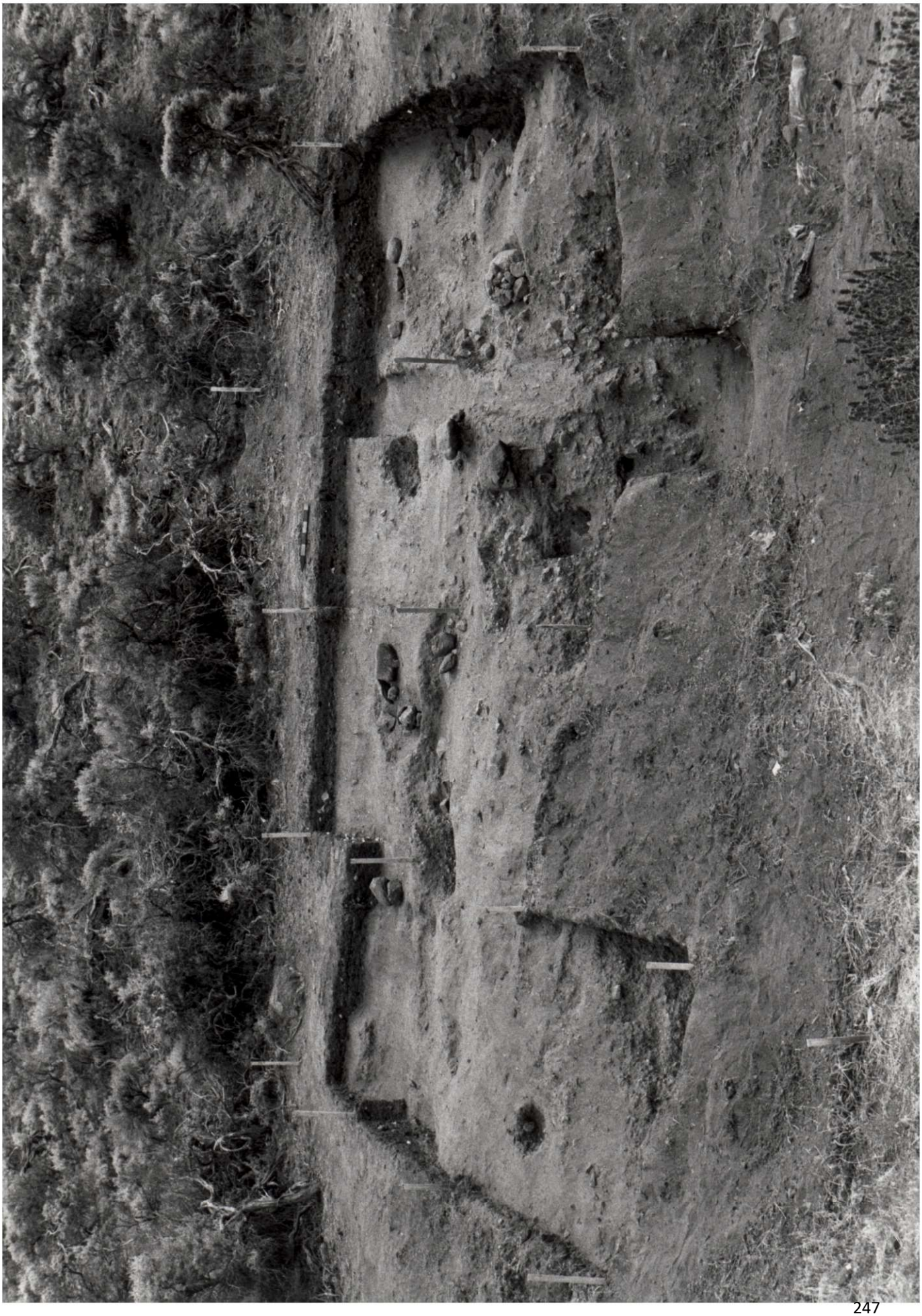

Figure 6. An overview of the east wall excavations of HP 7 looking southeast.

Figure 7. West wall profile of Squares M, N, O.

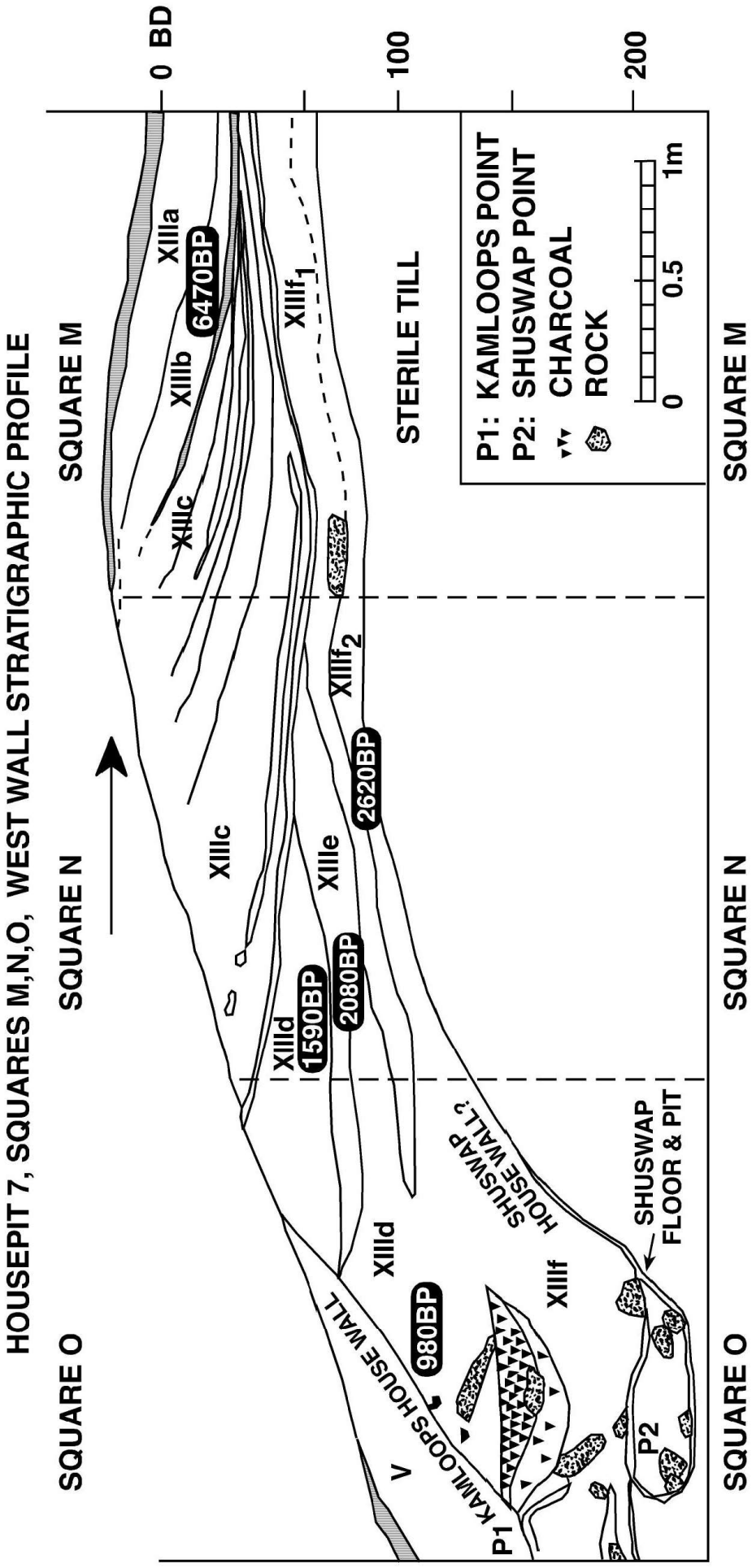

Figure 8. East wall profile of Squares M, N, O, Trench 2.

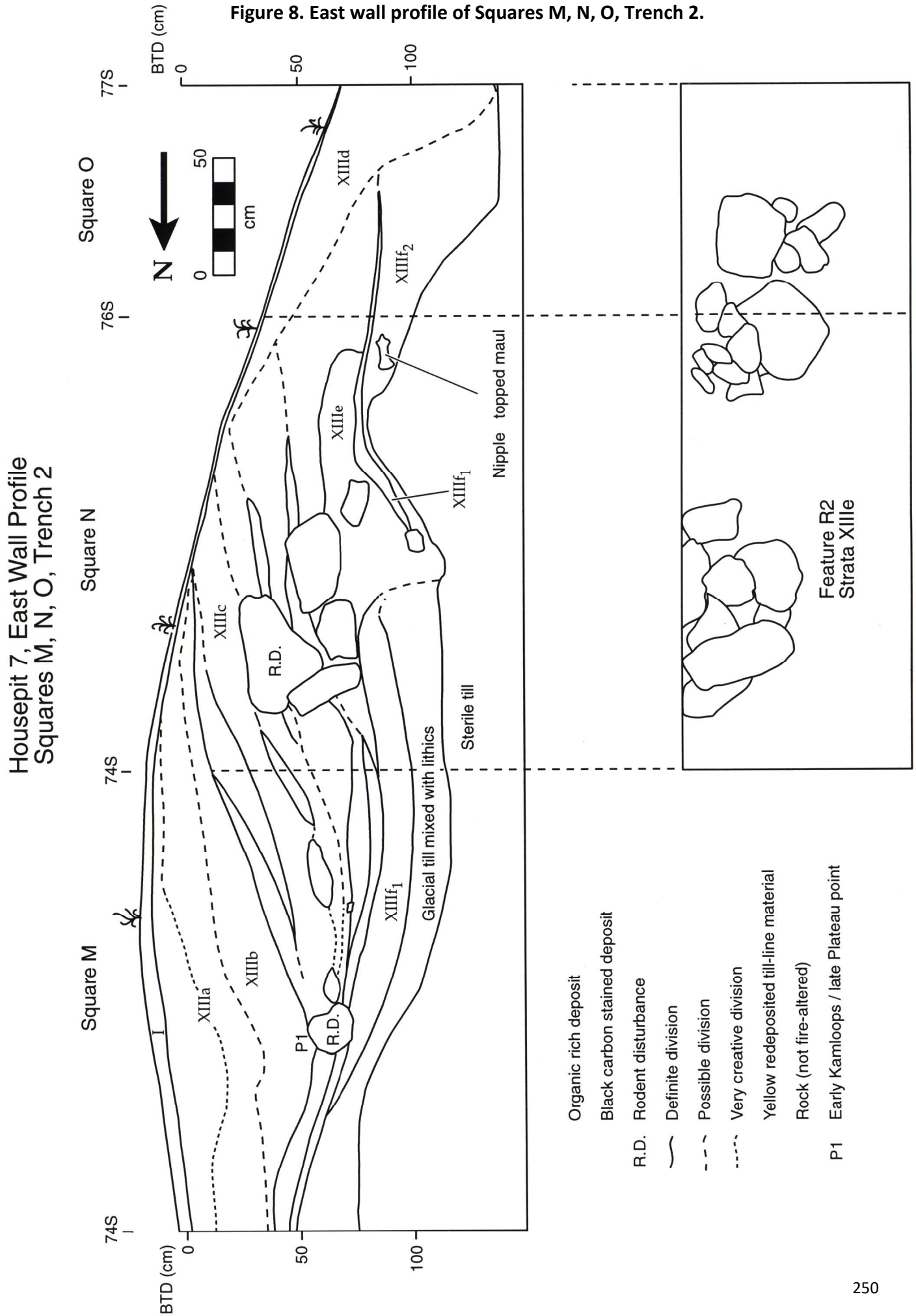

Figure 9. East wall profile of Squares D, K, L, Trench 2.

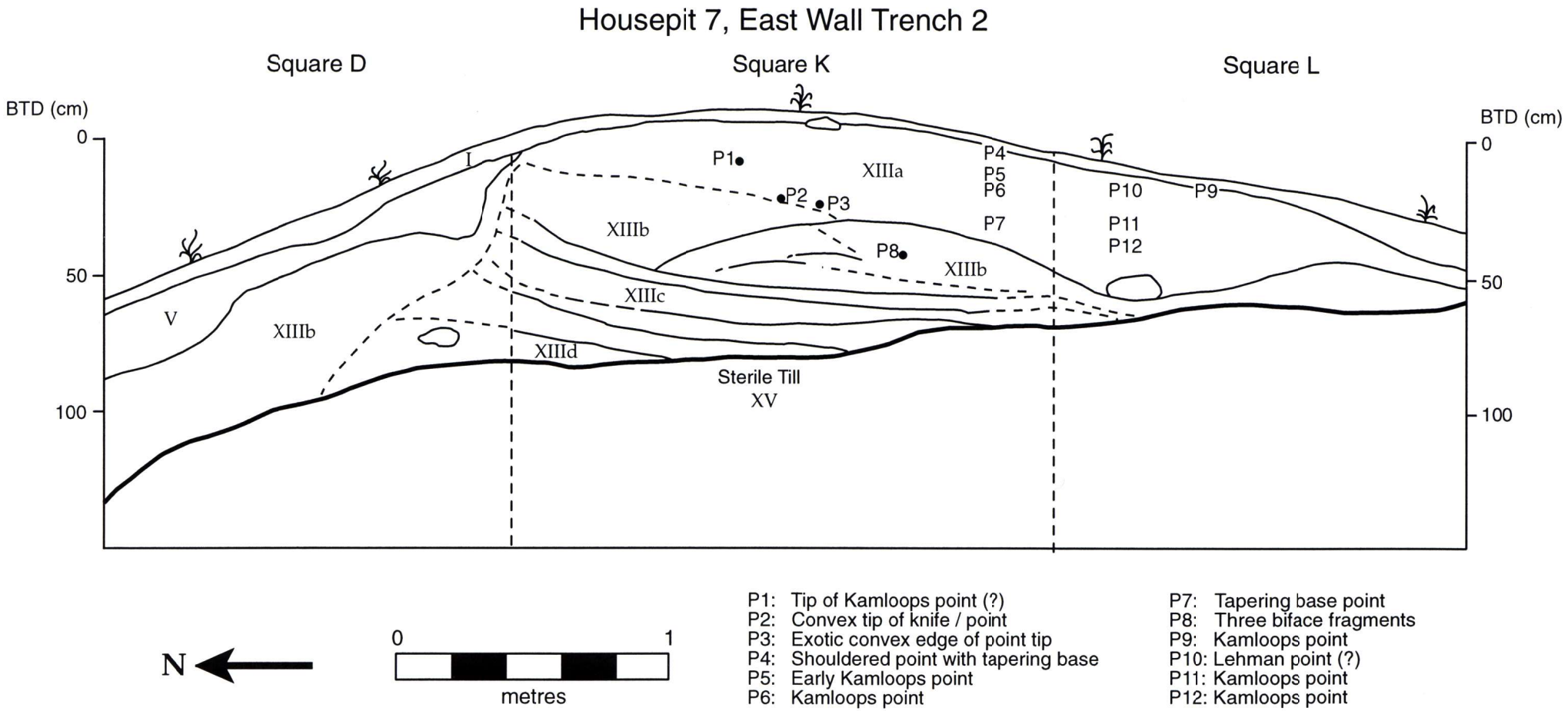

Table 1: Diagnostic artifacts—1988 excavations of HP 7

Square	Subsquare	Stratum	Level	Description
CC	15	V	1	Plateau point
CC	15	V	1	Plateau preform
CC	6	V	2	Kamloops point
CC	11	V	2	Late Plateau/early Kamloops
CC	P88–2			Late Plateau/early Kamloops
EE	12	V	1	Kamloops tip ?
EE	4	XXV	1	Biface tip
S	5	V	1	Late Shuswap point
S	7	V	1	Late Plateau/early Kamloops
S	7	V	1	Kamloops preform
S	9	XXV	1	Late Plateau/early Kamloops
DD	16	V	1	Late Plateau/early Kamloops
DD	15	V	2	Late Plateau/early Kamloops
DD	16	V	1	Microblade core
T	11	I	1	Kamloops preform
T	13	V	1	Kamloops preform
T	16	I	3	Kamloops point
T	16	I	3	Kamloops tip ?
T	8	V	5	Kamloops point
T	16	V	1	Kamloops point
T	16	XIX	3	Kamloops preform
II	6	I	1	Kamloops preform
II	10	XXV	1	Kamloops point
II	8	XVIII	3	Late Plateau/early Kamloops
II	4	V	1	Shuswap point base
II	8	II	1	Kamloops point
II	4	V	2	Kamloops point

Excavations of Housepit 9

Diana Alexander

Purpose and Extent of the Excavations

The excavations at HP 9 are part of a large ongoing project at the Keatley Creek Site investigating how social group structure, social stratification, and differential access to, and control of, resources can be used to explain the occurrence of the unusually large housepits and villages found in the Lillooet area (Vol. I & Vol. II Hayden et al. 1986, 1987). Housepit 9 is one of 21 housepits that have been tested at the site in the last 7 years. It is one of only 5 that have had most, or all, of the floor exposed.

Housepit 9 is located southeast of the main part of the village across the small valley containing Keatley Creek. Few other cultural depression are situated on this side of the creek (Vol. III, Preface, **Fig. 1**). Notable exceptions include a large cache pit near the rim of HP 9 that was very likely constructed and used by the occupants of the housepit and a second housepit (107) only 10 m away that also may have been constructed at approximately the same time.

The diameter (rim crest to rim crest) for the 77 untruncated housepits at the Keatley Creek Site ranges from 4.25–20 m (mean = 11 m) with approximately 2\3 of the housepits greater than 8 m across (Spafford 1991:7). Housepit 9, with a diameter of only 7.8 m and a depth of 0.85 m at the surface, is relatively small.

Housepit 9 was initially chosen for testing in 1987 for two reasons: (1) to determine if this housepit would be a suitable candidate for further excavation as part of the sample of small housepits from the site, and (2) to

examine the nature of the few housepits isolated on the outskirts of the village and distant from the high density of housepits at the site core. The test consisted of a narrow trench (50 cm x 4 m) that extended from the northern rim to the center of the housepit depression (**Fig. 2**). The trench revealed a relatively complex stratigraphy with at least four living surfaces, included three consecutive housepit floors and a post- housepit occupation (Jolly et al. 1987). The deposits were comparatively shallow with a low artifact density that allowed for relatively quick excavation.

Based on the test results further excavations were undertaken at the housepit in 1990. An additional 25 subsquares (50 x 50 cm excavation units) were excavated in the center of the housepit to supplement the eight removed during testing (**Fig. 1**). The discovery of a Kamloops Horizon point in association with the most recent housepit floor deposit (Stratum VIb) provided a relative date of 1200-200 BP for this occupation. A large cache pit was found along the south wall of the housepit and partially excavated.

In 1991, twenty-eight more subsquares were excavated in order to expose as much of the remaining floor as possible and complete excavation of the large storage pit. The 1992 project removed 24.4 additional subsquares around the outer edge of the housepit floor providing a total areal exposure of 21.35 m^2 (85.4 subsquares) (**Figs. 1 and 2**). Some floor deposits remain to be excavated around the extreme outside perimeter of the floor, but I am confident that all large storage features and hearths have been exposed. Little or no evidence was found of postholes from posts that may have been used to support the roof structure or any internal house structures.

Methodology

The housepit was covered by a 2 m x 2 m grid of squares that were designated with a letter of the alphabet (**Fig. 1**). Each square was divided into 16 subsquares, 50 cm on a side, numbered 1 to 16. Each subsquare was excavated separately using a trowel and dustpan and the soil screened through 1/4 inch (6.25 mm) mesh. All bone and debitage, and a judgmental sample of the larger floral remains were collected and bagged by stratum and level for each subsquare. One liter flotation samples of the floor deposits were collected from four subsquares (Ssq.'s 1, 7, 9, 15) in each square to acquire a systematic sample of debitage, fauna, and flora lost through the use of the large screen mesh. Flotation samples were also collected from each of the fill units in the pit features.

Detailed profiles were drawn of the walls of each square and the exposed outer edges of the excavation. A rough sketch of one wall of each subsquare was also made prior to excavation, to indicate natural strata and arbitrary excavation levels.

The deposits were excavated according to visible stratigraphic zones or strata (**Figs. 3, 4, 5, 6, 7, 8, and 9**). The most commonly encountered strata were: I (surface), IV (roof), VIa,b,c, (filtered collapse and floor), VIII (floor), XII (roof), and X (floor). Any floor strata more than 5 cm thick were divided and excavated in 5 cm levels arbitrarily contoured to the surface of the stratum. All other strata were similarly divided into 10 cm levels.

Provenience for the artifacts and other cultural remains from the site was recorded according to stratum and level within each 50 cm subsquare. A plan view of the cultural remains was generally only made for the floor deposits, with each 5 cm level of the floor having a separate plan. All flakes,

tools, bone, charcoal, and features were plotted on these plan views, as well as any fire-altered rocks or unaltered rocks greater than 4 cm in maximum dimension. During the 1991 and 1992 field seasons (occasionally in 1990) excavators attempted to resolve difficulties in distinguishing between Strata VI and VIII by also plotting the depths of the artifacts and faunal remains from these two strata on floor plans.

A rough estimate of the clast content was made for each stratum within every subsquare. Clay, silt and sand contents were estimated by feel and the texture described as a silt, clay, or loam according to the Canadian Soil Classification System. Cobble (256-64 mm according to the Wentworth Particle Size Scale) and pebble (64-4 mm) contents were estimated from the volume of each left after screening a bucket of soil from the stratum. This procedure provided a relatively accurate measure of cobble and pebble content. Granule (4-2 mm) content was more difficult to ascertain since these clasts were not retained in the screen and estimates had to be made from a general visual inspection. In many instances the excavator did not even attempt this estimate and the percentage of granules is seen as the least accurate estimate for the percentage of large clasts in the deposits.

Stratum I: Surface

Soil Matrix

The matrix consists of a very dark brown sandy loam (10 YR 2/2) with a high concentration of organic material in the top 5 cm produced by the modern vegetation cover. Large clasts are uncommon in the matrix with cobbles never more than 5% by volume and often totally absent. Pebbles comprise anywhere from 5% to 20% of the matrix with a general trend for

this fraction to increase with depth. Granules are generally 5% to 15% of the matrix. Pebble and granule content in Stratum I is appears to be slightly higher on the west side of the housepit. Many clasts are angular and appear to be fire-altered.

Bioturbation by insect and rodents appears to be minor, with cattle seemingly having a greater, though still minor, impact on the surface deposits. The soil is typically loose near the surface where roots and other organic material is abundant, and on the steeper slopes where the deposits are less stable. Closer to the center of the housepit and with depth, the matrix becomes more compact. The surface is distinguished from the underlying Stratum IV by the higher concentration of clasts in Stratum IV and a different soil color, though in some cases the Stratum IV is lighter and in others darker. The matrix and cultural content of Stratum IV is consistent with that interpreted as collapsed roof material in other housepit excavations (Hayden et al. 1986, 1987).

Although the surface deposits are generally 5–10 cm thick, thickness can vary from as little as 3 cm to as much as 20 cm (**Figs. 3, 4, 5, 6, 7, 8, and 9**). The thicker deposits are typically found closer to the rim where gravity and the surface configuration combine to produce the thickest deposits. In an earlier report, excavators noted (Iannone and Handly 1990:4) a trend for thicker deposits to occur in the western half of the housepit. Subsequent excavations show equally thick deposits in the eastern half. An unusually thick deposit of 34 cm in Square G (Ssq. 16) is the product of a hearth feature (HP 8) in Stratum I that had disturbed the underlying strata (**Figs. 7 and 8**).

The surface is interpreted as soil deposited after the collapse of the roof that covered the last housepit occupation. Although aeolian deposition is probably responsible for some of the soil build up in Stratum I, the size of the clasts suggests that most of the surface is the result of colluvial deposition. The main agents causing soil movement into the housepit are probably slopewash and gravity bringing soil (largely reworked roof deposits) into the center of the depression from the rim. The slightly higher incidence of larger clasts in western portions of Stratum I is probably due to the sloping topography to the west of the housepit funneling material into the depression. Disturbance by cattle and horses that use the area to graze has probably accelerated the processes of aeolian and colluvial deposition in the historic period through trampling and the reduction of ground cover.

Most subsquares in Stratum I contain fewer than five fire-altered rocks. Unusually high concentrations (10 or more) are found near Features 8 and 11 and in the southeast and southwest corners of the housepit. Subsquares with moderate frequencies cluster near those with higher frequencies especially closer to the rim. Charcoal is limited to small scattered flecks.

Features

Three features were found in Stratum I, all were located at the bottom of the stratum directly above Stratum IV (**Fig. 10**). Feature 5 (incorrectly designated Stratum II in 1987) is interpreted as a hearth feature used primarily for warmth. The feature is an irregular bowl-shaped depression approximately 60 cm x 80 cm and 7 to 8 cm deep at the center (Sq. G–Ssq. 1 & 5, Sq. C–Ssq. 3 & 4). The top of the feature corresponds to the contact between Stratum I and IV (roof). Fourteen small calcined bone fragments

were found in an oxidized yellowish-red matrix with a high sand content and few clasts. This pit may have been excavated and filled with soil from outside the housepit. However, based on personal observations I think it is more likely that the matrix was produced by the heat of a surface fire that eliminated any organics in the soil, fractured most clasts into sand-size particles, and reduced the clay content by cementing the clay particles with iron oxides (see Vol. I, Chap. 6). The depression may not have been intentionally excavated but merely the result of the logs from the fire disturbing the underlying matrix. No artifacts, charcoal, or fire-altered rock (> 4 cm) were found. The oxidized soil and the lack of charcoal indicates a very hot fire that would be inappropriate for smoking and drying hides. Therefore, the hearth was probably used as a source of heat, though the bone fragments suggest the hearth may have been initially used for cooking. Most of the debris from the hearth is assumed to have been dispersed by subsequent natural and possibly, cultural activities.

Feature 11, interpreted as a hearth, is also a bowl-shaped depression approximately 80 cm across and 14 cm deep at the center (Sq. K–Ssq.'s 4, 8; Sq. C Ssq.'s 1, 5, 9). The soil matrix within the hearth is darker and contains more fire-altered rock, charcoal, and granules then the surrounding matrix. However, the transition is not easily detected and the feature was not recognized during the excavation of Square C. Cultural material associated with the hearth includes: more than eight birch bark rolls (near the top at 212 cm DBD), burnt fragments of pine bark, a concentration of flakes (at 218 DBD), a hammerstone (at 219 DBD), a retouched flake, a biface fragment, a Plateau point base, large long bone fragments, and large pieces of charcoal. The lithics are primarily outside but surrounding the hearth. The large pieces

of charcoal and birch bark, and the absence of any fire-reddening of the soil suggests a cooler, slower burning fire more suitable for the smoking and drying of hides and/or meat. Since all other diagnostics associated with Stratum I are from the Kamloops horizon, the Plateau point is seen as intrusive and does not date the feature.

Feature 8 (Sq. G–Ssq.'s 11, 12, 15, 16) is interpreted as a possible roasting pit. This bowl-shaped depression is approximately 70 cm across and 20 cm deep at the center. The top of this feature corresponds to the contact between Strata I and IV. A Kamloops horizon point found at this contact in Subsquare 15 provides a relative date of 1,200 to 200 BP for the feature. The depression is filled with fire-altered rock and charcoal and contains a piece of unburnt mammal bone, 2 fish vertebrae and burnt bark. No fire-reddening was noted. Although it has an unusually small diameter, all other characteristics of the feature are consistent with its use as a roasting pit. The high concentration of organic debris found in subsquares 7 and 16 may result from the insulating vegetation used in the roasting pit and later discarded, while the charcoal concentrations noted in Subsquare 7 and 11 may be the scattered remains of a fire associated with pit use. Housepit 7 also has two similar features associated with a post-pithouse occupation (Vol. III, Chap. 5).

Artifacts

Most lithic material from HP 9 is vitreous trachyte. This lithic identification is based on a petrographic analysis of similar materials from HP 7. All previous reports on the Keatley Creek Site and most other Interior Plateau studies identify this material as basalt.

Given a colluvial origin for most of the surface deposits, the spatial patterning of the artifacts was expected to reflect the random effects of natural depositional processes rather than cultural patterning. In general, the artifact distributions in the upper portions of Stratum I seem to meet these expectations and it is unusual to find more than 1 or 2 flakes or tools in each subsquare. However, at the bottom of the stratum clear evidence of a living surface is found. The most obvious artifactual evidence is a concentration of large vitreous trachyte flakes and tools in the northeast corner of the housepit in association with Feature 11. Tools found in this area include a chert unifacial scraper, a bifacial scraper, a quartzite spall scraper, a vitreous trachyte Plateau point reworked into a possible hafted scraper, a retouched flake, four biface fragments, four bipolar cores, a multidirectional core, a piece esquillee, and a hammerstone. The hammerstone, cores, and large flakes suggest primary stages of core reduction, while the scrapers are indicative of hide preparation. The point and bifaces reflect hunting and meat preparation activities.

A second cluster of small flakes and a small multidirectional core is found in Square I. Other tools found in Stratum I include three Kamloops points, three point tips, a Kamloops point preform, a notch, a utilized flake, two retouched flakes, two biface fragments, and a bipolar core.

Stratum I diagnostics include three Kamloops Horizon side-notched points, one possible Kamloops Horizon preforms or failed point, and the base of a reworked Plateau Horizon point. The Kamloops Horizon material suggests a date between 1,200 and 200 BP. (Richards and Rousseau 1987) for the lithic concentration (and features) found at the contact between Strata I

and IV. The Plateau point probably represents a broken point found and reworked during the Kamloops post-pithouse occupation.

Flora and Fauna

In general, little or no charcoal, floral, or faunal material is found in the surface stratum. Presumably, the movement and subsequent weathering has destroyed any such remains washed into the housepit from the rim deposits. Almost all faunal material from this stratum was found at the contact with the underlying Stratum IV. Notable discoveries include a deer scapula (Sq. H–Ssq. 1), a deer tooth (Sq. D–Ssq. 9), a large bird bone (Sq. D–Ssq. 13), and a large mammal bone fragment (Sq. C–Ssq. 1). Although apparently unmodified, the deer scapula may have been used as a draw knife to beam skins (Smith 1900:420; Teit 1900:185-6). Birch bark rolls and burnt pine bark were associated with hearth Feature 11. More burnt pine bark was found in Square D (Ssq. 4).

Interpretation of Stratum I

The presence of two hearths, a possible roasting pit, and a lithic work area at the bottom of Stratum I and the absence of an overlying roof deposit clearly indicates a short term use of the housepit depression as a campsite or special activity area. Similar post-pithouse occupations are common at the Keatley Creek site, with evidence of cultural activities above the final roof collapse in HP's 4, 6, 7, 8, 90, and 110 (Hayden et al. 1986). All of these other occupations contain lithic scatters, five contain hearths, and one has possible roasting pits.

The lack of any postholes or other structural evidence suggests that no shelter was constructed. The idea that these activities took place in the open

is further supported by the concentration of cultural remains on the sunnier, and consequently warmer and better lit, north side of the housepit depression. Moreover, Feature 8 is most likely a roasting pit, a feature not built inside housepits because of the large amount of debris and smoke generated with its use, while hearth Feature 11 would have been unsafe to use if built close to a wall.

The living surface is near the contact between Strata I and IV, while most of Stratum I appears to have been deposited by natural agencies subsequent to any cultural activity in the housepit depression. This evidence indicates that this occupation occurred shortly after the collapse of the last housepit roof, perhaps relatively early in the Kamloops horizon.

The two most likely scenarios for the origins of the Stratum I occupation are (1) use of the housepit depression as a spring hunting camp after the Keatley Creek Site was no longer used as a winter village, or (2) use of the depression as a special activity area by people wintering in housepit in other parts of the village.

The primary subsistence activities represented in Stratum I are hunting, hide preparation, and possibly butchering, with the few faunal remains suggesting deer as a common prey. Although meat may have been cooked in the roasting pit, bones are scarce and most ethnographic accounts maintain that the underground ovens were used primarily for cooking plant foods (Alexander 1992:124-9). Stone tool manufacture also occurred. These activities are consistent with those expected at a short term hunting and plant gathering camp. Evidence of both men's (hunting and tool manufacture) and women's (plant roasting and hide preparation) activities suggests occupation by a family group. Deer hunting and plant gathering in

this environment usually occurred in the early spring (Alexander 1992:154-8) at which time nodding onion, prickly-pear cactus and mariposa lily, could be collected nearby. The small size of the roasting pit (Alexander 1992:128) indicates that relatively little food was cooked and that the pit was more likely used by a small nuclear family than a large extended family group. The division of the band into smaller groups is common after the long forced stay in the winter village, reinforcing the idea of a spring occupation in late March–early April. The lack of overlapping activity areas points to a single, short term occupation. Deer and plants would probably be scarce in the immediate vicinity of a recently vacated village, so it is unlikely that such a hunting camp would have been established while the village was still in use.

Alternatively, the housepit depression may have been used as a special activity area by a family living in a housepit at the village. Tool manufacture, and hide preparation are activities that took place in the village during the winter months (Teit 1906:239, 1900:185, 1909a:477, 722-3). These activities produced a lot of debris and would be commonly conducted outside the housepit in milder weather. The old housepit depression could have provided some shelter from the cold winds while undertaking these outside activities. Plant roasting also produced a lot of debris (Alexander 1992:128-9) and would have been undertaken away from any heavily used area, but it is unlikely that any fresh plants would have been collected for roasting prior to late March. This scenario seems less likely than that of a hunting camp for two reasons: (1) the large group size typically occupying a winter house would have required a larger roasting pit to cook sufficient food for the entire family, and (2) the activity areas should overlap reflecting use in different seasons and years.

Stratum IV: Roof

Soil Matrix

The soil matrix of Stratum IV consists of a loosely compacted, very dark grayish brown (10 YR 3/3) sandy loam. Unlike Stratum I, cobbles are almost always present and comprise anywhere from 3% to 10% of the matrix volume. Pebble content varies between 10% and 40% with most subsquares containing more than 20%. Granules are also common (15% to 20%) and like most pebbles, they are usually angular and often appear to be fire-altered. This high clast content is partially responsible for the generally loose texture of the roof deposits. Charcoal is either absent or limited to less than 10 small scattered fragments in each subsquare. The number of fire-altered rocks (> 4 cm across) varies from 0 to 30 or more, but is typically between 1 and 10. Although frequencies vary considerably from one subsquare to the next, the numbers of clasts, charcoal fragments, and fire-altered rocks are generally more frequent in Stratum IV than in Stratum I.

The matrix is relatively homogeneous from top to bottom, though clast content increases or decreases with depth in some subsquares. Roots and cicadas have caused only minor soil disturbances. The thickness of the deposit varies from 3–20 cm, with a mean of approximately 11 (**Figs. 3, 4, 5, 6, 7, 8, and 9**). No discernable pattern can be seen in these variations. This description of the soil matrix is typical of roof deposits at the site and probably represents the final and relatively sudden collapse of the abandoned housepit roof. The unusually dark and organic nature of the deposits (in comparison to other roof deposits) may be partially explained by the development of an A horizon soil on the roof during the last occupation or on the surface of the depression after the roof collapse.

Stratum IV is not present in every subsquare. At the outer edges of the excavation the roof deposits disappear as the rim Stratum (VII) deposits are encountered. Although roof and rim deposits are generally different in content and appearance, the interface between the two is commonly indistinct (see section on rim deposits). A blurred boundary is to be expected since the two deposits have similar origins, primarily roof construction and dumping events from interior house cleanings.

Features

No clearly discernable features were found in Stratum IV. During the initial test trench excavations, the excavators thought that they may have uncovered a hearth feature (misidentified as Stratum III) in Square C, Subsquares 12 and 16 (Jolly et al. 1987: 1). Subsequent excavations in adjoining subsquares produced no evidence of this potential feature (Iannone and Handly 1990) despite the fact that the trench profiles and floors plans show it extending into the area excavated in 1990. The only notable change in the neighboring Subsquares 9 and 13 (Sq. G) was a slight increase in the pebble and cobble content. The potential feature differed from the surrounding matrix in that it contained unusual artifacts including a fragment of a tubular steatite pipe, a common loon ulna, and fragments of fresh water mussel scattered among a high concentration of fire-altered cobbles. Given the context of the materials within a roof deposit, the irregular outline of the deposit, and the difficulty of distinguishing it from the surrounding matrix, it seems most likely that these materials do not represent a feature but merely materials cleaned from the hearths and floors and dumped on the roof of the housepit.

Artifacts

Stratum IV contains only half as many modified artifacts as was found in Stratum I (surface) and most subsquares have two or fewer flakes. A hammerstone and spall tool found in Square G (Ssq.'s 12 and 15) were located close to the contact between Stratum I and IV and near Feature 8, and it is possible that these tools are part of an assemblage of similar artifacts from the post-pithouse occupation in Stratum I. Other artifacts include a mica ornament (Sq. D–Ssq. 13), two bipolar cores, two small flake cores, a notch, a utilized flake, 4 biface fragments, and a piece esquillee.

The most notable artifacts from the Stratum include three conjoinable fragments of a tubular steatite pipe found in Square C (Ssq.'s 1 and 12) near the interface between Strata IV and VIa. The pipe is ground and polished on the outside and the bowl fragment displayed a raised rectangular area with five incised vertical lines. Tubular pipes were the most common form in the past and chiefly used by men (Teit 1900:300-1, 382, 1909a:575; Smith 1899:154, 1900:428-9). This pipe form is usually associated with the Kamloops horizon (Richards and Rousseau 1987:46). The presence of a Kamloops horizon point (Sq. D–Ssq. 11) supports the conclusion that this stratum was deposited somewhere between 1,200 and 200 BP. A point stem (Sq. H–Ssq. 10) with contracting sides is interpreted as intrusive artifact from an earlier deposit.

A bone pendant was also found in Square C (Ssq. 9) in association with many fire-altered rocks.

Fauna and Flora

Faunal remains are very uncommon in Stratum IV. Fish bones and large fragments of mammal bone are typically absent with most subsquares

containing only a few small fragments of mammal bone. Similar low frequencies occur in roof deposits from other housepits at the Keatley Creek Site (Kusmer 1987). Notable faunal remains include a few salmon bones, a canid metatarsal, three beaver incisors (Sq. C–Ssq. 7 and Sq. D–Ssq. 10), a deer scapula (Sq. C–Ssq. 7), fresh water mussel fragments (Sq. C–Ssq. 11 and 12), and a common loon ulna (Sq. C–Ssq. 12). A beaver incisor may have been used as a knife to carve or incise wood or stone (such as steatite and jade) (Teit 1900:182, 1909a:473-4, 1906:203; Smith 1900:416, 440, 1899:44), as an arrow point (Teit 1906:225, 1909a:519), or as a women's gaming piece (Teit 1906:248, 1900:272-3, 1909a:564, 1909b:785; Smith 1899:153). The low and relatively even distribution of small fragments of ungulate bone in the deposits indicate little or no butchering and processing activities took place on the roof.

Floral remains are rare with only a few small scattered pieces of charcoal and no evidence of pine or birch bark.

Interpretation of Stratum IV

Stratum IV is interpreted as soil that was originally placed on the roof of the housepit during the occupations represented by floors in Stratum VIb and VIII. The more or less continuous distribution of soil across the house depression probably reflects the placement of soil over a post framework in the initial construction (see Teit 1900:192-5, 1909a:492-3, 1906:212-4; Boas 1891:633-35; Dawson 1892:7; Laforet and York 1981). The small localized and heterogeneous concentrations of fire-altered rock and/or faunal and lithic remains are interpreted as the subsequent dumping of household debris on the roof.

The matrix composition is similar throughout Stratum IV suggesting that much of the roof collapsed quickly when the underlying post framework collapsed due to fire, weathering, or the removal of posts and poles for other uses. No evidence of burnt posts or postholes were found during the excavation of Stratum VI or VIII (as in similar excavations in HP's 3 and 7). If the occupants of HP 9 constructed the roof using the ethnographic pattern, then the posts were most likely removed. Alternatively they may have constructed a roof similar to the A-frame used in lodge construction with the support posts placed outside the house depression. Irregularity in depth of the deposits probably results from the uneven removal of the posts and poles or the nature collapse of the structure and the funneling of deposits between still standing posts.

Some of the roof deposits were subsequently reworked. Gravity, wind, water, and animal activity would have moved some roof deposits from higher to lower slopes and reduced surface irregularities. Human activity, as represented by the post- housepit occupation in Stratum I, may have had similar effects and would also have further mixed the roof deposits by trampling and the excavation of a roasting pit and construction of two hearths. Any cultural patterning resulting from cultural activities conducted on the roof or from the storage of materials in the roof rafters during the housepit occupation may have been largely destroyed by the roof collapse, and subsequent cultural and natural events. This can only be determined by more detailed analysis than that undertaken for this report. Since the bone pendant, pipe fragments, loon bone, and dumping events are located at the bottom of Stratum IV, it seems most likely that they were deposited by the

housepit occupants who deposited the earlier Stratum VIII (floor) rather than those who deposited Stratum VIb (floor).

The low frequencies of lithic and faunal remains in Stratum IV suggest that few cultural activities took place on the roof during the housepit occupation, and that little secondary refuse was dumped on the roof from internal housepit activities. On the other hand, the underlying floor deposits are relatively thick, suggesting a long occupation. The unusually dark and organic nature of these roof deposits is most likely due to soil formation processes on a roof, which stood for an unusually long time.

Stratum VI (Filtered Roof and Floor) and Stratum VIII (Floor)

Strata VI and VII are the most unusual, and were the hardest to excavate and interpret of all of the living surfaces encountered in the large scale housepit excavations. In the center of the housepit (where the excavations began), the relationship between the two strata seemed relatively clear. For the most part, Stratum VI consisted of deposits that were similar in appearance and content to filtered roof deposits found in other housepits, that is, roof deposits that had filtered through an abandoned but still largely intact roof. The appearance of fish bone and flake concentrations in the middle of the stratum was somewhat problematic, but a strong argument was made for its interpretation as a temporary occupation of an abandoned housepit. The thickness of the deposit was attributed to the roof being repaired with additional soil during its reuse as a temporary shelter. Stratum VIII was generally slightly darker and more compact than VI, but was most commonly recognized by the sudden appearance of unusual high densities of fish and other bones. The

appearance and content clearly indicated a housepit floor, resting on top of an earlier roof deposit (Stratum XII) (**Figs. 3, 4, 5, 6, 7, 8, and 9**).

Problems of recognition and interpretation became more difficult as the excavations expanded toward the wall. In many parts of the housepit the cultural material in Stratum VIII largely disappeared approximately 1.5 m from the wall. In many cases, this change coincided with the appearance of a large cobble concentration in Stratum XII that rose up into Stratum VIII. Closer to the wall were found thick deposits with very high densities of cultural material **(Figs. 11 and 12**). Excavators responded to these variations in the strata in three ways:

(1) Stratum VIII was seen to end where the rocks began and the dense deposits near the wall were excavated as part of VI (found at more or less at the same depth);

(2) Stratum VIII was seen to rise up and over the rocks with most of the dense cultural material near the wall (that was found in the lower portion of the deposits) excavated as part of Stratum VIII; and

(3) In areas where the cultural material was abundant even at the contact with Stratum IV, Stratum VIII was again seen to rise up and over the rocks, but only the lower half of the dense deposits were excavated as Stratum VIII.

Being aware of the difficulties in distinguishing between these two strata, excavators began recording the depths of individual artifacts from these strata. Cross-sections of the strata and cultural material using these depth recordings clearly indicated that Stratum VIII was continuous from the center of the housepit to the wall (**Figs. 11, 12, 13, and14**). These plots also

strongly suggested that these deposits were often very thick near the wall (as much as 30 cm) with their upper surface often 20 cm higher at the wall than at the center of the housepit. Stratum VI deposits, on the other hand, were relatively thick near the center (generally 15 cm) but thinned to a few centimeters where Stratum VIII deposits formed a mounded surface.

This interpretation of the deposits is consistent with ethnographic data that suggests a 1.5 m wide sleeping platform was constructed around much of the inside wall of the housepits (Bouchard and Kennedy 1977:64). The thick deposits at the outer edge of Stratum VIII could represent cultural material cleaned from the floor and dumped under the 30 cm high benches. The portions of Stratum VIII with little cultural material may have been under the logs used to construct the inner face of the platform, while the mounds of rocks which are part of Stratum XII were left in place or dumped under the bench after leveling the rest of Stratum XII in preparation for the VIII occupation. Stratum VI deposits then accumulated largely in the center of the housepit where the old benches or mounded remains did not exist. This pattern is consistent with the interpretation of Stratum VI as a temporary occupation where little effort would be spent to clear the structure for reuse.

Other characteristics of the material assemblage are consistent with this interpretation of Stratum VI and VIII. The deposits along the wall are extremely variable with the frequency of cobbles, debitage, fish, charcoal, and fire-altered rock changing dramatically between levels and subsquares. Excavators report that artifacts were sometimes found amid clusters of rocks and charcoal. The matrix also contains pockets of very different soils, such as fire-reddened silts or sterile tills and silts. These patterns are consistent with

small baskets of material cleaned from the floor or hearth being dumped under the bench.

The variety and quantity of cultural material excavated from these strata was greater than that found in any other small housepit at the site. If this unusual assemblage was from both a temporary occupation and a long housepit occupation, it would be very difficult to explain. If however, all the high densities of material along the wall are from Stratum VIII, then Stratum VI would contain a relatively low variety and quantity of material and could be easily explained within the context of a temporary camp. Including all the dense material around the wall as part of Stratum VIII would also help to explain the distribution of many of the unusual items. Loon bones are unique to HP 9 and were found only in association with deposits excavated as Strata IV, VI, and VIII. Six dentalium shells, uncommon at the site, were only found in deposits excavated as Stratum VI (Sq. H–Ssq. 16, Sq. I–Ssq. 1) and VIII (Sq. H–Ssq. 12, Sq. I–Ssq. 9, Sq. K–Ssq. 8, Sq. D–Ssq. 11). Large pieces of worked antler were also associated with Stratum VIII (three pieces, two from Feature 6 fill associated with VIII) and VI (Sq. C–Ssq. 5). If the finds along the wall were considered part of Stratum VIII, then with the exception of the loon from the roof, all of these items would have been from Stratum VIII. All of the high fish bone counts would also be from Stratum VIII.

If this interpretation is correct, then it becomes very difficult to analyze the cultural material from these two strata as separate assemblages, since materials excavated along the wall and catalogued as Stratum VI are actually from Stratum VIII. They could be re-catalogued for future analyses but this work was not possible prior to this report. Stratum VI does fortunately have a relatively low density of materials, so that in examining the two strata as a

single assemblage Stratum VI largely becomes background noise in the analysis of Stratum VIII. On the other hand, it is difficult to make anything more than general statements about the Stratum VI assemblage. These two strata are discussed below in more detail.

Stratum VI: Filtered Roof and Floor

Soil Matrix

The soil matrix is a loosely compacted, dark brown (10 YR 4/3) sandy loam. Unlike other previously mentioned strata, Stratum VI sometimes has a mottled appearance due to cicada activity that has moved a lighter colored soil into the matrix from lower strata. Cobbles are usually present and although they can comprise anywhere from 1–20% of the matrix by volume, they generally constitute less than 5%. Both pebble and granule content ranges from 5–40%, with most subsquares containing 10–20% of each. Although the number of clasts in each subsquare often varied from top to bottom there was no apparent pattern to these variations. Fire-altered rock (> 4 cm) is often absent, and frequencies are rarely higher than five per subsquare. Higher counts of up to 21 appear to be restricted to deposits reclassified as Stratum VIII. Charcoal is usually present as a thin scatter of small flecks but it is absent from some subsquares. Subsquares containing a few large pieces (2 or 3 cm across) also seem to be from Stratum VIII. In general Stratum VI is lighter in color, more mottled, contains more charcoal, and includes less fire-altered rock, cobbles, pebbles, and granules than Stratum IV (roof). Nevertheless, most characteristics of Stratum VI are those of a roof deposit (Hayden et al. 1986, 1987).

The presence of a relatively fine textured roof capped by a coarser textured roof is common in housepit deposits at the Keatley Creek Site. The finer deposits have been termed "filtered roof" (Vol. III, Chap. 4, and 5). They are interpreted as roof material that filtered through the wooden superstructure of the housepit prior to the final collapse of the roof. The matrix is generally finer in nature because the larger clasts placed on the roof during initial construction and subsequent dumping events were prevented from falling to the floor by the unburnt or undecayed poles and branches in the roof framework. The matrix of Stratum VI is consistent with a filtered roof deposit.

The cultural remains clearly indicate the presence of a living surface or floor within Stratum VI (see following sections). The living surface seems to be a very thin deposit sandwiched approximately mid-way in this filtered roof stratum. The thickness of the Stratum VI deposits varies from 6 to approximately 25 cm. All thicker deposits (up to 38 cm) of Stratum VI at the outer edges of the excavation have been reclassified as Stratum VIII. But, thick or thin, the living surface is still approximately in the center.

In most cases the living surface can only be recognized by the concentration of cultural remains lying horizontally across the subsquare. Consequently, where the density of cultural material is very low, the floor is difficult to isolate. In a few subsquares the artifacts are in a deposit of 1–3 cm that is darker, more compact and finer than the surrounding matrix and the living surface is easier to recognize. Deposits above and below the floor generally contain little, if any, cultural material.

In the 1990 report, Stratum VI was subdivided into three parts: VIa corresponded to the uppermost filtered roof deposits, VIb corresponded to

the floor deposits, and VIc corresponded to the lower filtered roof deposits. Some attempt was made in 1990 and 1991 to excavate this stratum according to these three designations. Unfortunately, the floor deposits were often difficult to distinguish from the surrounding filtered roof and the arbitrary excavation levels within Stratum VI did not always correspond to these three subdivisions. In order to determine which excavation level in any subsquare corresponds to the floor deposits, it is sometimes necessary to examine the recorded depths of individual faunal and lithic remains.

Like Stratum IV, these filtered roof deposits are not present in every subsquare. At the outer edges of the excavation the filtered roof deposits blend into the rim slump deposits and disappear. This phenomenon is most evident along the north and south sides of the excavation. The boundaries are further confused by the activities of rodents whose skeletal remains and burrows filled with pacoon seeds (*Lithospermum* spp.) sometimes occur near the walls (Sq. D–Ssq. 5, Sq. H–Ssq. 10, Sq. G–Ssq.14).

Features

Two features were encountered at the bottom of Stratum VI: #1–a possible collapsed, rock retaining wall and #6–a large storage pit. Neither feature appears to be associated with the cultural activities represented by Stratum VI.

Artifacts

Flakes are generally more numerous in this stratum than Stratum I or IV. Almost all subsquares contain at least one flake, with an average of two to five flakes. Vitreous trachyte dominates the assemblage but some jasper and

chert flakes are also present. Most of the flakes are lying horizontally on the floor in the middle of these deposits.

An early Kamloops horizon point (ca. 1,200 BP) was located at the bottom of the stratum (Sq. H–Ssq. 9) where it came into contact with Stratum VIII. Since the living surface in Stratum VI is located in the center of the deposit, this point probably does not date the floor. It may date the bottom of the filtered roof or, more likely, the top of Stratum VIII (Floor). Two Plateau horizon points were found in deposits near the south wall (Sq. B–Ssq. 3, Sq. F–Ssq. 5) that have been reclassified from Stratum VI to a dump in Stratum VIII.

Two notable artifacts are clearly from Stratum VI floor: a hide endscraper (Sq. G–Ssq. 1) and a chert, bifacial drill (Sq. H–Ssq. 9). The most notable artifacts in the Stratum VI assemblage were a ground nephrite adze (Sq. K–Ssq. 8) and a distal fragment of a ground nephrite adze (Sq. D–Ssq. 6) both found at the contact between Stratum IV and VI. It was most likely deposited by occupants of either floor VIb or VIII. A similar adze fragment was found in the roof of HP 3 (Vol. III, Chap. 4).

Fauna and Flora

In Stratum VI, few subsquares contain more than 10 faunal remains and only a few of these remains are from the filtered roof deposits that typically produce only one or tow small fragments of mammal bone/subsquare. Most of the mammal bone fragments and all of the fish remains seem to be from the floor deposits. Based on the faunal analyses from other housepit excavations, most if not all of the fish are salmon and probably much of the mammal is deer (Kusmer 1987). Most of the larger identifiable remains were

found along the wall in deposits reassigned to Stratum VIII. Although difficult to assess without re-cataloguing, it would appear that the frequencies of fish and other bone on the floor in Stratum VI is similar to that found on other housepit floors at the site (Ibid).

No birch or pine bark was uncovered in Stratum VI and the scattered wood charcoal did not exceed 4 cm in size.

Interpretation of Stratum VI

The top (VIa) and bottom (VIc) portions of Stratum VI are interpreted as filtered roof deposits resulting from soil falling through the wooden superstructure of a standing, and largely intact, but decaying pithouse roof. These filtered roof deposits are unlike any known floor deposits. While floor deposits are often compacted by trampling, Stratum VIa/c has a loosely compacted matrix. The high clast content is also atypical of floor deposits that are presumably cleared of most larger clasts to provide an even living surface. Like roof deposits where weathering destroys many organic remains, Stratum VIa/c has a low density of mammal bone and no fish bone or floral material. On the other hand, refuse left on the floors is deposited in a more protected environment with the result that floor deposits contain many fish remains. The lack of features and the low density of lithics with no discernable distribution pattern also argues against use of Stratum VIa/c as a living surface. The characteristics of Stratum VI, like roof deposits, seem to reflect the unintentional redistribution of lithic material collected during house cleanings and dumped on the roof and the mixing of roof deposits caused by the uneven collapse of the roof. In fact, all roof deposits contain

similar evidence but the relatively low frequency of larger clasts suggests a filtered deposit.

The presence of a floor deposit (VIb) in the midst of the filtered roof is indicated by:

(1) the sporadic occurrence of a thin deposit of darker, finer and more compact soil;

(2) artifacts lying horizontally at approximately the same depth across a subsquare;

(3) the increased frequency of mammal bone and lithics; and

(4) the presence of fish bones, some of which are articulated.

Along the wall, floor-like deposits with high densities of lithics, mammal bone and fish bone (only some of which were lying horizontally) were initially identified as dump deposits in Stratum VI, but have been reinterpreted as Stratum VIII.

The build-up of filtered roof deposits at the bottom and top of Stratum VI suggests that the housepit was allowed to slowly decay both before and after the occupation represented by the Stratum VIb (floor) deposits. Unlike other housepits at the site, there is no evidence of burnt bark, planks, and poles to suggest that this housepit was burnt. The presence of rodent burrows and mandibular and skeletal elements in three squares lends credence to the claim of a long abandonment with a standing roof.

The relatively thick filtered roof (VIa) and roof (IV) deposits above the floor (VIb) indicates that most of the original roof was still standing during the occupation. In fact, the combined depth of Stratum VI and IV suggests an unusually thick roof with depths varying from 20–43 cm (median = 30). This evidence raises the possibility that minor repairs may have been carried

out and some additional material was placed on the roof during the VIb occupation.

The available evidence suggests that the Stratum VIb (floor) deposits represent a relatively short occupation. The general lack of organic staining, a relatively thin floor deposit, low frequencies of tools and bone, and the absence of any associated pit or hearth features indicate a short stay. The low frequency of debitage and the lack of small debitage on the floor and roof also suggest that little, if any, lithic reduction took place during this occupation. This evidence suggests that Stratum VIb may not represent a typical winter occupation but rather a short term hunting camp like that described for Stratum I.

Stratum VIII: Floor

Soil Matrix

The matrix of Stratum VIII is a moderately compacted, very dark grayish brown (10 YR 3/2) silty loam. Like Stratum VI, it is sometimes mottled with lighter colored soil due to cicada activity. Cobbles generally occur in about the same frequency as in Stratum VI, i.e., less than 5% of the matrix by volume. However, in some subsquares the percentage of cobbles rises to 40–50%. These localized occurrences are associated with shallow pits (see Feature 10 below), underlying rock features (see Feature section in Stratum XII), and dump deposits around the margin of the floor. Pebble content varies from 5–40% as in Stratum VI, but the average in Stratum VIII is slightly higher with most subsquares containing 10–30%. Granules, on the other hand, are lower in Stratum VIII with most subsquares commonly containing 5–10%.

The frequency of fire-altered rock (> 4 cm) is generally low with many subsquares containing none, and most with less than 5. Higher frequencies occur in the northeast and southwest corners of the housepit (**Fig. 15**). Charcoal typically consists of a thin scatter of small flecks, though a few larger pieces were found in association with the fire-altered rock concentrations.

The overall impression is that Stratum VIII is darker, more compact, and contains more cobbles and pebbles, and fewer granules than Stratum VI. The thickness of the deposits varies from about 10 cm in the center of the housepit to as much as 30 cm at the wall.

Although rodent activity is evident in Square D (Ssq. 2 & 12), Stratum VIII generally contains much less rodent disturbance than Stratum VI.

Features

Stratum VIII contains evidence of two hearth features, both in Square G. Feature 4 consists of a 5 cm thick lens of fire-oxidized and reddened soil in underlying Stratum XII. As discussed in the description of the hearth in Stratum I, this fire-reddened lens probably represents physical and chemical changes to the underlying stratum, rather than an intentionally excavated pit. The original hearth may have been larger than the 58 cm diameter area of fire-reddening that is largely intact in Square G–Subsquares 5, 6, and 9, but has been obliterated by a depression in Subsquare 10 (see Feature 10 below).

A thin (2 cm) layer of black humic soil over the fire-reddening may also be a remnant of the hearth, though it seems centered further to the south than the fire-reddening. The additional 3–6 cm of Stratum VIII capping the

feature suggest that the hearth was used early in the occupation. Although fish bones and lithics are common in deposits above this feature, only seven calcined bone fragments are clearly from the feature. No fire-altered rock and only a few small flecks of charcoal were found in association, suggesting that most of the hearth debris was cleared away by the housepit occupants.

The second hearth (Feature 7) is indicated by a patch of fire-reddened soil in Subsquare 1 extending 7 cm into Stratum XII (**Fig. 4**). The fire-reddening undoubtedly extended into the test trench and Subsquare 5 but it was not noted during excavation. The lack of charcoal and fire-altered rock above the fire-reddening indicates that these hearth remains were also cleared from the housepit floor before subsequent occupations. The smaller area of fire-reddening (30 to 60 cm across) suggests that this hearth was smaller than Feature 4, though house cleaning may have removed part of the fire-reddening.

Feature 3 is a small, shallow, bowl-shaped pit in Square H (Ssq.'s 9 & 13). It is 25 cm across and extends 8 cm into the underlying Stratum XII. The pit is filled with dark deposits containing many rocks and some fish bone similar to the floor deposits that cap the feature. This pit is too shallow for a posthole but may have been used as a small cooking or boiling pit.

The largest feature in the housepit is a large bowl-shaped storage pit (Feature 6) abutting the south wall in Squares D and H (**Figs. 2, 4, 6, and 9**). As is often the case with large pit features, the stratigraphy around the pit is complex and sometimes hard to interpret. Stratum X (floor) deposits end at the edge of the pit, leading excavators to speculate that the pit was initially built by Stratum VIII occupants who excavated through floor X (Iannone and Handly 1990). However, the sterile deposits seem to be mounded up around

the edge of the pit and the floor X deposits ride up and over this raised rim, indicating that floor X was deposited after the pit was excavated. Stratum X deposits also seem to extend around the western edge of the pit into an alcove in the wall created by pit construction. Therefore, the pit was probably originally excavated by the occupants of Stratum X (floor).

The pit was subsequently filled with a dark brown, loosely compacted, sandy loam (Fill Unit 2-B). This fill unit contained three layers that differed in their clast content but were difficult to distinguish in profile or during excavation. Therefore, this fill was excavated as a single unit using 10 cm arbitrary levels. The upper three levels (corresponding to the top layer) contained many large cobbles and boulders (20%) and 20% pebbles and granules. The middle layer (Level 4) contained only 10% cobbles but 30% pebbles and granules, while the bottom layer (Levels 5-7) had 5% cobbles and 25% pebbles and granules.

In general, Fill Unit 2-B contains a lot of fire-altered rock, a few small pieces of mammal bone (some calcined), and a few flakes (mostly large), but no diagnostics or tools. Excavation levels corresponding to the uppermost layer also contained a large distal mammal phalanx, while the middle layer included a largely intact mussel shell and a piece of worked bone (possibly a needle fragment). Fish bone is common throughout but is exceptionally high (hundreds of ribs and vertebrae) in the lowest layer that also contained a few birch bark rolls, a mussel shell fragment, and a small mammal phalanx. The high density of fish remains at the bottom suggests that the pit was originally used to store fish, perhaps with birch bark used to wrap the fish and/or line the pit. The type, quantity, and distribution of faunal remains in

this pit is similar to that noted in many other storage pits at the site (Kusmer 1987).

These deposits appear to represent the rapid filling of the pit with floor and hearth deposits cleaned from inside the housepit. This is also a common practice in other housepits (Hayden et al. 1986). The pit may have been filled in and abandoned, either in favor of basket storage, or the use of an external cache pit and/or because of the decomposition of fish stored in the pit. The cache pit just beyond the housepit rim may have been used as an alternate storage area. A test of this cache revealed a V-shaped pit (4.4 m x 4.5 m across and 0.4 m deep at surface) filled with debris, including: deer and other mammal bones; fire-altered rock; and a few flakes, but no fish (Vol. III, Chap. 11.9). The lack of fish suggests that it may have been used to store other foods or goods.

Along the western edge of Feature 6, collapsed roof deposits (Stratum XII) seem to over-ride this pit fill, suggesting that the pit was filled in by floor X occupants prior to their final housepit abandonment. The cultural material in Fill Unit 2-B should therefore be the product of the Stratum X occupation.

After the roof collapse, a second smaller pit was excavated into the center of these deposits removing most of the roof deposits (XII) and some of Fill Unit 2-B. This practice of using the softer and more easily excavated pit deposits for a new pit was also noted in other housepits (Vol. III, Chap. 5). This second pit was also filled in though it appears to have remained open for some time judging by the yellow loam deposits that seem to have accumulated prior to the pit being filled with a very rocky matrix. The dark brown, silty loam matrix was notably rockier and less compact than the

surrounding matrix, with 10% cobbles, 30% pebbles and granules, and a lot of fire-altered rock. The pit was wide near the top but quickly narrowed to 50 cm across. The fill contained few fish bones, mammal bone fragments or flakes. Notable finds include a beaver incisor and a Kamloops horizon point.

The filling of this pit left a shallow depression in the floor that was initially capped with a yellow brown loam then filled with a soft, dark, silty loam. Cultural material from Fill Unit 1 includes numerous fish, a few mammal bone fragments, a possibly canid bone, a few birch bark rolls, a beaver incisor, a small worked antler fragment, and a few shell fragments. At the top of the deposit, patches of orange soil and charcoal indicative of the dumping of hearth materials were found. The fill was capped by a concentration of large rocks and fire-altered rock, and included a very long piece of antler split lengthwise and beveled at the end. A Kamloops horizon point was also found near the top of this pit fill.

A thick deposit of Stratum VIII caps the pit fill indicating that Fill Unit 1 and Fill Unit 2-A were deposited by the residents of Stratum VIII (floor) but that the pit was not used in later stages of this occupation.

The initial pit excavation was approximately 130 cm across and 80 cm deep. Similar large storage pits were found in two large housepits (HP's 1 and 7) while pits half the size were noted in medium and small sized housepits (HP's 3, 12, 90, and 110) (Hayden et al. 1986, Rousseau & Handly 1989). This evidence suggests that this pit is unusually large for the size of this house.

Feature 10 (**Fig. 20**) is a shallow (< 10 cm), circular depression approximately 55 cm across. The pit has a flat bottom and although it has a gentle slope on the western edge, it is steeply edged on the east where it

cuts into Feature 4 and Stratum XII. The top of the depression corresponds to the contact between Stratum XII and VIII. The fill matrix contains many rounded cobbles (40%) and is darker and less compact than the surrounding Stratum XII. No fire-altered rock or other cultural material was found in the depression.

A similar rock filled depression (50 cm across) was noted in Square D (Ssq.'s 13 & 14). Again the matrix is dark and filled with rock (30% cobbles and 20–30% pebbles), but contains no cultural material. The interpretation of these depressions is problematic. The lack of cultural material indicates that they were not casually filled with deposits cleaned from the housepit floor as are most pits. This suggests that the pit was designed to hold the rocks found in the pit. No evidence of a fire or food is present to suggest cooking or drying. My only suggestion is that they were used as a platform for wet objects such as large baskets containing water or soaking hides.

Artifacts

Debitage is frequently absent from Stratum VIII and when present, rarely exceeds three flakes per subsquare. Most subsquares containing 5 or more flakes cluster along the wall. The one exception is a cluster near the hearth features (**Fig. 16**). Almost all of the flakes are black vitreous trachyte. In general, the debitage density is similar to that in Stratum X (floor), but may be slightly lower than that in Stratum VIb (floor).

Two Kamloops points from the cache pit fill (FU2-A, FU1) can be used to date this occupation to 1,200 to 200 BP. A small point tip from Square D (Ssq. 15) may be used to support the claim for a Kamloops floor and an early Kamloops point from the bottom of Stratum VI (Sq. H–Ssq. 9) may also date

the Stratum VIII occupation. Four Plateau horizon points (Sq. D- Ssq. 8, Sq. F–Ssq.'s 1 & 5, Sq. B–Ssq. 3,) and a Shuswap horizon point (Sq. G–Ssq. 7) are interpreted as tools from an earlier occupation.

Over 100 modified artifacts were excavated as part of Stratum VIII or VI. Subsquares containing five or more modified artifacts tend to cluster in more or less the same locations as the debitage (**Fig. 17**).

The most common modified artifacts are retouched flakes (30), bipolar cores (13), and utilized flakes (15). Various forms of points (8), scrapers (11), and bifaces (9) are less common. Other cores (3), notches (3), piercers (1), drills (2), denticulates (1), and piece esquilee (2) occur infrequently. Although it is difficult to make accurate assessments at this time, I estimate that 80% of these tools are actually from Stratum VIII.

Fauna and Flora

Fish bone counts are exceptional high in Stratum VIII. It originally appeared that dense concentration were also found in Stratum VI, but cross-sections of the soil profiles (**Figs. 11, 12, 13, and 14**) indicate that these concentrations are actually part of Stratum VIII. The combined figures for Stratum VIII and VIb provide a good idea of the unusually large quantities of fish in Stratum VIII, although perhaps 10% of these fish are actually from the floor in Stratum VIb. Together, Stratum VIb and VIII produced over 3,300 fish bones, approximately five times the frequency seen in Stratum X (floor) and ten times that seen in other stratum. Despite their larger floor area, floor deposits from other housepits at the site produced much lower frequencies, e.g., HP 12 had approximately 30, HP 30 had 560, and HP 7 had 2,400.

In approximately 1\3 of the subsquares, fish bones were either absent or present in low frequencies (< 10/subsquare) (**Fig. 18**). Much higher frequencies were found in 15 subsquares, including two small areas in Square G (Ssq.'s 12, 5 & 6), most of Square D, and a few adjoining subsquares in Squares C (Ssq. 2) and H (Ssq. 6, 9 & 13). These higher concentrations seem to represent both activity areas and dump deposits. Some articulated fish bones in Square D were associated with ochre staining.

Non-fish bone are relatively abundant in Stratum VIII, with much higher frequencies in Stratum VIII than in other floor deposits in HP 9 or in other housepits (**Fig. 19**). Nevertheless, the combined frequencies of non-fish bone from Stratum VIII and VIb are less than 10 for approximately 3/4 of the subsquares. Burnt mammal bone is uncommon. Notable mammal finds include as many as seven beaver incisors and two molars, one canid tarsal, six artiodactyl teeth, and one femur.

Big horn sheep are exceptional abundant in HP 9 and seem to be largely associated with Stratum VIII. Four teeth fragments are clearly from Stratum VIII, 8 more teeth fragments and a phalanx were found in deposits reclassified from Stratum VI to VIII (Sq. G), and a carpal and 3 horn fragments were located in a small depression at the contact between Stratum XII and VIII (Sq. D–Ssq. 12).

Large pieces of worked antler are also unusually common in HP 9, with some pieces associated with Stratum VIII. A large fragment of worked antler (probably elk) was found at the contact between Stratum VI and VIII (Sq. C–Ssq. 5), while a large elk antler fragment recovered from pit (Feature 6) deposits associated with Stratum VIII was split with one end worked into a possible wedge (a second artiodactyl antler fragment was found in the same

deposits). Nineteen charred and incised bone fragments were also excavated from Stratum VIII.

The only common loon (*Gravia immer*) bones from the site were found in HP 9. All may be associated with Stratum VIII. One ulna was found in F.U.1 of Feature 6, a deposit associated with the Stratum VIII occupation. An ulna and fibula were also excavated from deposits reclassified from Stratum VI to VIII. Finally, an ulna was recovered from Stratum IV (roof) in the same dump as the steatite pipe fragments and may also have been deposited during the Stratum VIII occupation.

Six dentalium shells (Sq. D–Ssq. 11, Sq. H–Ssq.'s 12 and 16, Sq. K–Ssq. 8, Sq. I–Ssq.'s 1 & 9) and two shell beads (Sq. I–Ssq. 1, Sq. F–Ssq. 3) were found in Stratum VIII, with all but one located close to the wall. No floor at the site has produced so many shell ornaments.

The only notable floral remains, birch bark rolls, were found in the pit fill of Feature 6.

Interpretation of Stratum VIII

Based on the horizonal placement of artifacts and bones, the low frequency of flakes, the abundance of fish and bone remains, and the presence of hearths and pit features, Stratum VIII is clearly a floor deposit. The Kamloops horizon points associated with this stratum suggest the floor was occupied somewhere between 1,200 and 200 BP. Ethnographic accounts suggest a housepit of this size would have a resident population of approximately 15 people (Teit 1900:192) or three nuclear families.

The foundation for these floor deposits is unusual. In most housepits at the site, all earlier floor, roof and rim spoil deposits were removed from the

housepit prior to a new occupation, with earlier floors only present as small remnants at the outer edges of the floor. Multiple floors are only present in HP's 47, 101, and 110–all small housepits. In HP's 110 and 47, the lower floor has no capping roof deposits. Both of these probably date to the Plateau horizon, leading to speculation that Plateau housepits had no, or little, soil on the roof (Rousseau and Handly 1989). This may explain why underlying Stratum XII, a Plateau roof deposit is also relatively thin, and suggests that floor VIII residents removed little soil from the depression. Large rock accumulations associated with Stratum XII (roof) are either largely intact roof deposits or roof deposits cleared from the center of the floor and deposited under the benches. Perhaps the unusually high cobble content discouraged normal removal of underlying deposits. The soil matrix of Stratum VIII also contains an unusually high frequency of cobbles, possibly related to the failure to remove these underlying rock accumulations (**Fig. 20**).

Small pockets of softer, finer sediments were noted in Square G (Ssq.'s 3, 7, 11 & 12) in association with a large rock accumulation. These pockets (ca. 10–15 cm across and 5 cm deep) were interpreted by one excavator as possible alluvial deposits. Similar pockets were also found in Stratum VI in the same general area. Such alluvial deposition would imply that water flowed into the housepit and over the floor and filtered roof while the roof was still standing. Perhaps this area of the roof was less secure and allowed water, captured in the shallow basin to the west of the housepit, to drain into the structure. This phenomena has not been noted in other housepit deposits.

The only evidence of hearth features is the fire-reddening in underlying Stratum XII (Features 4 and 7). The debris from the hearths that produced this reddening appears to have been cleared away in later Stratum VIII occupations. In fact, clear intact hearth features are rare at the site. One exception is associated with a Plateau horizon floor in HP 110, and may be used as an example of what the hearths in HP 9 looked like before cleaning. This basin-shaped hearth is 75 cm in diameter and is topped with 7–13 cm of black soil mottled with ash and fire-reddened deposits. The soil contains charcoal, several pieces of fire-altered rock, calcined bone fragments, a leaf-shaped biface, and a few flakes (Rousseau and Handly 1989). Under this deposit is 3–7 cm of fire-reddening similar to the deposits found in Stratum VIII.

This evidence leads to the conclusion that the hearths may have been cleared away (and perhaps subsequently relocated) on a regular basis. Perhaps the hearths were not used every day and were removed when not in use to provide more general floor space. No hearth features were found near the top of the deposits, suggesting that the last hearth was cleared prior to abandonment. Cultural debris may seem to cluster around older hearth features because subsequent hearths and associated activities would probably occur in much the same location. This claim is supported by the fact that Features 4 and 7 are close together.

Relatively few stone tools or flakes were found in or on the Stratum VIII floor, in the storage pit (FU1 & FU2-B), or on the associated roof (IV & VIa/c) indicating that little lithic reduction, stone tool manufacture or re-sharpening activities took place in the housepit or on the roof during this or the subsequent Stratum VIb occupation (**Figs. 16 and 17**). (Housepits 3, 7,

and 12 had higher debitage frequencies and modified artifacts were more common in HP's 3 and 7). The infrequent occurrence of points and scrapers suggests that the housepit was only occasionally used as a staging area for hunts and a base for hide working. The low frequency of bifaces also implies that little butchering and meat drying occurred in the housepit. The scrapers and abraders are near the floor margins, suggesting they may have been stored out of the way.

Artifacts in roof Stratum VI and IV are most likely to have been deposited by residents of Stratum VIII. The combined assemblages of Strata VIII, VII (see section on Stratum VII), IV, VI, Fill Unit 1, and Fill Unit 2 includes: three pipe fragments, a bone pendant, two pieces of jade, four ground bone fragments, 19 incised bone fragments, four loon bones, mussel shell fragments, seven beaver incisors, two large pieces of worked antler, six dentalia shells, two shell beads, and two large pieces of worked antler. The pipe fragments, jade, bone pendant, and dentalia may be used to infer a high social status for the residents, since these items either took a long time and much effort to make or were acquired through trade from the coast. Although the number of these objects is low, their frequency and diversity seems unusually high compared to assemblages from other small housepits at the site. The large antler pieces stand out as the most unusual items, and suggest some specialized antler processing activities for the residents. Perhaps the two unusual cobble-filled pits (Feature 10) are related to such activities. The loon bones found in association with the Stratum VIII occupation are the only such finds from the site further suggesting some specialized activities.

The density of fish remains, and to a lesser degree non-fish bone, are higher in Stratum VIII than in any other housepit floor at the site. Concentrations are noted near hearths 3 and 7, beside Pit 6, and in association with rock accumulations in Square D. The concentrations near the pit and hearth probably represent activity areas for cooking and storage of salmon. Concentrations in Square D, some distance from Pit 6 are more problematic, but may represent dumping of debris (possibly under a sleeping platform) or possible eating areas. The high bone frequencies may be indicative of a relatively long occupation, but the low debitage frequency suggests the opposite. Alternately the high bone frequencies suggest greater use of indoor caches for storing food, a greater wealth of food, or cleaning practices where debris was more commonly dumped under benches than outside.

The concentrations of fire-altered rock in Squares C and H are indicative of dumping events from a hearth, while the concentration of cobbles in Square D indicates a dumping of general floor material or possibly storage of rocks for future use (**Fig. 15**).

According to ethnographic accounts, a wooden sleeping platform (0.3 m high and 1.5 m wide) was constructed around the outer edge of the floor (Bouchard and Kennedy 1977:64). If such a platform was constructed around the entire perimeter of the housepit during the Stratum VIII occupation, then the only open space would be a 2 m circle in the middle. This circle would not provide enough open space for 15 people to cook and conduct other activities. On the other hand, if each person slept with their head to the wall, and used only 50 cm of the bench, then only about half (7.5 m) of the circumference would have been needed for the sleeping

platform, and a large communal activity would be available along the remaining sections of the wall. Ethnographic accounts also describe the floor being covered with branch or mats that were cleared out on a regular basis.

The distribution of cultural material on floor VIII is consistent with that expected for a housepit with a bench around half the perimeter. Most of the fish, mammal bone, bone artifacts, debitage, modified stone artifacts, large pieces of charcoal and fire-altered rock are concentrated on the northeast side and southwest corner of the floor within 1.5 m of the wall. All clearly identified dumping events are also in this area. These dense and mounded deposits of debris would be in the way if they were dumped on the open floor but could be easily and expediently concealed under a platform. Therefore, I propose that a platform was constructed along the wall in these portions of the housepit and that the cultural material found in this area results primarily from materials lost, stored or dumped under the platform and do not reflect primary activity areas (**Fig. 21**).

Other than the fish concentrations around the cache pit, densities of cultural material are generally low throughout the rest of the housepit. This scenario would suggest that few artifacts or bones were left in the common area where presumably many of the activities took place, possibly because they were removed with the mats and boughs used to cover the floor. This finding it not inconsistent with findings from other housepits at the site where high frequencies of cultural material are rarely found in the center of the housepit. Given this patterning, expectations should be for low densities in other parts of the housepit that were used as common areas.

The lack of any large pieces of charcoal or charred beams indicates that this structure was not burnt down, while the absence of postholes suggest

that any posts used to support the roof were set outside the housepit depression or removed for another structure.

Flake densities on the Stratum X floor are similar to those on Stratum VIII floor i.e., often absent, and rarely greater than three per subsquare. This differs from the Stratum VIb occupation, which has at least one flake in each subsquare, with averages of 3–5 flakes. This evidence suggests that the lithic use and discard practices were similar during the Strata VIII and X floor occupations but supports the idea that the Stratum VIb floor differed and may represent a hunting camp occupation. The lowest flake densities were in the roofs (Strata VIa/c, IV, VII) indicating little discard and few cultural activities on the roof.

Stratum XII: Roof

Soil Matrix

Stratum XII is generally a loosely compacted, dark brown (10 YR 3/3) sandy loam but the color can grade into olive brown (2.5 YR 4/4). An unusually high frequency of cobbles occurs in this stratum. Although quite a few subsquares contain less than 5%, large rock accumulations can elevate estimates to 20–50%. The frequency of small clasts is the same as that found in Stratum IV (roof) with granules constituting 10–20% and pebbles varying between 10% and 40% but generally higher than 20%. The higher pebble concentrations seem to vary independently of the cobble accumulations. Cicadas have caused minor soil disturbances by bringing darker soil into the stratum from Stratum X (floor).

Fire-altered rock (> 4 cm) is generally absent from this stratum. However, high frequencies (30-50 pieces/subsquare) of fire-altered rock

occur in a few subsquares of Square H (Ssq. 6) and Square D (Ssq.'s 15 & 16) and moderate counts (10-15 pieces) are encountered in the northeast corner of Square C (Ssq.'s 6, 9 & 14) and in Square H (Ssq. 11).

Charcoal was generally absent or present as small flecks. Larger pieces (2-4 cm across) were only found along the western wall (Sq. H–Ssq.'s 7, 12, 16; Sq. I–Ssq.'s 1, 9, Sq. F–Ssq. 3, Sq. B–Ssq. 3) and in the northeast corner of Squares D (Ssq.'s 9, 13, 14) and C (Ssq.'s 5, 6, 9, 10, 13,14). Although these charcoal- rich deposits were excavated as part of Stratum XII, the excavation of subsquares close to the wall strongly indicates that these deposits were dumped along the edge of the housepit wall during the Stratum X occupation, that Stratum XII deposits were very thin or absent above these dumps, and consequently, that the charcoal rich deposits should be considered part of Stratum X. In general, the frequency and distribution of fire-altered rock and charcoal in Stratum XII is similar to that found in other roof deposits.

In subsquares adjoining the wall, Stratum XII is absent or present in only part of the subsquare (Sq. D–Ssq.'s 1, 2, 3; Sq. L–Ssq.'s 4, 8, 12, 16; Sq. K–Ssq.'s 4, 8, 12; Sq. B–Ssq.'s 6, 7; Sq. F–Ssq.'s 3, 6). This patterning is due to the configuration of the wall which allowed a larger living surface in Stratum VIII (floor) than in Stratum X (floor). Roof deposits are also absent or thin over the storage pit where they were removed when the pit was re-excavated during later occupations.

Stratum XII (roof) was usually 8–18 cm thick with two circumstances producing thinner deposits of 3–7 cm. In the northeast corner of Square C dump deposits associated with Stratum X produced an uneven surface for the deposition of Stratum XII and probably resulted in Stratum XII initially

having a mounded surface. Weathering and/or the leveling of the deposits to produce a living surface for Stratum VIII (floor) subsequently thinned the Stratum XII deposits. Excavators in 1990 also recorded little or no evidence of Stratum XII in some areas with large rock accumulations along the north and west walls (Sq. H–Ssq. 14, Sq. G–Ssq.'s 13 & 14, Sq. D–Ssq.'s 15 & 16). In subsequent excavations these rock accumulation were excavated as part of Stratum XII rather than as separate features. Stratum XII is not therefore as thin in these subsquares as the notes suggest.

A thin lens of yellow loam appears between Stratum VIII and XII in the southeast corner of the housepit (Sq. D–Ssq.'s 5 & 6, Sq. L–Ssq. 8). This deposit appears to have been dug out of the wall as the Stratum VIII floor was being prepared.

In general, Stratum XII (roof) has more clasts, a lighter color and is less compact than either of the adjacent floor deposits (VIII & X). This made it relatively easy to isolate this roof deposit. Only where dump deposits associated with Stratum X were present was the deposit difficult to distinguish from the underlying deposits.

Features

Two areas of rock accumulation are designated as features in Stratum XII. Feature 9 is a roughly circular pile of rocks approximately 40 cm across and 20 cm high (Sq. C–Ssq.'s 1 & 2). The base rests on top of Stratum X (floor) while the main body of the feature continues up through the overlying roof deposits (XII) into the bottom of Stratum VIII (floor). The top of the pile is nearly flat. All of the rocks are rounded and under 10 cm in maximum dimension, with a tendency for the largest of the rocks to be on the bottom.

No charcoal, ash, fire-altered rocks, bones or artifacts were found in association.

Feature 1 was first encountered in the test trench (Sq. C–Ssq. 16) and latter extended into Squares G (Ssq.'s 13 to 15) and F (Ssq. 1). It is a much larger accumulation of rock at least 60 cm wide and extending approximately 2.25 m along the north wall. Like Feature 9, this conical pile of rocks is comprised of small rounded cobbles and with a base resting on floor X and a body rising 20 cm through Stratum XII (roof).

In previous reports, these features were tentatively interpreted as the collapsed remains of a retaining wall or a rock dump associated with Stratum X (floor). More recent excavations indicate that these rocks are clearly within the soil matrix of Stratum XII. This suggests two possible interpretations (1) the rocks were part of the roof that fell onto the floor when the roof collapsed and were left in situ, or (2) the rocks were part of the roof but were moved by occupants of Stratum VIII floor to create a level living surface in the center of the housepit and dumped out of the way under benches. Since large concentrations of rock are not known to occur in the roof of any other housepits at the site, the latter explanation seems most likely. However, it still raises the question of why the density of rocks appears to be greater in Stratum XII than in the surrounding sterile till.

Artifacts

Only a few subsquares in Stratum XII contain any flakes and then rarely more than four. No stone tools are associated with this stratum.

Fauna and Flora

Mammal bone and fish bone are also absent from most subsquares in Stratum XII. Counts exceeding five small mammal bone fragment or 2 fish bones are rare, and excavators often attributed the few fish bones to mixing with floor deposits. Three of the largest pieces of ungulate bone recovered from this stratum were found along the outer edge of the excavation (Sq. D–Ssq. 13, Sq. G–Ssq. 16, Sq. L–Ssq. 16) above dump deposits leading to speculation that they were actually part of the dump deposits. Identified remains include: 38 salmon bones, 16 mammal bones, 1 artiodactyl rib and metapodial, 1 deer mandible, and 1 bighorn sheep carpal and 3 horn fragments. A possible bird bone drinking tube was found in 1992, in a deposit that was either Stratum XII or a Stratum X dump.

Floral remains are limited to a few larger pieces of charcoal along the walls.

Interpretation of Stratum XII

Stratum XII is interpreted as reworked till that was originally placed on the roof of the housepit during the Stratum X (floor) occupation. The low density of bone and lithics, the localized concentrations of fire-altered rock, the generally high but varying clast content, and the loosely compacted matrix with little organic staining are typical of roof deposits throughout the Keatley Creek site. Any cultural material found in Stratum XII are seen to have originated from cultural activities conducted on the roof or from garbage cleaned from the floor and dumped on the roof. Their low density suggests these activities were infrequent and that the Stratum X (floor) occupation was of a relatively short duration.

The most problematic aspect of stratum XII is the large accumulations of cobbles in this stratum. The two accumulations recorded as features (HP's 1 & 9) are not isolated occurrences. Two other small piles of rock were noted in Square C (though not mapped) and the large accumulation noted along the north wall appears to continue along the west wall as well. All these accumulations are dominated by small rounded cobbles, though larger, more angular cobbles are noted, especially at the contact with floor X. None of the rocks are fire-altered, and no other cultural material is found in association. The rocks lying over the storage pit appear also to be contemporaneous. No similar accumulations are found anywhere in the site.

These rocks are too numerous and concentrated to be interpreted as natural distributions in the till. The rocks may have formed a standing structure (e.g. a retaining wall) on floor X that toppled under the weight of the collapsing roof and rim. Small rock accumulations in other housepits (HP's 3 & 6) have been interpreted as retaining walls used to keep the unconsolidated Rim deposits from falling into the housepit. These accumulations of rock are much smaller than those seen in Stratum XII and are generally constructed of larger rocks. I find it difficult to imagine a large retaining wall of small rounded rocks maintaining its structural integrity. Nor would a pile of small rounded rocks provide a strong support for a bench or a similar structure.

I am more inclined to believe that the rocks were actually part of the roof (Stratum XII) as the surrounding matrix suggests. The roof deposits associated with the Stratum X floor seem thinner than roof deposits in most other housepits, though thin roof deposits were noted for Plateau occupations in HP's 110 and 47 (Rousseau and Handly 1989). If thinner layers

of soil were placed on roofs during the Plateau horizon times, then more rocks might have been used to hold down the mats and/or branches used to cover the superstructure. The large flat rocks seen in Figure 21 may have been used for this purpose. On the other hand, the large mounds of rocks in Features 1 and 9 seem excessive. These rocks may have originally been widely dispersed throughout Stratum XII, but were moved from the center of the housepit by occupants of Stratum VIII (floor) to provide a level living surface and dumped under benches along the wall where they would be out of the way. Such a practice would have required less effort than dumping the rocks outside the housepit depression.

The general lack of filtered deposits suggests a quick collapse. If the rocks were on the roof, they may have contributed to a sudden collapse.

Stratum X: Floor

Soil Matrix

The soil of Stratum X is a moderately compact, black (10 YR 2/1), sandy loam. Mottling produced by cicada activity is uncommon probably because the cicada would not have burrowed to this depth through the rocky collapsed roof. Cobbles are often absent but when present can vary from 5% to as much as 30% of the soil by volume. The higher densities seem to largely result from the large rock accumulations resting on top of Stratum X being included as part of the floor stratum. Pebbles usually exceed 15% but also vary between 5% and 30%. Granules occur in relatively low frequencies of 5–10%.

Most subsquares in this stratum contain no fire-altered rock (> 4 cm) (**Fig. 22**). Only three areas within the house contain subsquares with more

than 4 rocks: (1) the central portion of the east wall, (2) the center of Square C, and (3) the northwest corner of Square D. These concentrations seem to reflect dumping activities. Charcoal is reported for about 1/3 of the subsquares, mostly in the form of scattered flecks. Larger pieces of charcoal (1–4 cm) are associated with the fire-altered rock concentrations.

The underlying Till (XIV) is less compact, lighter in color, and without cultural material, making it distinct from Stratum X. Above Stratum X, Stratum XII is also less compact, lighter in color and contains little cultural material. However, in areas along the east wall soft, floor-like deposits seem to be mounded over the main floor producing a more complex stratigraphy and making context harder to determine. These mounds are interpreted as dumping events along the edge of the floor by Stratum X residents. Similar deposits were noted in other housepits at the site, as well as on the floor of Stratum VIII.

In Square D (Ssq.'s 10, 11 & 14), a thin (1–3 cm), darker, and more compact floor deposit was found at the bottom of Stratum X and separated from the higher floor deposits by an equally thin lens of yellow soil. This suggests an earlier, though presumably still Plateau, floor was removed from the housepit prior to the floor X occupation. The discovery of patinated artifacts (Sq. H–Ssq. 16 and Stratum VIII: Sq. D–Ssq. 1) at the margin of the housepit also suggests some tools from an earlier occupations were incorporated into the floor margins.

Stratum X (floor) deposits are absent over Feature 6 where an open pit existed during the occupation (Sq. H–Ssq. 5, Sq. D–Ssq. 8) and along the outer edge of the excavations where the edge of the wall was encountered (Sq. D–Ssq.'s 1-5, Sq. I–Ssq.'s 1 & 9, Sq. K–Ssq.'s 8 & 12, Sq. L–Ssq.'s 4 & 8, Sq.

B–Ssq. 6). In many other subsquares along the outer edge, excavators found it difficult to locate clear floor deposits and arbitrarily excavated the last 5 cm of cultural deposits as though they were floor. The thickness of Stratum X varies from 1–12 cm with deposits greater than 5 cm found almost exclusively where materials from dumps and features were included as part of Stratum X rather than excavated as separate depositional events.

Features

Three features are associated with Stratum X. Feature 6, a large cache pit along the south wall, was opened and used during the Stratum X occupation. A full description of this feature is included in the discussion of Stratum VIII.

Feature 2 is a small, centrally-located, stone lined hearth. As with the hearths in Stratum VIII (floor), most of the debris from this hearth was removed by the occupants of floor X prior to later occupation events. A fire-reddened area approximately 50 cm across and 6–8 cm deep and partially lined with large rocks is all that remains. The concentration of fire-altered rock, larger pieces of charcoal, and dark soil found in the floor deposits above this hearth may again reflect the continued use of the central area for hearth construction.

Feature 12 is a small, asymmetrical, bowl-shaped pit found along the east wall (Sq. L–Ssq. 16). It is 27 cm X 31 cm across and 19 cm deep. The pit was excavated through Stratum X and into sterile deposits indicating that it was constructed and used by the later occupants of Stratum X (floor). The deposits filling the pit are similar to the dump material found immediately

above and included larger pieces of charcoal and fire-reddened soil, but no other cultural material. The pit is interpreted as a small cache pit.

Artifacts

The debitage from this stratum is primarily vitreous and fine-grained, black trachyte. Subsquares often contain no flakes and where present, rarely exceed three (**Fig. 23**). Higher concentrations of approximately 5–10 flakes are found along the northern edge of Squares H , G and D. The highest density of flakes are in Square C, with frequencies higher than 15 in Subsquares 10 and 11 and frequencies of four or more in most adjoining subsquares. Many of the flakes in this concentration are small pressure flakes. Most of the flakes in Stratum X are billet and pressure flakes indicative of the secondary reduction of bifaces (Iannone and Handly 1990).

The frequency of modified artifacts is very low in Stratum X with no subsquare having more than two (**Fig. 24**). A cluster of subsquares with tools along the east wall include the following artifacts: two Plateau horizon points (one white chalcedony) (Sq. C–Ssq.'s 5 & 6), a notch (Sq. C–Ssq. 5), a bipolar core (Sq. C–Ssq. 13), a retouched flake (Sq. C–Ssq. 1), and a flake core (Sq. K–Ssq. 4). A second cluster in Square D includes one utilized flake (Ssq. 14), two retouched flakes (Ssq.'s 11 & 14), and two bipolar cores (Ssq.'s 7 & 10). Tools found along the west wall include four utilized flakes (Sq. F–Ssq. 3, Sq. G–Ssq. 4, Sq. H–Ssq.'s 7 & 16), two retouched flakes (Sq. F–Ssq. 6, Sq. G–Ssq. 15), a piercer (Sq. I–Ssq. 5), a notch (Sq. F–Ssq. 1), a scraper (Sq. F–Ssq. 1), and a biface Sq. G–Ssq. 13). The central hearth also had a biface nearby (Sq. H–Ssq.13).

Bone artifacts include a pendant (Sq. C–Ssq. 14), two tubular bone beads (Sq. C–Ssq. 2, Sq. H–Ssq. 11), and a bird bone worked into a possible whistle or drinking tube (Sq. D–Ssq. 10). A largely intact digging stick handle was found near the east wall of Square C (Ssq. 9). The context of the handle is uncertain but it seems most likely to be from a dump deposit on the floor or the bottom of roof XII. Given that it is intact, storage in the roof rafters or accidental burial by dumped material seem more likely scenarios than discard. A deer scapula with a ground edge and striations was also found in Square K (Ssq. 8) in dump deposits just above sterile.

Fauna and Flora

Mammal bone is often absent and few subsquares contain more than three small fragments (**Figs. 25 and 26**). The only two subsquares have higher counts (Sq. B–Ssq. 3 and Sq. D–Ssq. 12). The bone is rarely burnt. Identified remains include a snowshoe hare tibia and three beaver incisors.

Fish bones were found in approximately half the subsquares, but only 16 subsquares contained frequencies higher than ten. Subsquares with these high frequencies can be clustered into six groups. Two clusters occur on either side of the cache pit. Three smaller clusters parallel the east wall in Squares C and D, while the final cluster is found in the northwest corner of Square G.

No floral remains were noted other than the occasional larger piece of charcoal.

Interpretation of Stratum X

Stratum X has many of the characteristics of a typical floor from this site including: a darker more compact matrix, low frequencies of lithics and

mammal bone, high frequencies of fish, horizontally lying artifacts, a storage pit, and a central hearth (**Fig. 27**). There can be little doubt that the two Plateau horizon points from Square C are in the floor deposits and that this floor was occupied somewhere between 2,400 and 1,200 BP.

The frequencies and densities of lithic material on the Stratum X floor and the associated Stratum XII roof are generally much lower than those seen in other housepits at the site. These figures suggest a relatively short occupation, a limited range of cultural activities by the occupants, or relatively few occupants. Since house size was determined during construction by the number of people who were to occupy the house (Teit 1900:192) and Stratum X represents the initial occupation, it seems unlikely that fewer than 15 people were using the housepit (see below). Although debitage densities are much higher in HP 12 (a housepit of similar size), the number and type of modified artifacts found on floor X are similar to those found on the floor in HP 12 (Spafford 1991:159, 163). Therefore, it would seem that the same range of activities occurred in both housepits, and the type of cultural activities has not caused the lower densities on floor X. A short length of occupation is therefore the most likely explanation for the low density of lithic material on floor X.

On the other hand, the frequencies of fish bone on floor X are much higher than those seen in HP 12 and are comparable to those seen in larger housepits (HP's 7 and 3) (Kusmer 1989). Many of the fish bone in Stratum X cluster around the large cache pit, a feature lacking from HP 12 but present in the larger housepits. The higher density of fish in Stratum X may merely result from the greater use of indoor caches for the storage of dried salmon. Mammal bone frequencies are similarly low in both HP 12 and Stratum X.

The presence of many intact fish on the floor suggests some areas of the floor received little trampling. The fish tend to concentrate around the hearth where they were presumably heated or cooked, beside the pit where they were stored, and along the northeast sections of the wall.

At contact a housepit depression with a 6.1 m diameter may have housed 15 people (Teit 1900:192) providing 2 m^2/person. If the walls slope in as they do in HP 9, the actual floor diameter may have been only 5 m and the density only 1.3 m^2/person. The inside rim of HP 9 during the Stratum X occupation was 5 m in diameter (approximately 19.5 m^2) indicating a resident population of approximately 15 people. Given an average family size of 5–7 people (Spafford 1991:24), three families probably lived in this housepit. They apparently shared both the hearth and the storage pit.

According to ethnographic accounts, a wooden sleeping platform (0.3 m high and 1.5 m wide) was constructed around the outer edge of the floor (Bouchard and Kennedy 1977:64). If such a platform was constructed around the entire perimeter of the housepit during the Stratum X occupation, then the only open space would be a 2 m circle in the middle. This circle would not provide enough open space for 15 people to cook and conduct other activities. On the other hand, if each person slept with their head to the wall and used only 50 cm of the bench, then only about half (7.5 m) of the circumference would have been needed for the sleeping platform and a large communal activity would be available along the remaining sections of the wall. Ethnographic accounts also describe the floor being covered with branch or mats that were cleared out on a regular basis.

The distribution of cultural material on Stratum X is consistent with that expected for a housepit with a bench around half the perimeter. Most of the

fish, mammal bone, bone artifacts, debitage, modified stone artifacts, large pieces of charcoal and fire-altered rock are concentrated on the northeast side of the floor within 1.5 m of the wall. All clearly identified dumping events are also in this area. These dense and mounded deposits of debris would be in the way if they were dumped on the open floor but could be easily and expediently concealed under a platform. Therefore, I propose that a platform was constructed along the wall in the northeast half of the housepit and that the cultural material found in this area results primarily from materials lost, stored or dumped under the platform and do not reflect primary activity areas.

Other than the fish concentrations around the cache pit, densities of cultural material are generally low throughout the rest of the housepit. This scenario would suggest that few artifacts or bones were left in the common area where presumably many of the activities took place, possibly because they were removed with the mats and boughs used to cover the floor. This finding it not inconsistent with findings from other housepits at the site where high frequencies of cultural material are rarely found in the center of the housepit. Given this patterning, expectations should be for low densities in other parts of the housepit that were used as common areas.

Since only three small postholes were found in the Stratum X floor, the roof superstructure must have been supported by beams set outside the housepit floor. A similar pattern was also noted for the small Plateau floor in HP 90 (Vol. III, Chap. 9). The test trench excavations of Plateau floors in three other small housepits (HP's 4, 107, 110) also failed to produce postholes, while two large Plateau floors (HP's 4, 8) did contain them. This evidence suggests that roofs on small Plateau housepits differed from the

ethnographic pattern, and Kamloops roofs at the site. Perhaps an external conical A-frame structure was used similar to the roofs of dwelling lodges recorded ethnographically (Alexander 1992:133–6).

This floor represents one of seven probable intact Plateau floors (HP's 4, 8, 9, 90, 107, 110) from the site. Floor VIII is one of five definite Kamloops floors (HP's 1, 2, 3, 7, 101). No intact Shuswap floors were encountered at the site, though Shuswap points were found in the early refuse deposits of six houses (HP's 1,2, 4, 3, 7, 90).

Stratum VII: Rim Slump

Stratum VII is only present in the test trench (Sq. B–Ssq.'s 4, 8 & 12, Sq. C–Ssq. 16), in Square F (Ssq. 5), and at the southern edge of the housepit(Sq. D–Ssq.'s 1 to 4 & 8, Sq. H -Ssq.'s 1, 2, 5, 6, Sq. L–Ssq. 4). The matrix consists of a loosely compacted, very dark grayish brown (10 YR 3/2) sandy loam. Cobbles may be totally absent from the matrix and generally constitute less than 10% of the volume, but can be as high as 20% in isolated areas. Pebble and granule content also varies dramatically from 5–25% (for each) with the norm being 10–20%. Charcoal appears as small, scattered flecks with the occasion larger piece (2–3 cm). Fire-altered rock may be absent, but localized concentrations with as many as 33 pieces (> 4 cm) in a 10 cm level are common.

Stratum VII is capped with surface deposits (I) and, closer to the center of the housepit, it is also covered with roof (IV). The context and soil matrix indicate that Stratum VII is a probable rim slump deposit. In other excavations (Hayden et al. 1986, 1987), these deposits were interpreted as soil that was originally placed on the rim or lower edge of the roof during

construction and subsequent dumping events. While the roof was still standing some of these deposits may have slid into the housepit, under the roof. More rim and roof deposits fell on top of these following the collapse of the roof.

The identification of the leading edge of Stratum VII is always difficult because these deposits are very similar to both roof (IV) and filtered roof (VI). Color and compaction vary as much within, as between, each of these strata. Only when the rim slump is closer to the rim spoil (see below) does it become consistently looser than the roof and filtered roof. In general, the roof contains fewer clasts (of all sizes) and less fire-altered rock than the filtered roof, while the rim slump has fewer pebbles and granules but more cobbles and fire-altered rock than the roof or filtered roof. However, a great deal of variability exists within each strata and the transition from rim slump to roof and, even more so, to filtered roof is often unclear. This blending of strata is probably due to their origin, in that they are all composed of mixed materials from roof construction and dumping events. Rodent activity has confused the strata even more (Sq. H–Ssq. 1).

In the subsquares where the context is relatively clear, the rim slump contains few, if any, lithics, faunal or floral remains. A 10 cm level typically has no more than two flakes or two small fragments of mammal bone. The only notable artifacts were a hide scraper and a soapstone flake found at the top of the stratum in association with burnt pine bark, charcoal, and a very high concentrations of fire-altered rock (Sq. H–Ssq. 1). This cluster of materials appears to be a dump of materials, probably cleaned from a hearth or floor, most likely during the Strata VIb or VIII occupations. In fact, the rim slump deposits (approximately 50 cm thick) in Square H (Ssq.'s 1, 2 &

6) seem to consist of a series of superimposed dumping events. This evidence suggests that heavier and bulkier garbage from interior house cleanings was generally placed around the extreme outer edge of the roof.

Strata V: Rim Spoil

Stratum V is only encountered in three subsquares (Sq. D–Ssq. 2, Sq. B–Ssq.'s 12 & 16). The soil matrix is a brown (10 YR 5/3) silty loam with numerous cobbles and other clasts but virtually no cultural material. The only notable find is a large piece of antler found at the interface with the underlying sterile Stratum XI (Sq. B–Ssq.'s 12 & 16). Although these deposits are up to 26 cm thick at the outer edge of the housepit excavations, they thin and end abruptly at the wall of the housepit. Stratum V lies on top of sterile deposits, either till (XIV) or silts (XI), and is capped with a combination of surface (I), roof (IV), and rim slump (VII).

This stratum is interpreted as a rim spoil deposit resulting from the placement of reworked till at the outer edge of the housepit roof during construction. The general lack of cultural material suggests that this stratum was deposited during the initial construction (prior to most cultural activity) and has remained largely intact throughout subsequent re-excavations and occupations of the housepit. The antler discovered at the bottom of the deposits may have been used to dig the housepit depression into the sterile deposits.

Stratum XI :Sterile Silt

Stratum XI is only present in the two northernmost subsquares (12 & 16) of the test trench in Square B, Subsquare 6 of Square B, and the southeast corner of Square D. The soil matrix is an olive brown (2.5 Y 4/4) aeolian silt. It

varies in thickness from 16–26 cm and has a very uneven contact surface with the underlying sterile till (XIV), but a flat interface with overlying rim spoil (V). Stratum XI is culturally sterile and probably represents a naturally occurring deposit.

Similar silt deposits were found under the rim deposits in HP's 4, 5, 7, 90, 108, and 109. (Hayden et al. 1986, Hayden 1989, Rousseau & Handly 1989). The context in HP 108, just 60 m away, is almost identical. Lochnore Phase materials (5,500–3,500 BP) from some of these contexts including points, microblades, and microblade cores suggest that these deposits predate the use of housepit for winter dwellings (Stryd and Rousseau, 1996).

Stratum XIV: Sterile Till

Stratum XIV is a culturally sterile, olive brown (2.5 Y 4/4) till. The matrix is typically a compact, loamy sand with a very high clast content, including numerous cobbles. It forms the base and walls of the housepit depression.

Summary

Housepit 9 was originally constructed and occupied during the Plateau Horizon (2,400–1200 BP). The first occupants excavated a large storage pit (probably for salmon) and a central stone-lined hearth that were filled in prior to the abandonment of the housepit. A wooden sleeping platform may have been constructed along the northeast half of the wall. The roof collapsed relatively quickly (possibly due to the weight of a large accumulation of cobbles) without burning. The poles and beams from the structure were possibly removed for another nearby structure.

The housepit was reoccupied during the Kamloops horizon (1,200–200 BP) and a new roof constructed. However, the early floor and most of the

roof fill were not removed. A sleeping platform may have been constructed around portions of the wall. At least two hearths were constructed and later cleared away and the pit was partially re-excavated and refilled again prior to abandonment.

The roof collapsed slowly after abandonment and while the roof was still largely intact, the housepit was used as a short-term hunting camp. The roof may have been repaired at this time and additional soil placed on it. The roof did not burn prior to the final collapse and again, some of the wood superstructure may have been removed for another purpose.

After the collapse, the depression was used for a short-term open air hunting camp. Activities at this camp included the construction of a hearth and roasting pit, hide preparation, and stone tool manufacture. Both short-term camps were occupied later in the Kamloops horizon.

An undated cache pit beside the housepit may have been used during any of the occupation events.

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References

Alexander, Diana

1992 A Reconstruction of Traditional Land Use Patterns in the Mid-Fraser River Area Based on Ethnographic Data. In Brian Hayden

(Ed.), *A Complex Culture of the British Columbia Plateaui, pp. 99-176*. U.B.C. Press, Vancouver.

Boas, F.

1891 The Shuswap. Second General Report on the Indians of British Columbia, Sixth Report of the Committee on the North-Western Tribes of Canada. In *Report of the 60th Meeting of the British Association for the Advancement of Science, Newcastle-Upon-Tyne, 1890*, Part IV: 632–647.

Bouchard, Randy, and Dorothy Kennedy

1977 *Lillooet Stories*. Sound Heritage Volume VI, No. 1. Aural History , Provincial Archives of British Columbia, Victoria.

Dawson, George W.

1892 Notes on the Shuswap People of British Columbia. *Proceedings and Transactions of the Royal Society of Canada,* 9(2): 3–44.

Hayden, Brian, Diana Alexander, Karla Kusmer, Dana Lepofsky, Dale Martin, Mike Rousseau, and Pierre Friele

1986 Report on the 1986 Excavations at Keatley Creek. Report prepared for the Social Sciences and Humanities Research Council of Canada and the Heritage Conservation Branch of British Columbia.

Hayden, Brian, J. Breffitt, P. Friele, R. Gargett, M. Greene, W.K. Hutchings, D. Jolly, I. Kuijt, K. Kusmer, D. Lepofsky, B. Muir, M. Rousseau, and D. Martin.

1987 Report on the 1987 Excavations at Keatley Creek. Report prepared for the Social Sciences and Humanities Research Council

of Canada and the Heritage Conservation Branch of British Columbia.

Iannone, Gyles and Martin Handly

1990 Little House on the Terrace: A Summary of 1990 Excavations in HP 9 at the Keatley Creek Site (EeRl 7). Unpublished Ms. in possession of the author.

Jolly, Don

1987 Housepit 9 Test Trench Excavation Summary. Unpublished Ms. in possession of the author.

Kusmer, Karla D.

1987 The Fraser River Investigations into Corporate Group Archaeology Project: Zooarchaeological Analysis. Unpublished Ms. in possession of the author.

1989 Results of Analysis of Faunal Remains From 1988 Excavations at Keatley Creek, Lillooet, B.C. (EeRl 7). Unpublished Ms. in possession of the author.

Laforet, Andrea and Annie York

1981 Notes on the Thompson Winter Dwelling. In D. Abbott (Ed.), *The World is as Sharp as a Knife: An Anthology in Honour of Wilson Duff*, pp. 115–122. B.C. Provincial Museum, Victoria.

Richards, Thomas H. and Mike Rousseau

1987 *Late Prehistoric Cultural Horizons on the Canadian Plateau*. Department of Archaeology, Simon Fraser University, Occasional Paper Series, No. 16, Burnaby.

Rousseau, Mike and Martin Handly

1989 Results of the 1989 Small HP Test Excavation Program at the Keatley Creek Site, Mid-Fraser River Region, B.C. Unpublished Ms. in possession of author.

Smith, H.I.

1899 Archaeology of Lytton, British Columbia. *Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 8(3): 129–161.

1900 Archaeology of the Thompson River Region, British Columbia. In *Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 2(1):401–442.

Spafford, James G.

1991 Artifact Distributions and Social Organization on HP Floors at Keatley Creek. Unpublished M.A. Thesis, Simon Fraser University.

Stryd, Arnoud, and Mike Rousseau

1996 The Early Prehistory of the Mid Fraser–Thompson River Area of British Columbia. In R. L. Carlson, and L. Dalla Bona (Eds.), *Early Human Occupations in British Columbia*, pp. 177-256. UBC Press, Vancouver.

Teit, J.

1900 The Thompson Indians of British Columbia. In *Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 1(4): 163–392.

1906 The Lillooet Indians. *In Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 2(5): 193–300.

1909a The Shuswap. In *Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 2(7): 447–789.

1909b Notes on the Chilcotin Indians. In *The Shuswap. Memoir of the American Museum of Natural History, Jesup North Pacific Expedition*, 2(7): 759–78.

List of Figures

Figure 1. Plan View of Housepit 9

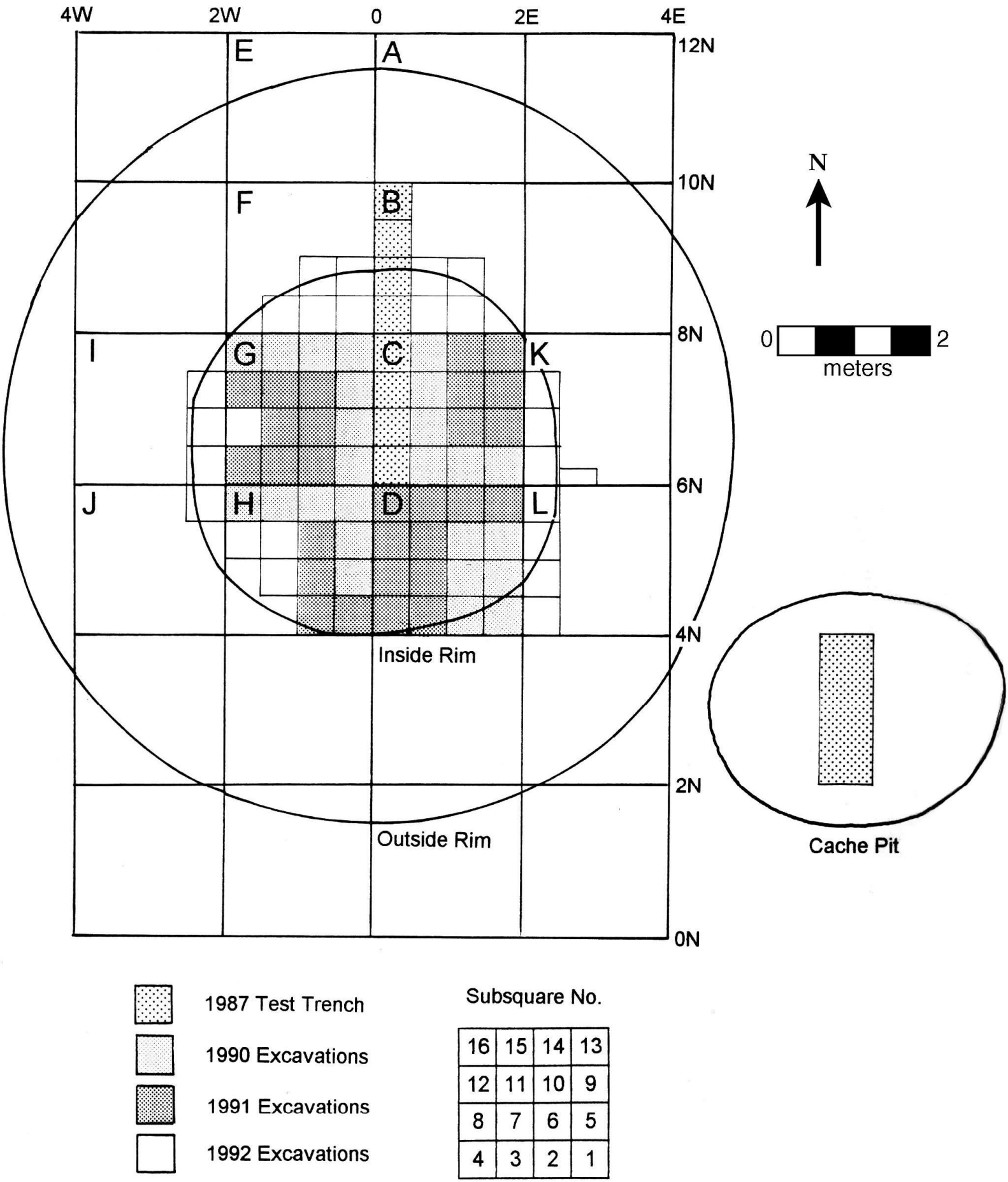


Figure 2. Contour Map of Housepit 9

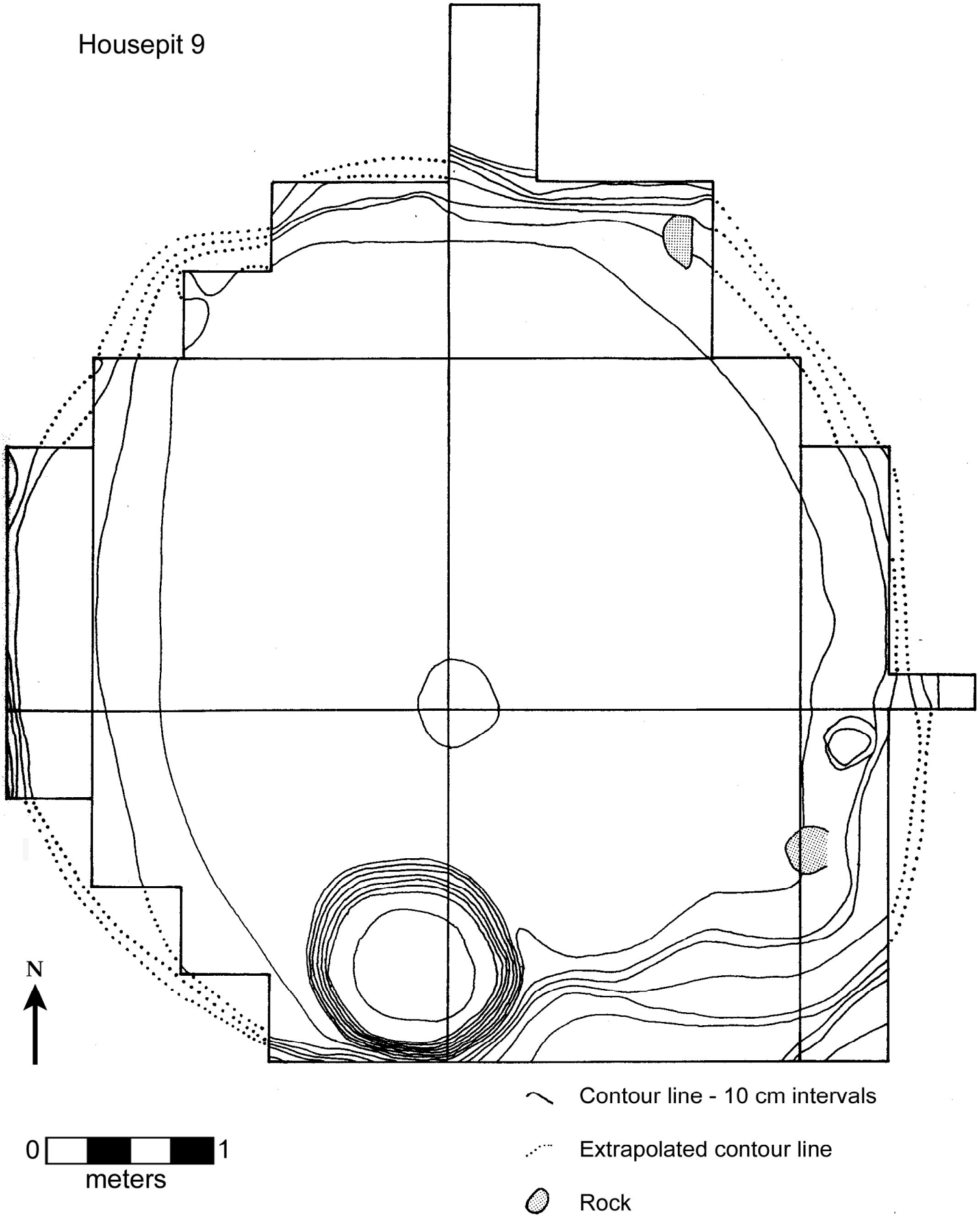


Figure 3. Profile of South Wall of Squares K, C, G, and I

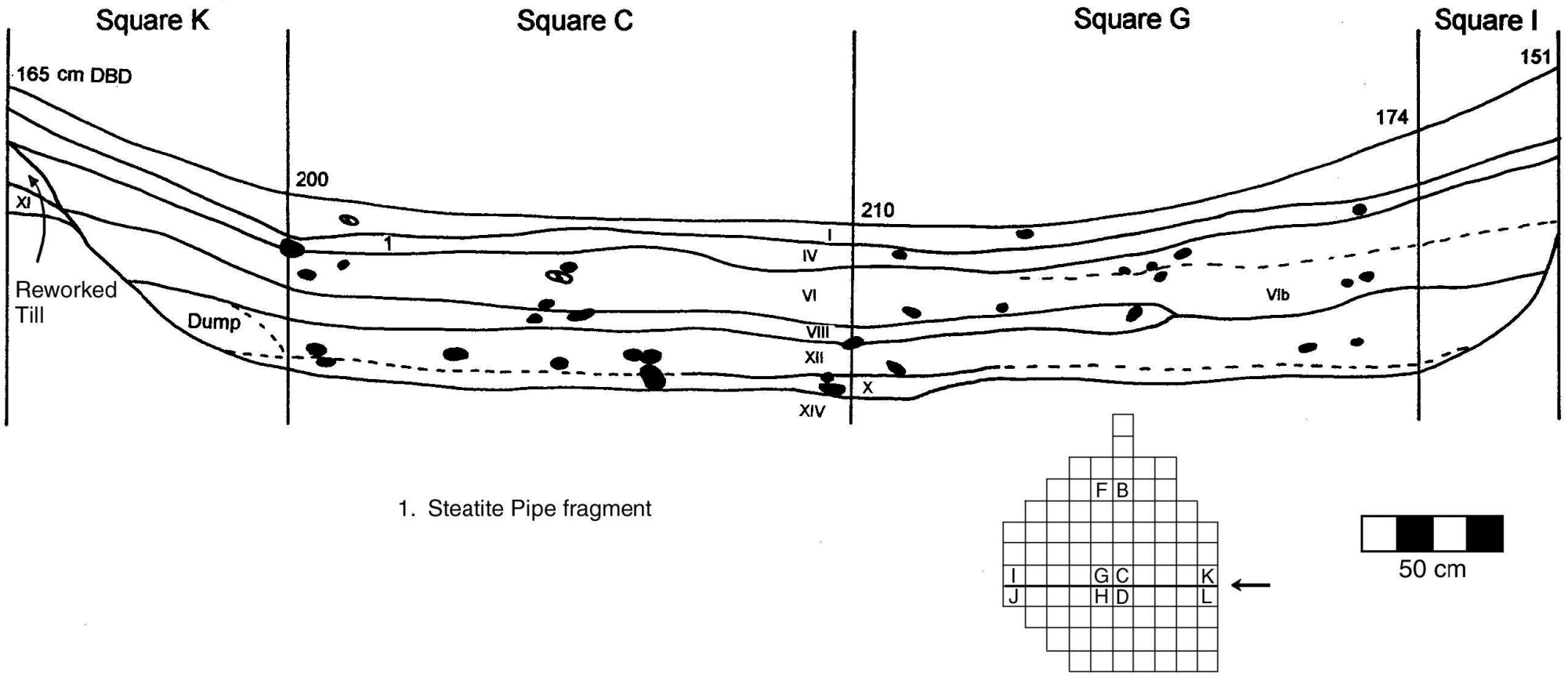
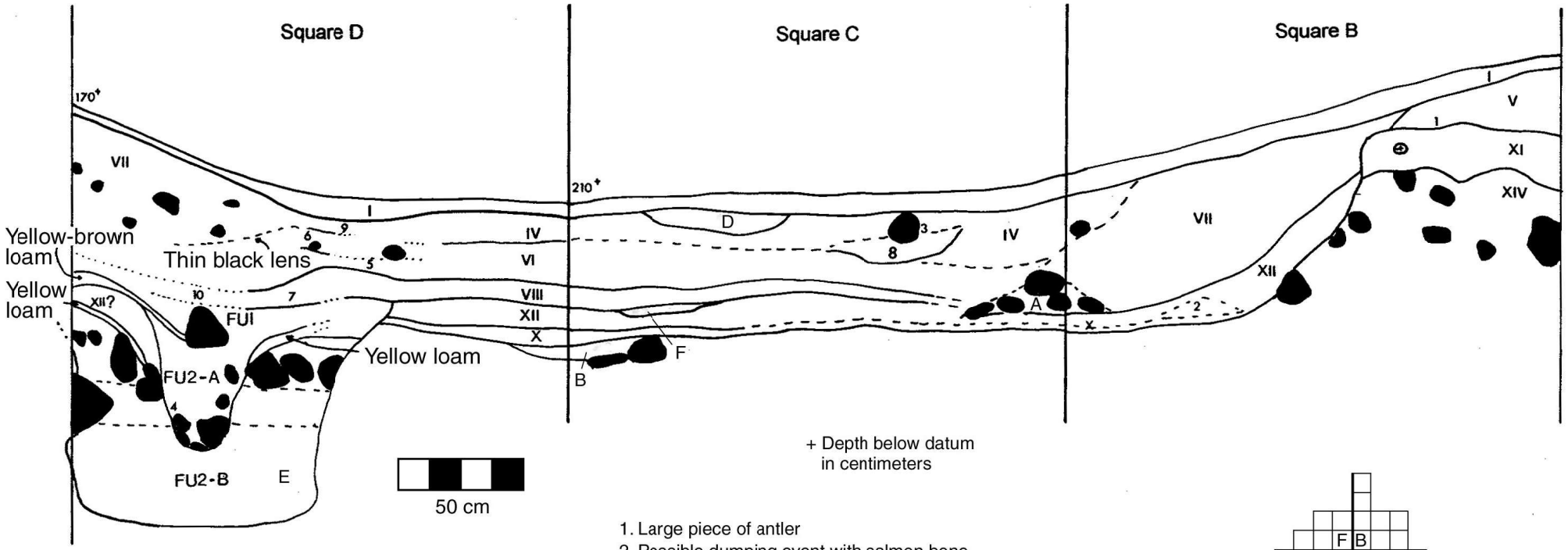


Figure 4. Profile of West Wall of Squares D, C, and B



+ Depth below datum in centimeters

Features
A. Rocks: collapsed retaining wall?
B. Hearth
C. Hearth
D. Hearth
E. Cache pit
F. Hearth

1. Large piece of antler
2. Possible dumping event with salmon bone
3. Mussel shell
4. Kamloops point
5. Kamloops point
6. Kamloops point
7. Plateau point
8. Possible dumping event with pipe fragment & fire-altered rock
9. Kamloops point
10. Plateau point

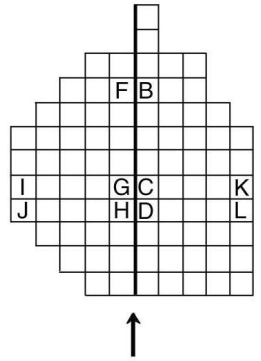
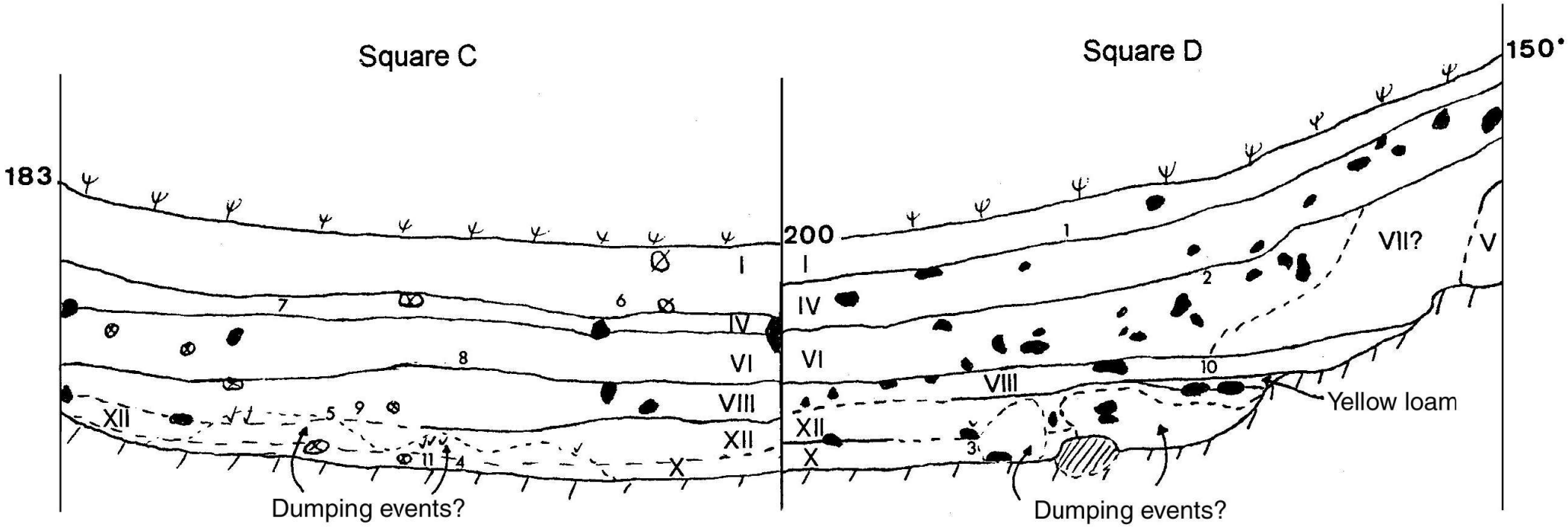


Figure 5. Profile of East Wall of Squares C and D



50 cm

• Indicates depth below datum (BD) in centimeters

1. Kamloops point
2. Nephrite adze fragment
3. Bird bone bead or tube
4. Plateau point
5. Antler digging stick handle
6. Reworked Plateau point
7. Bone pendant
8. Large piece of antler
9. Quartzite spall scraper
10. Abrader
11. Plateau point

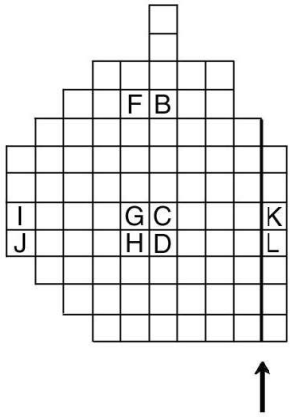


Figure 6. Profile of South Wall of Squares L, D, and H

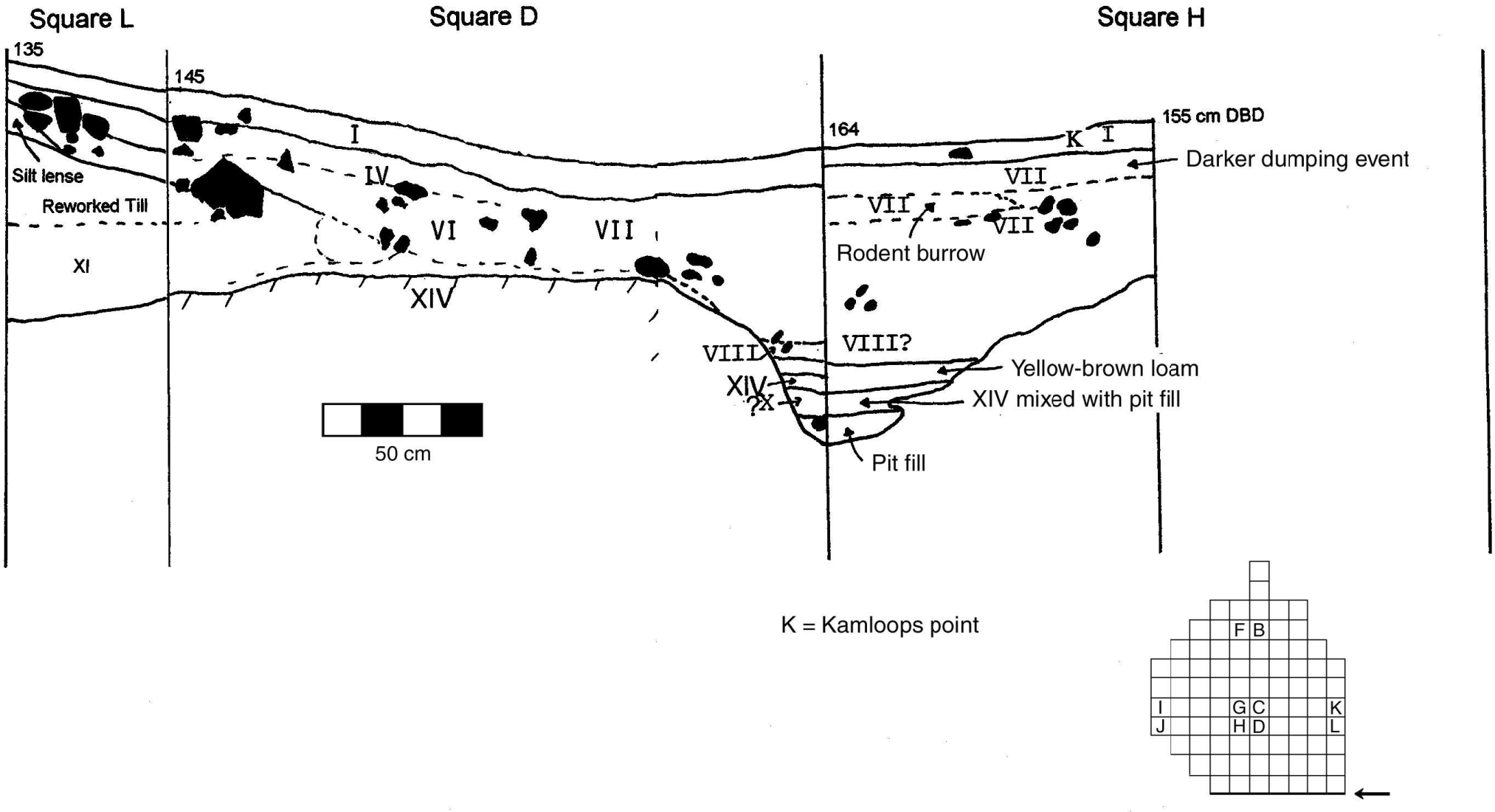
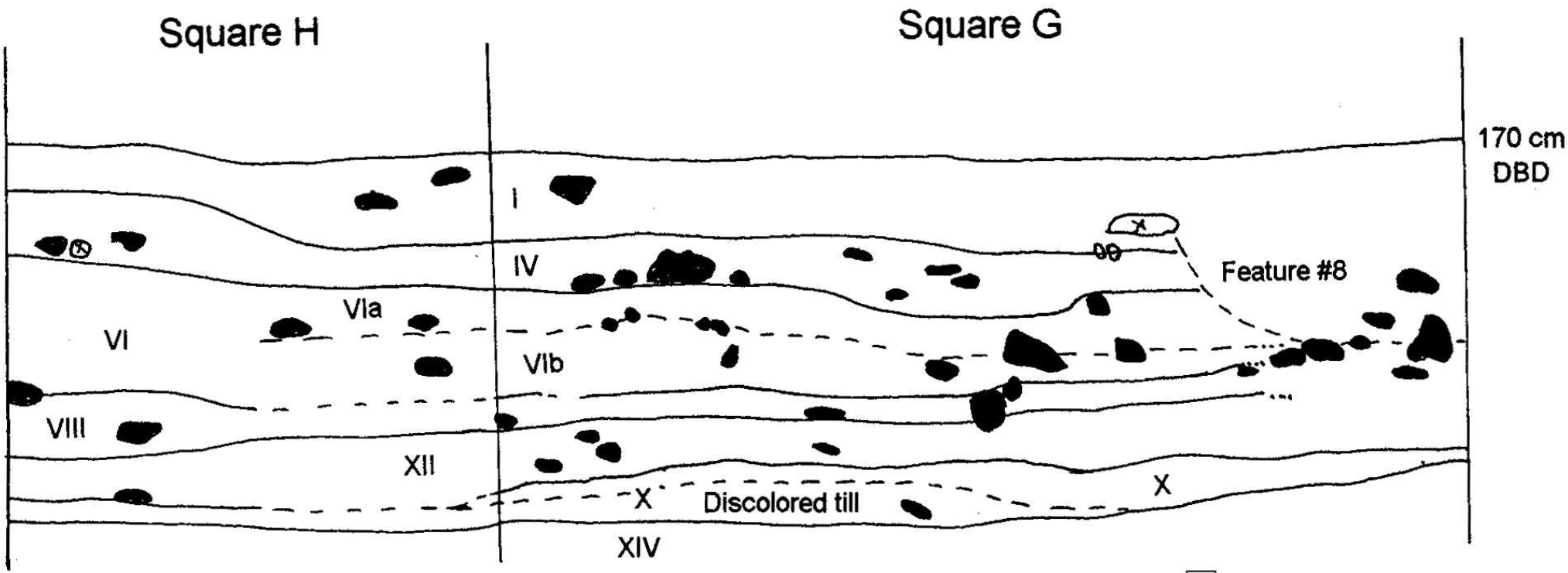


Figure 7. Profile of West Wall of Squares H and G



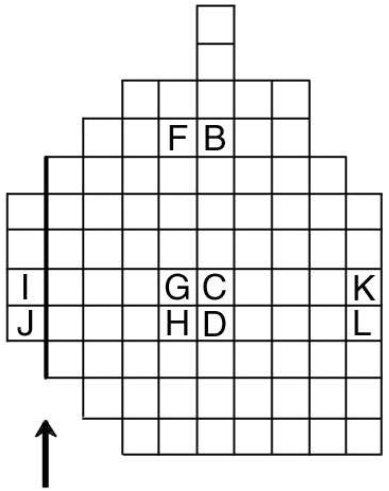


Figure 8. Profile of North Wall of Squares G and C

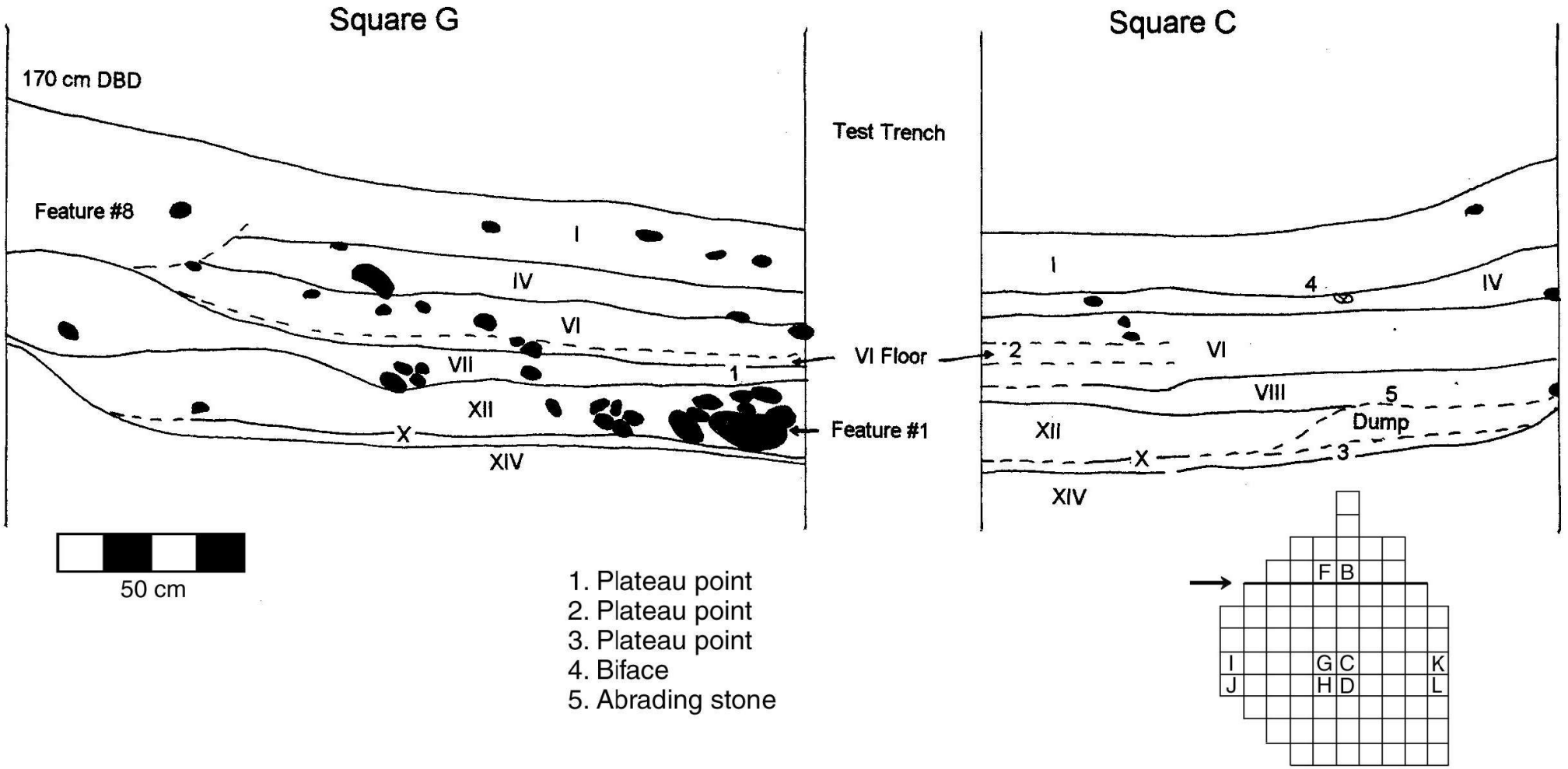


Figure 9. Profile of Cache Pit (Feature 6)

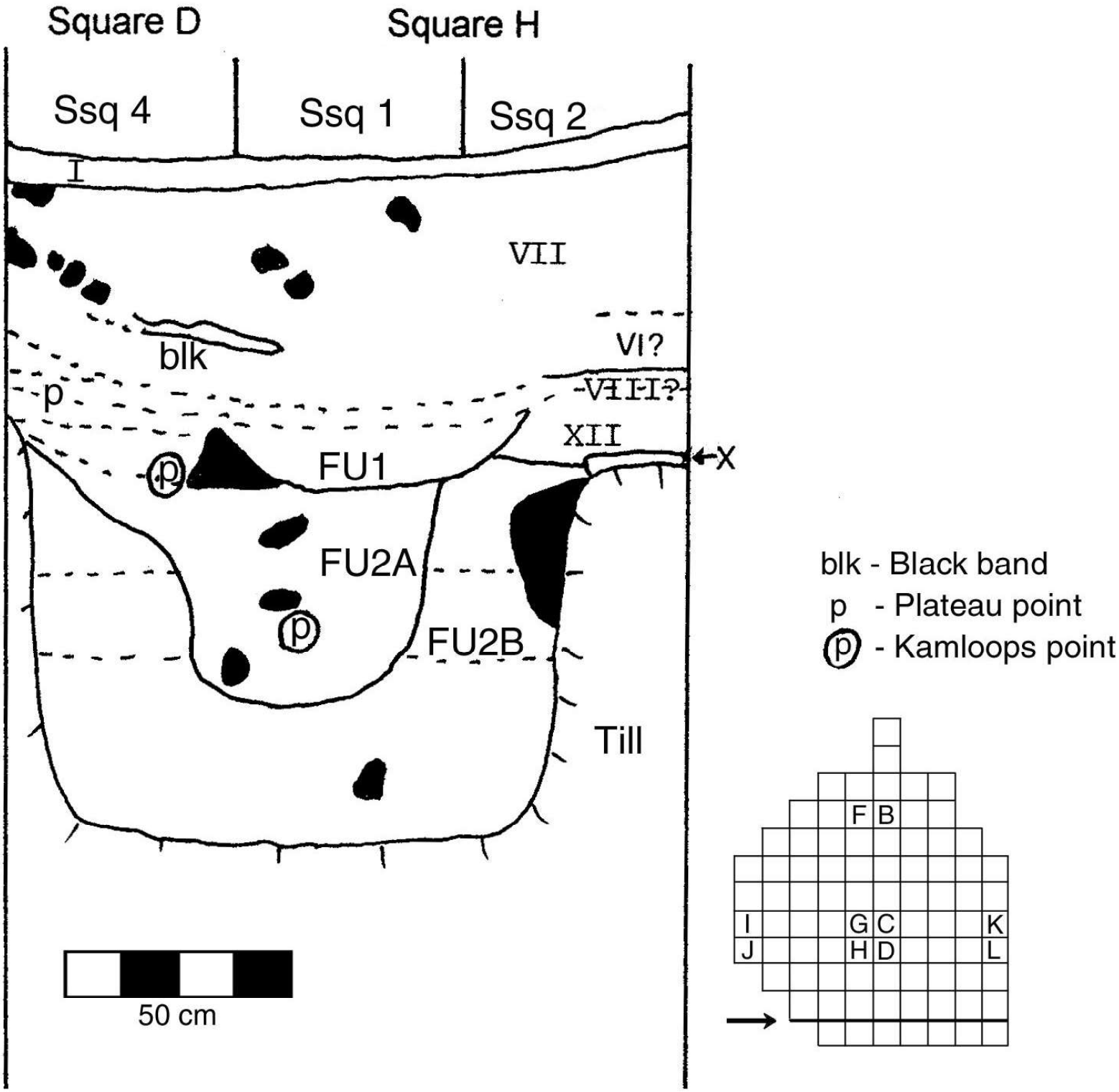


Figure 10. Distribution of Cultural Remains on Living Surface in Stratum I

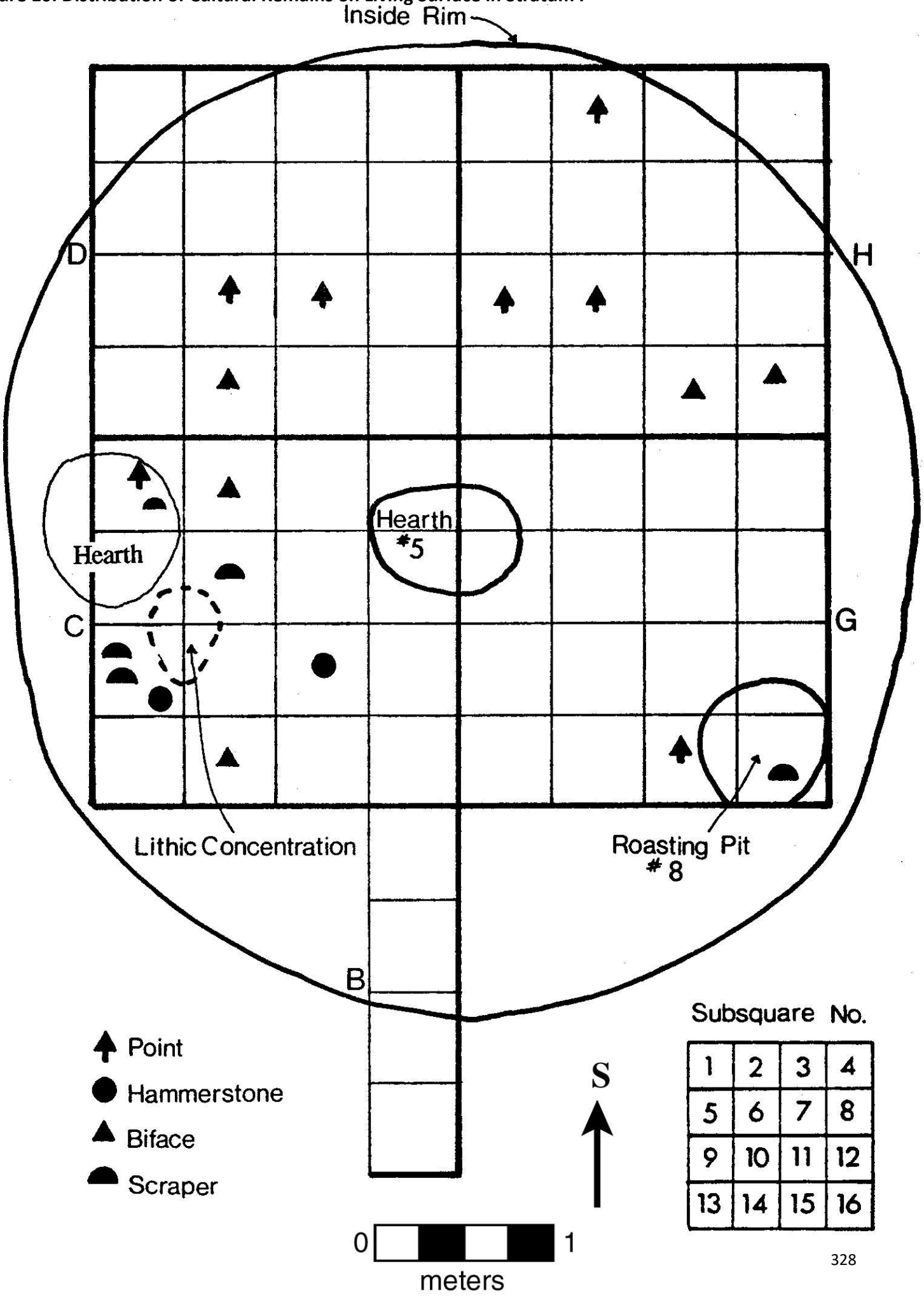


Figure 11. Profile of South Wall of Squares I, G, C, and L Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares

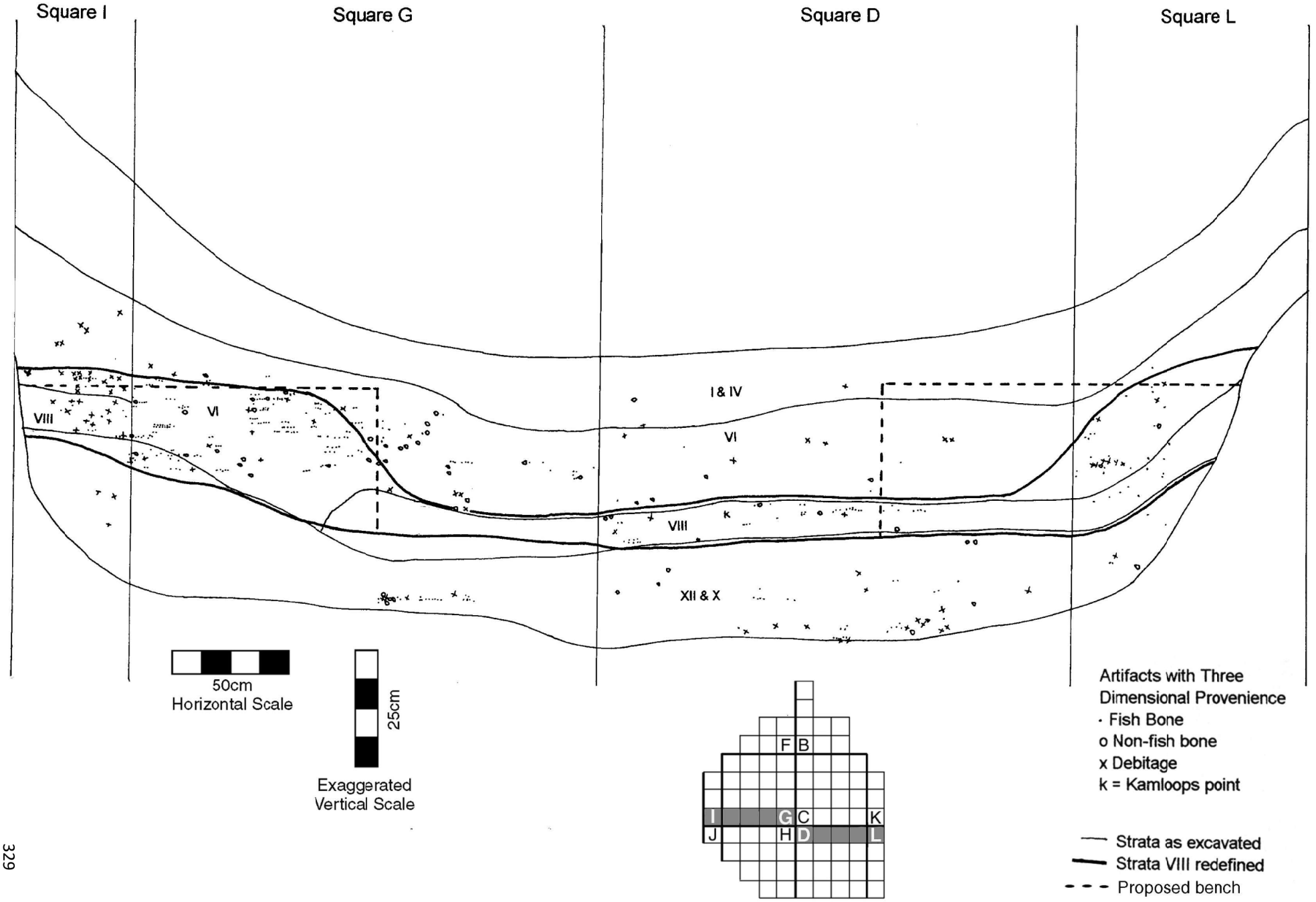


Figure 12. Profile of West Wall of Squares G and F (at 0.5 W) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares

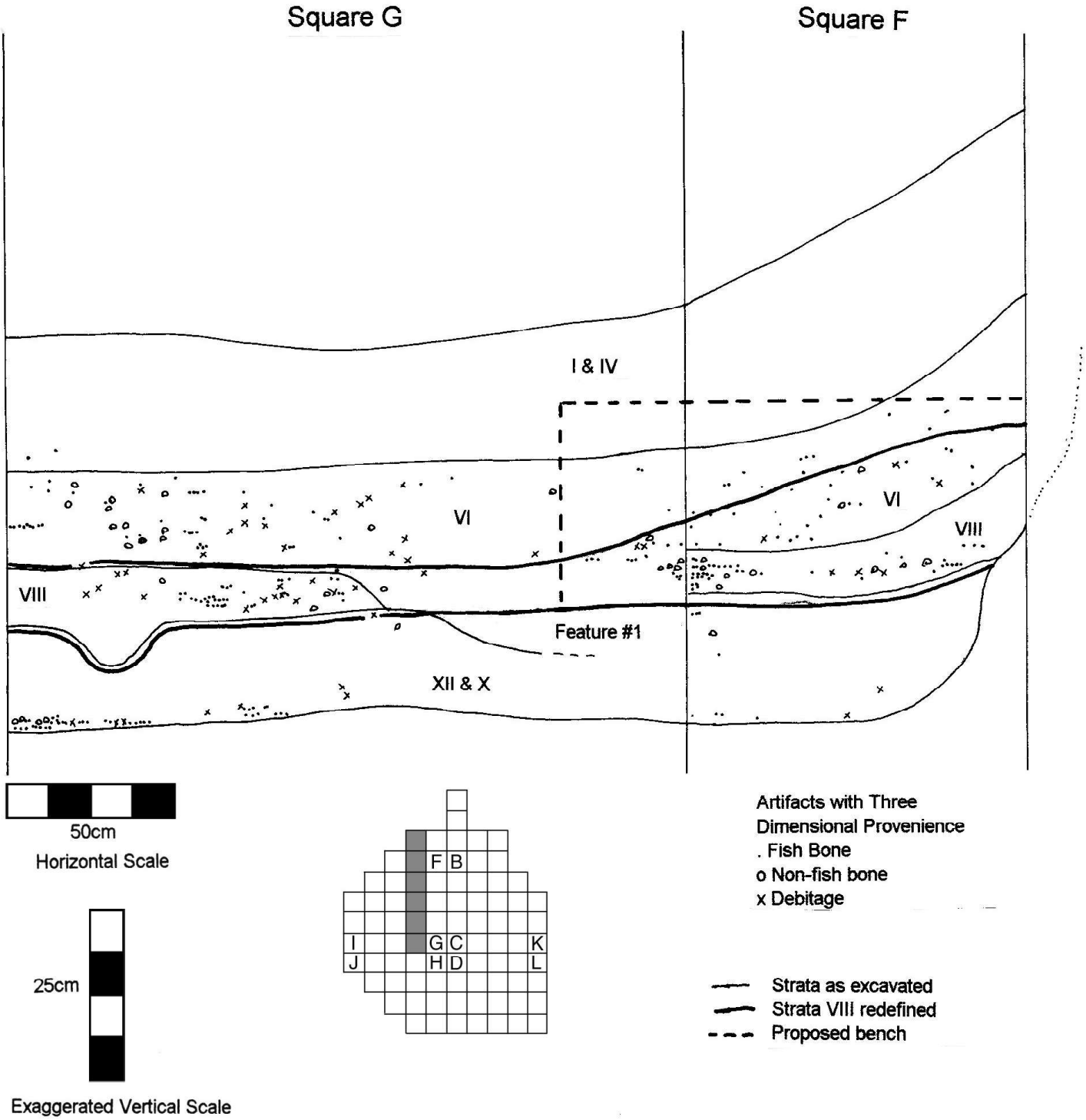
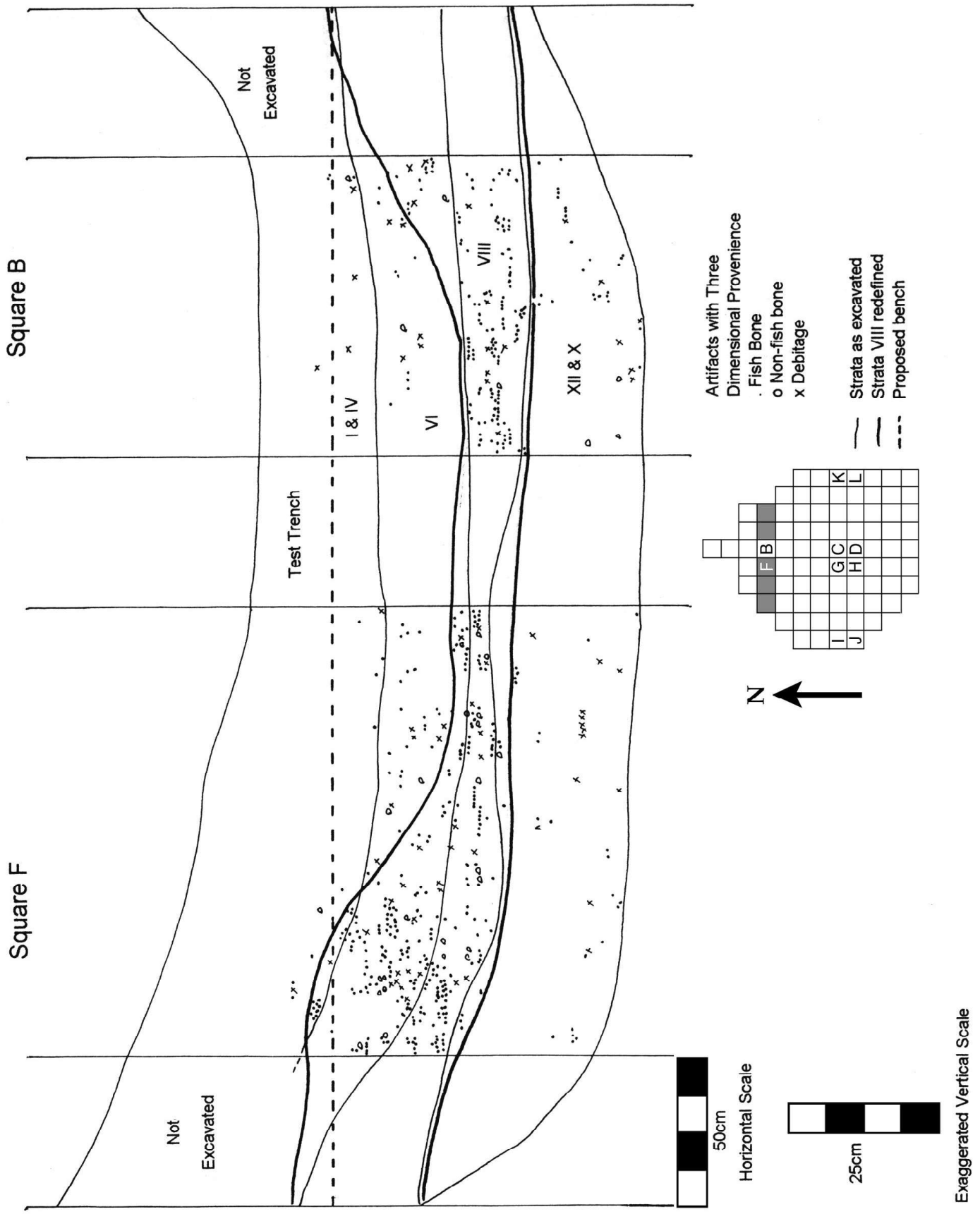


Figure 13. Profile of South Wall of Squares F and B Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares



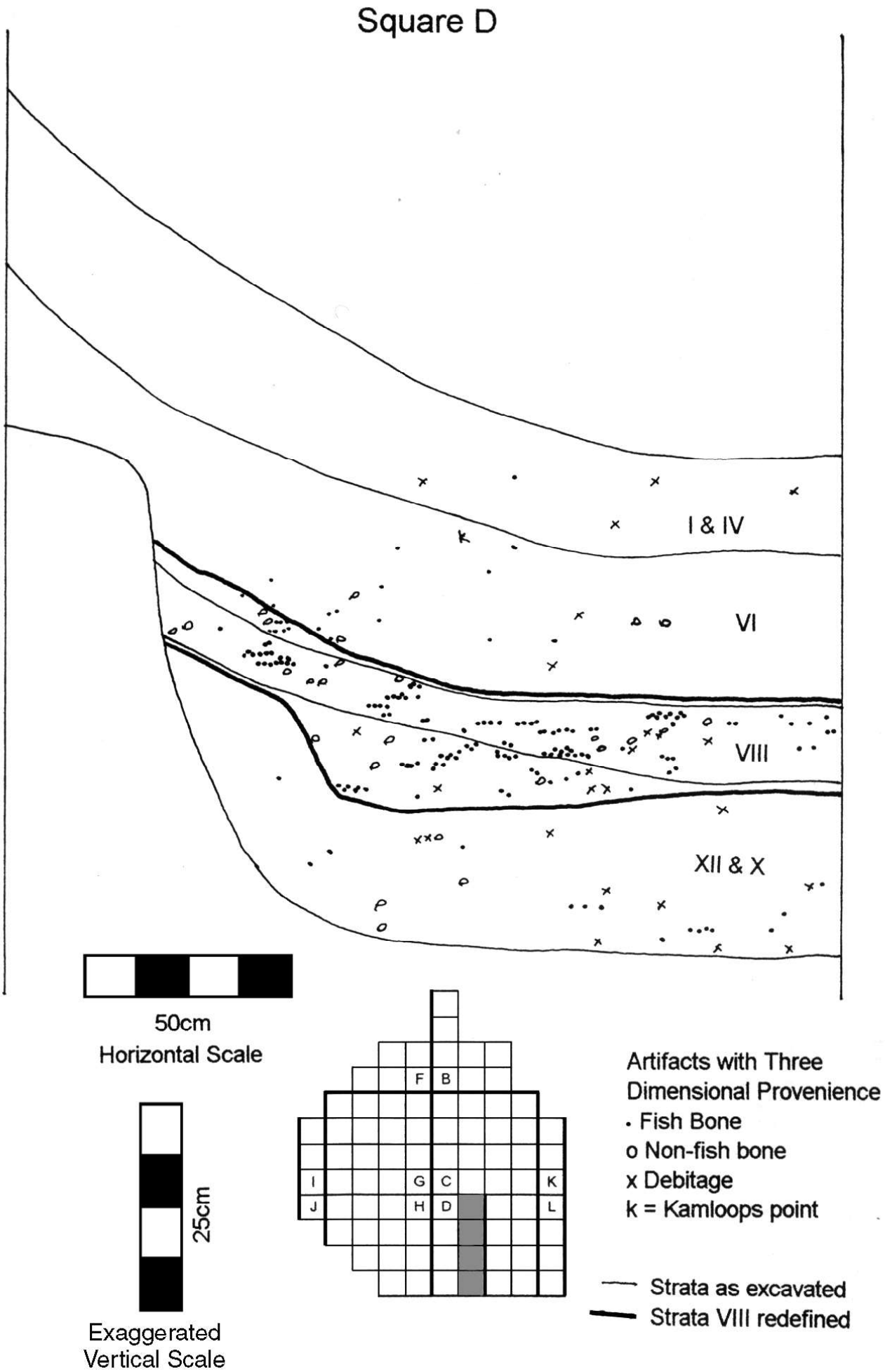


Figure 14. Profile of East Wall of Square D (at 1E) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares

Figure 15. Distribution of Fire Altered Rocks in Strata VI and VIII

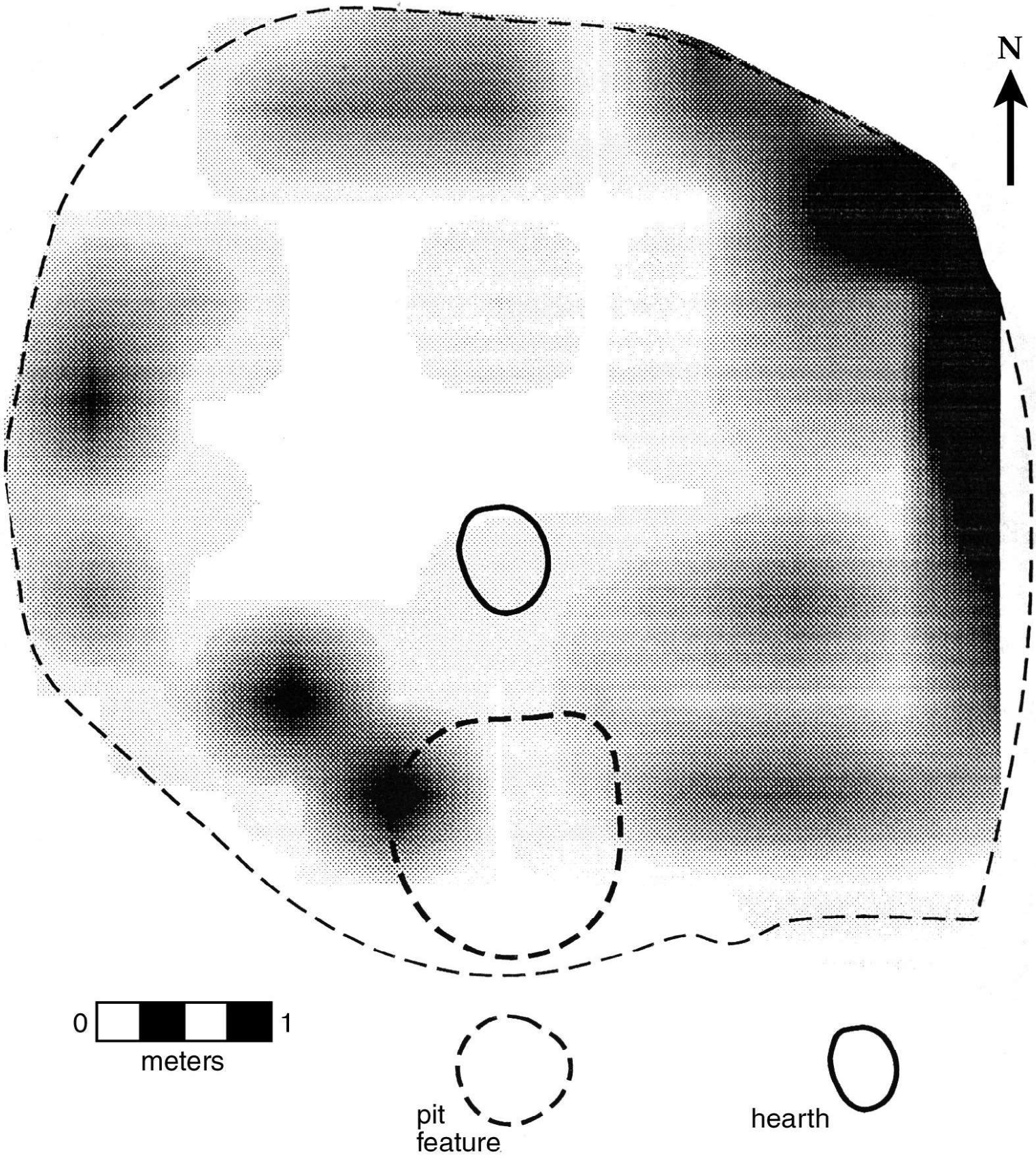


Figure 16. Distribution of Debitage in Strata VI and VIII

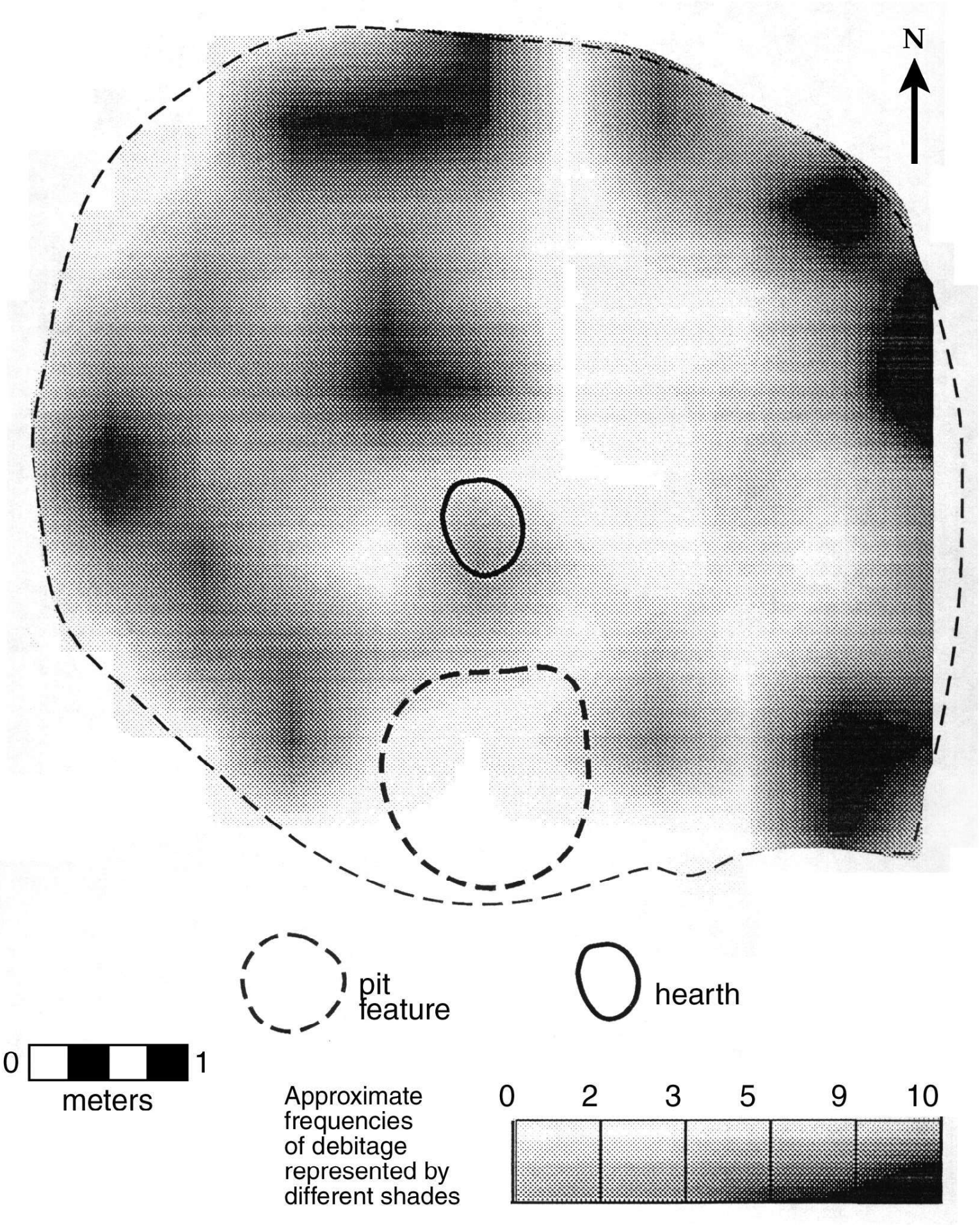


Figure 17. Distribution of Modified Artifacts in Strata VI and VIII

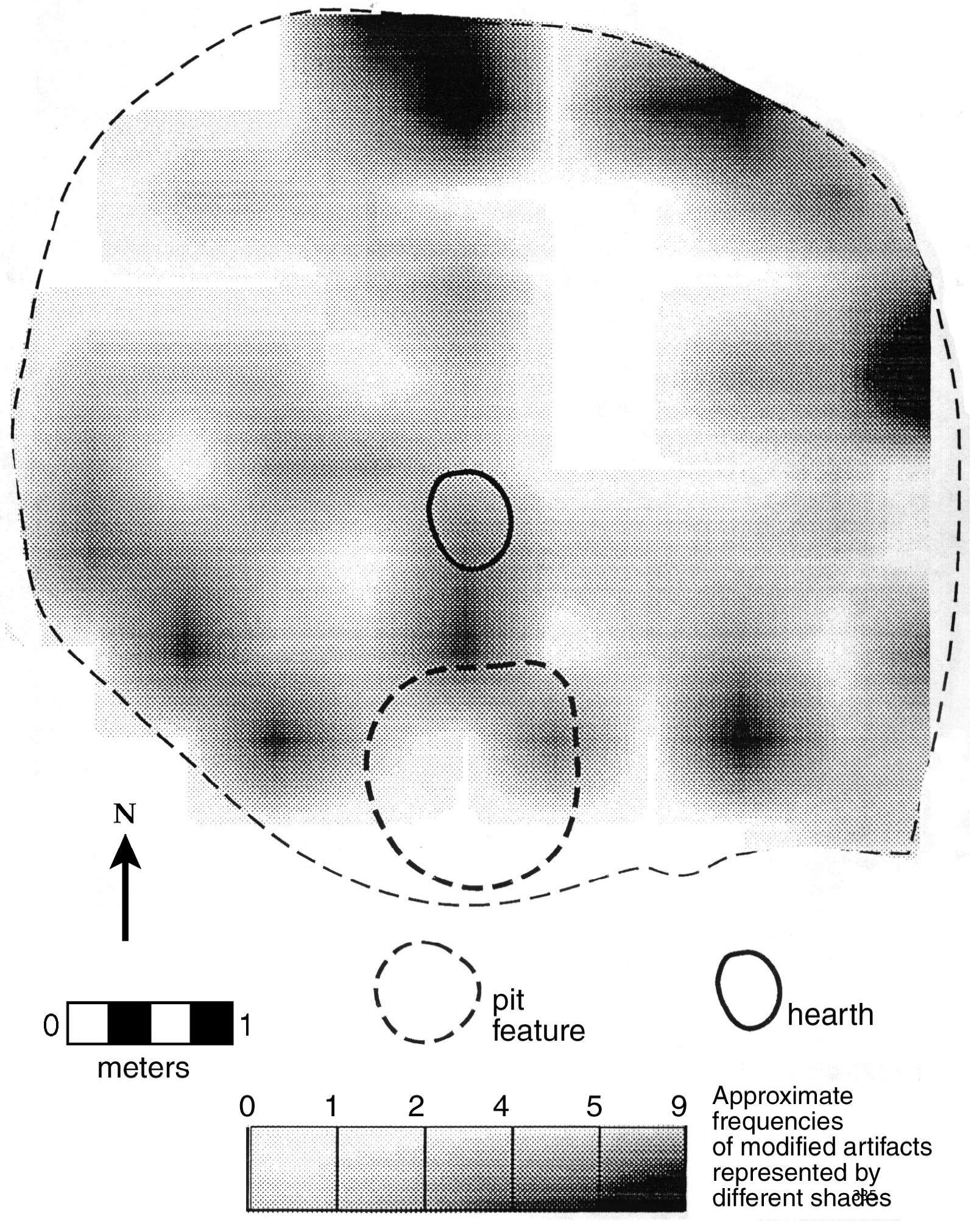


Figure 18. Distribution of Fish Remains in Strata VI and VIII

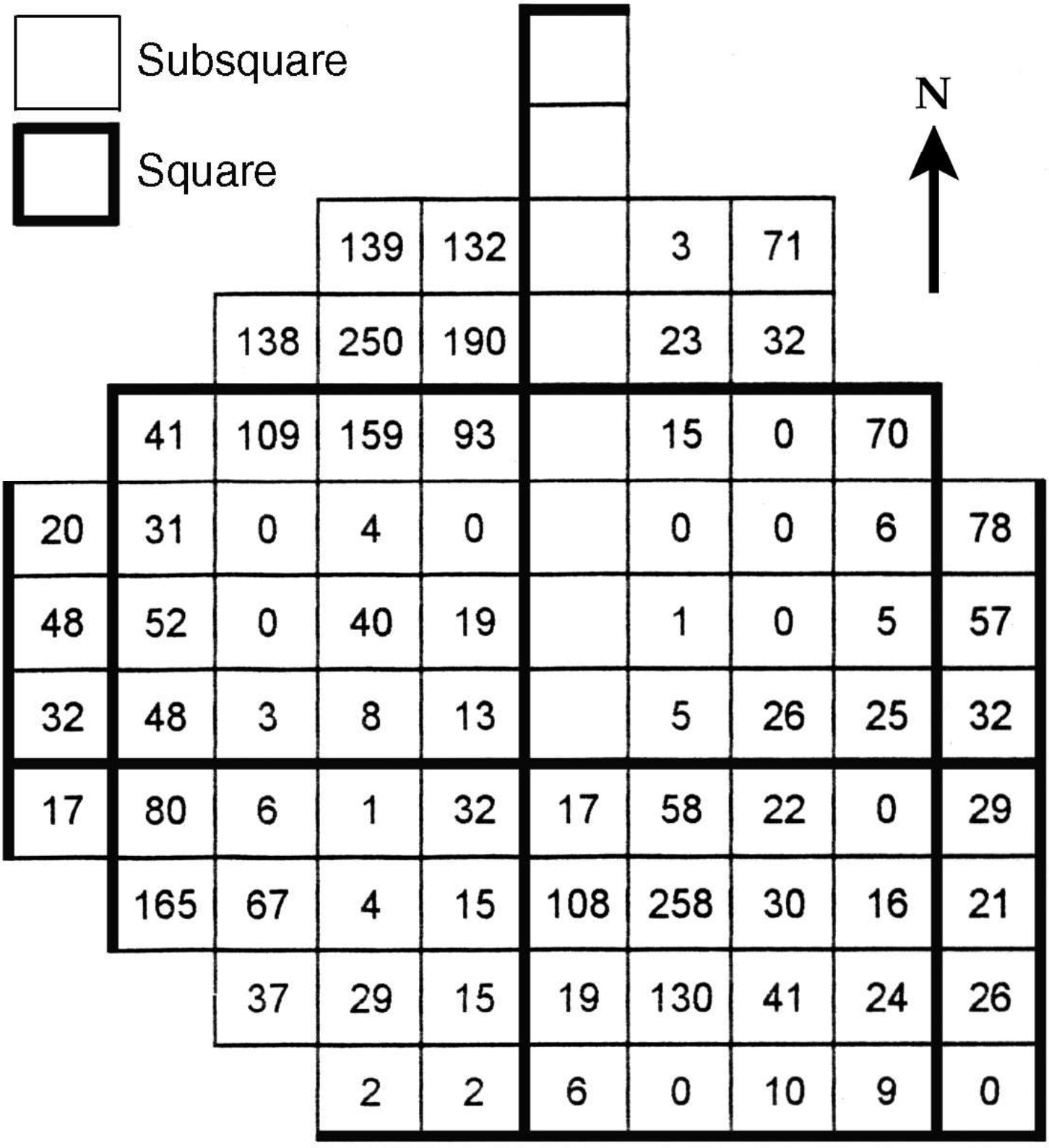


Figure 19. Distribution of Other Faunal Remains in Strata VI and VIII

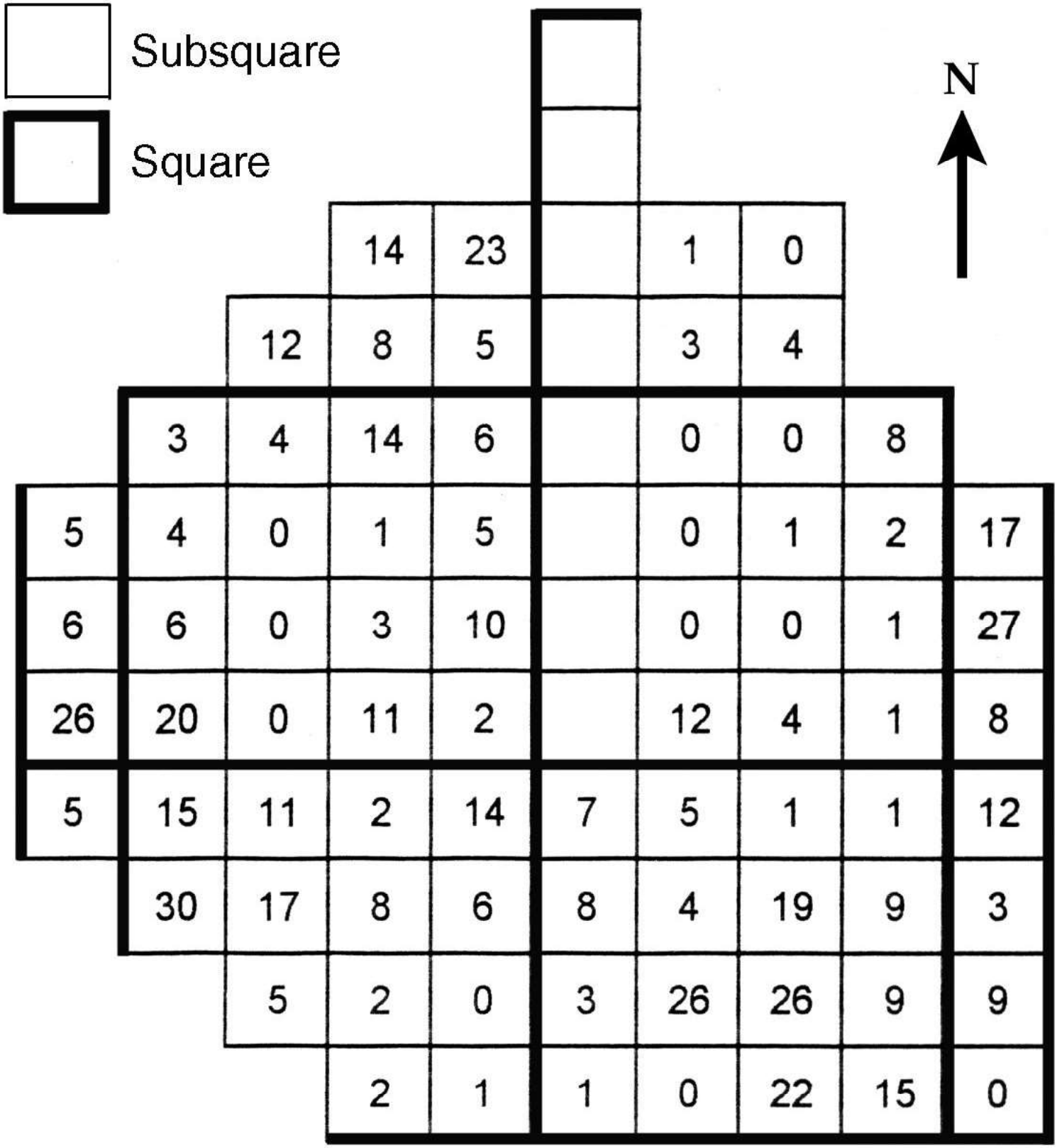


Figure 20. Distribution of Rocks in Strata VIII and XII

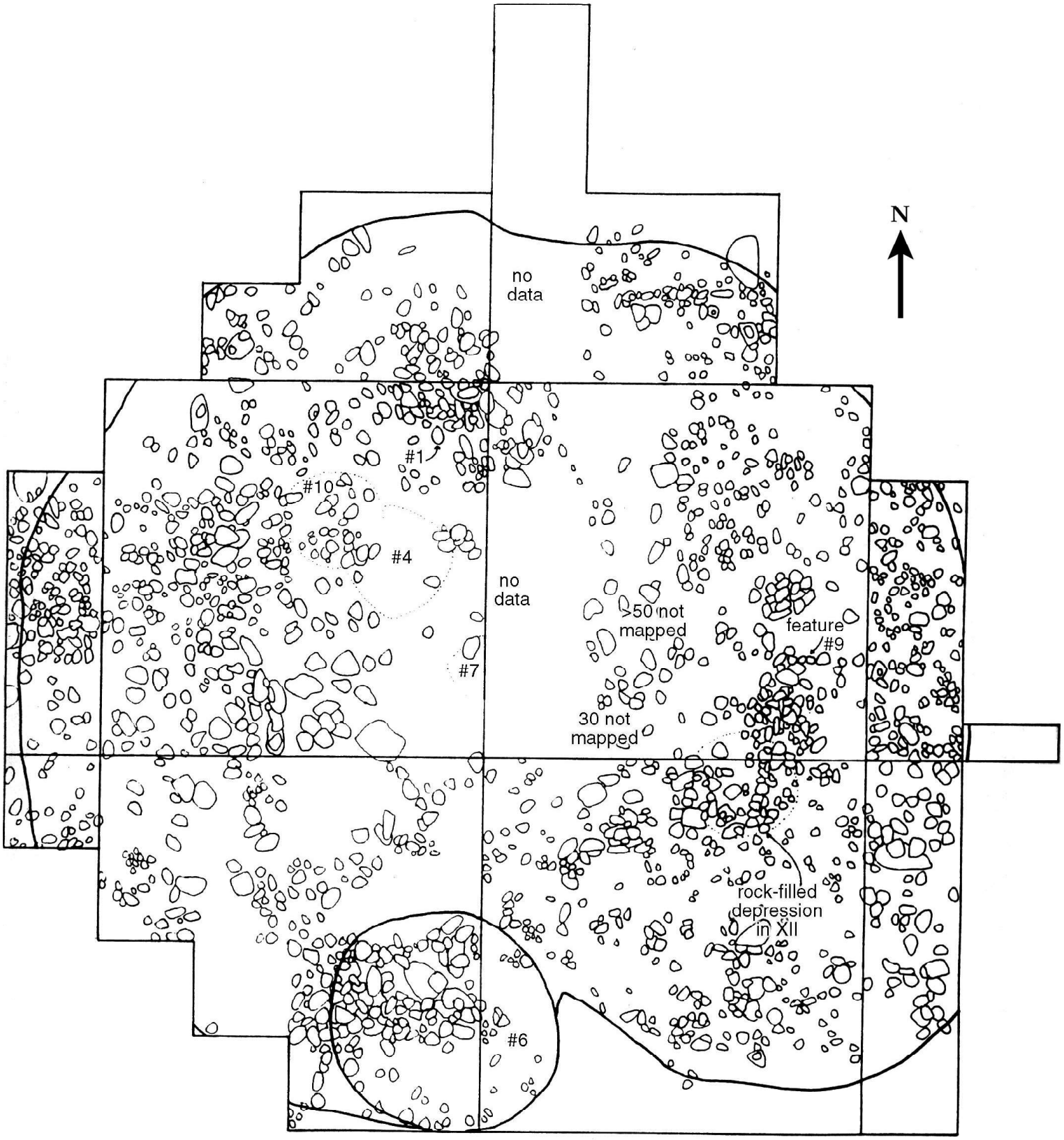


Figure 21. Reconstruction of Activity Areas in Stratum VIII

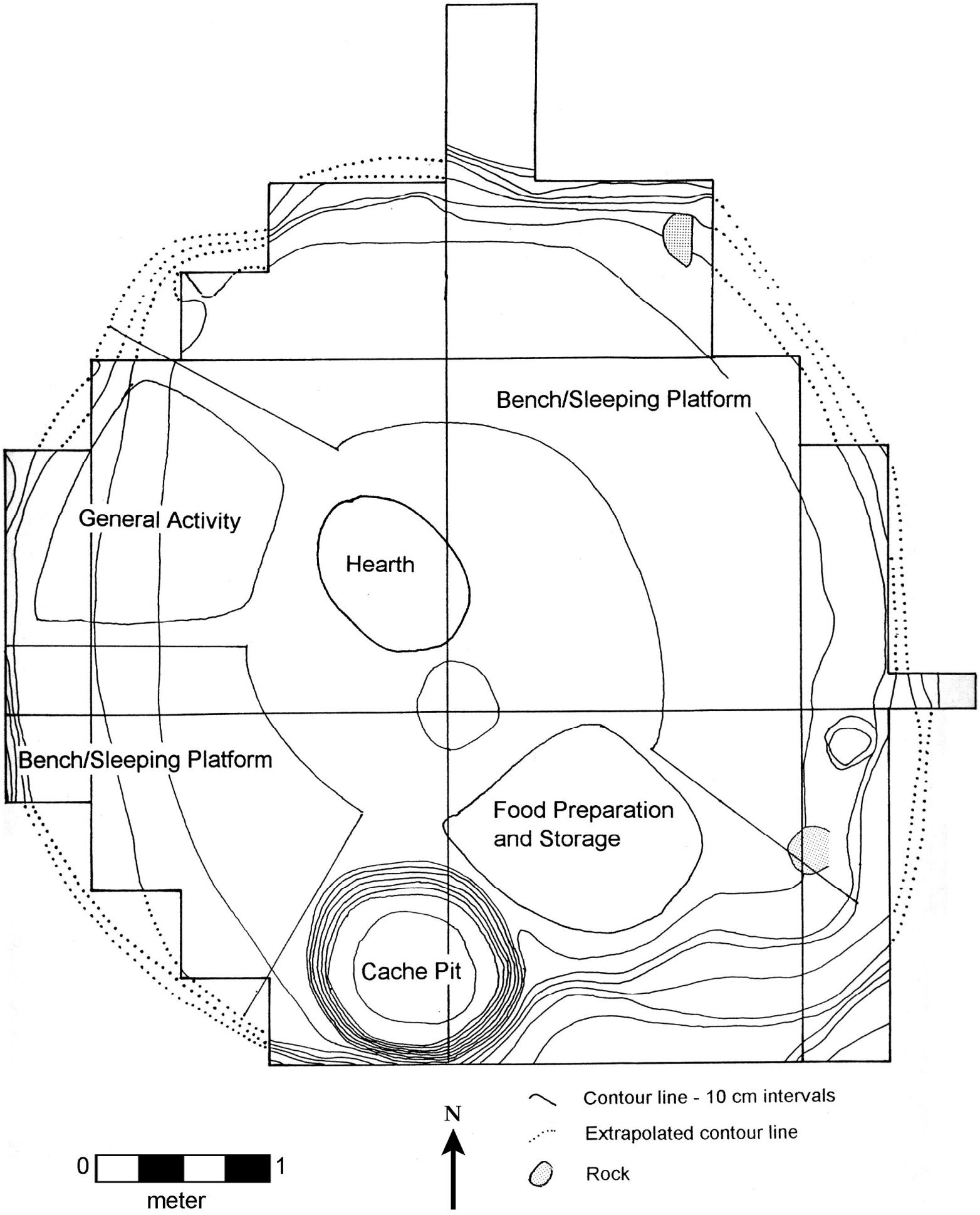


Figure 22. Distribution of Fire Altered Rocks in Stratum X

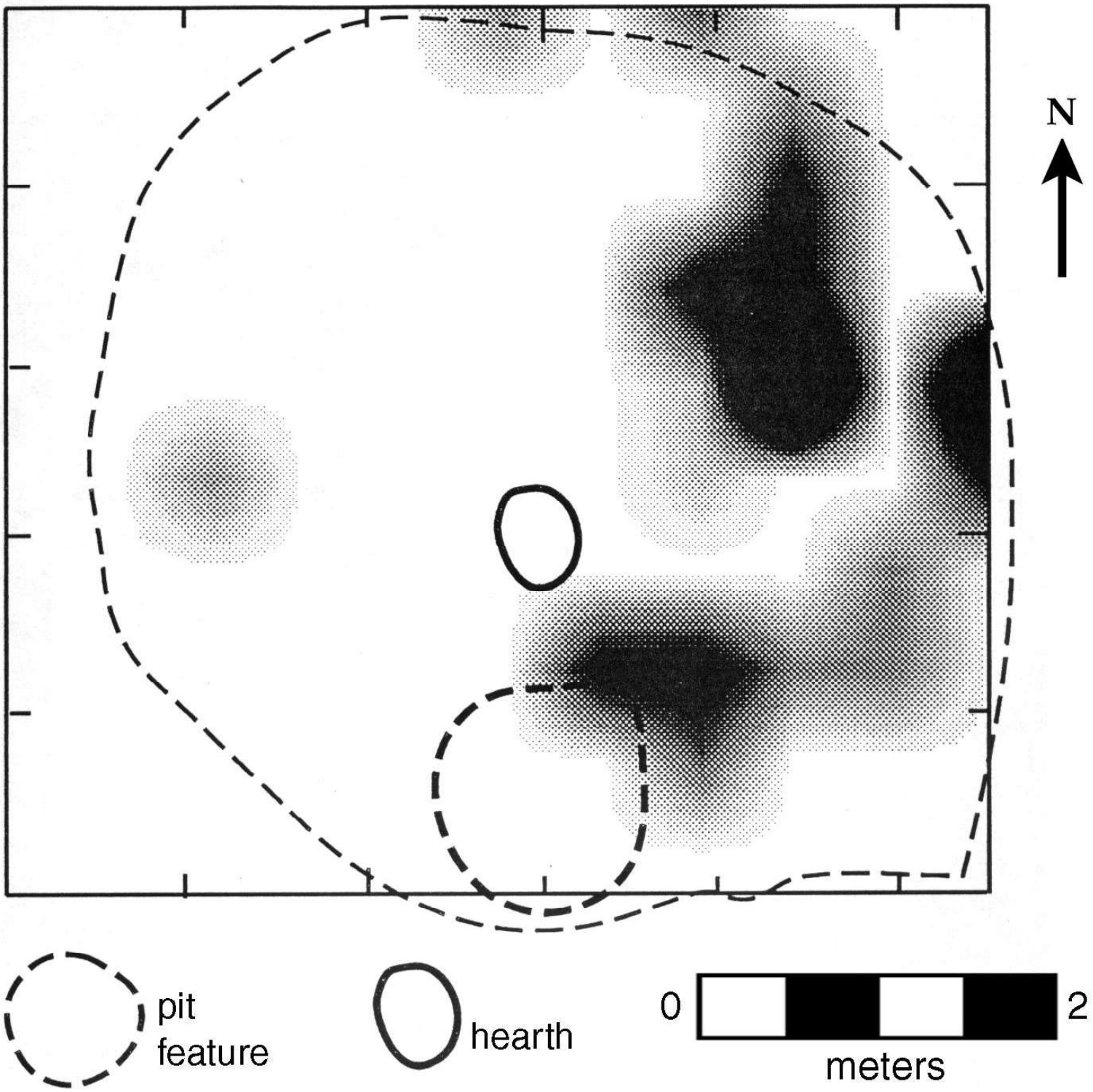


Figure 23. Distribution of Debitage in Stratum X

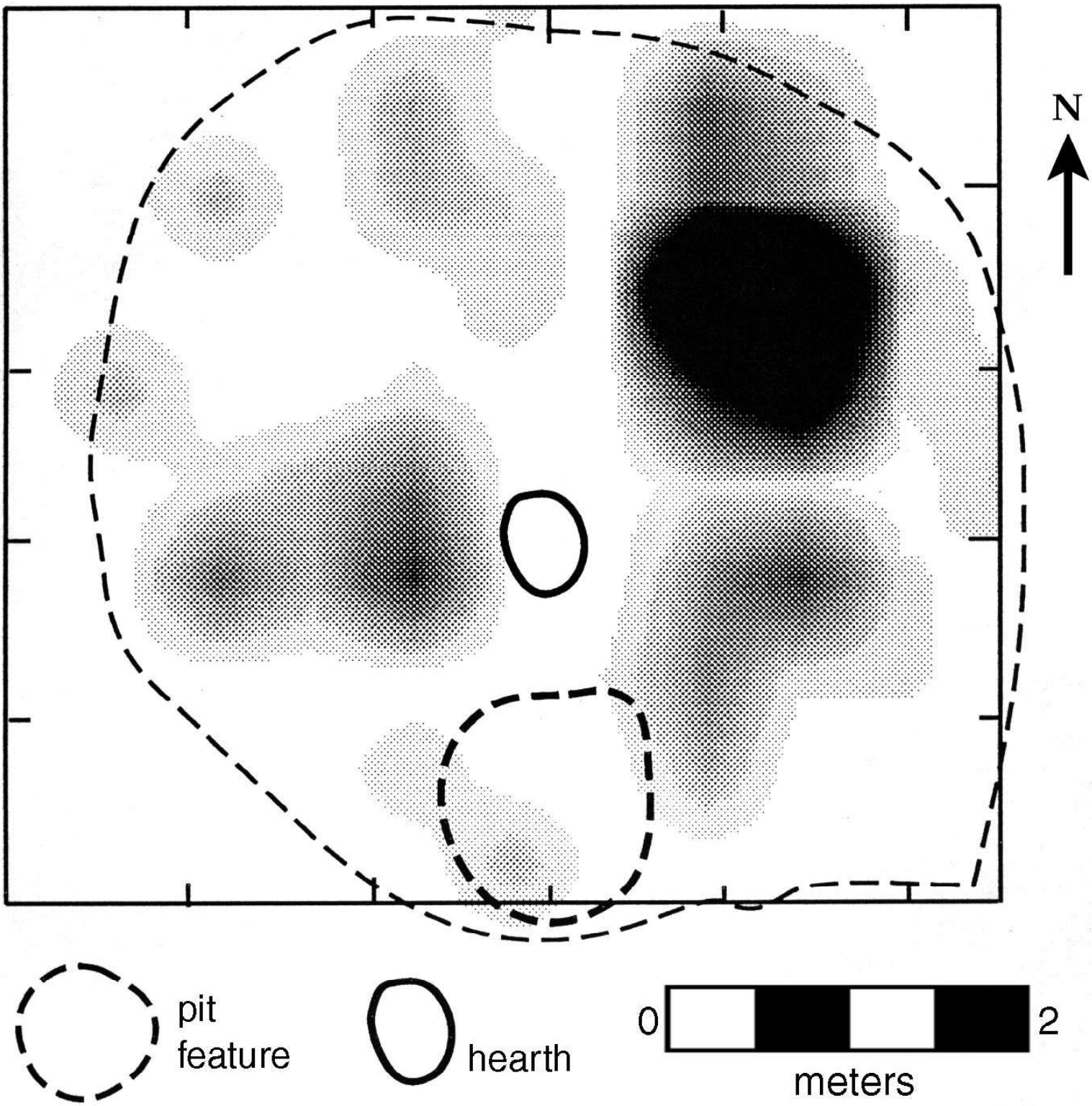


Figure 24. Distribution of Modified Artifacts in Stratum X

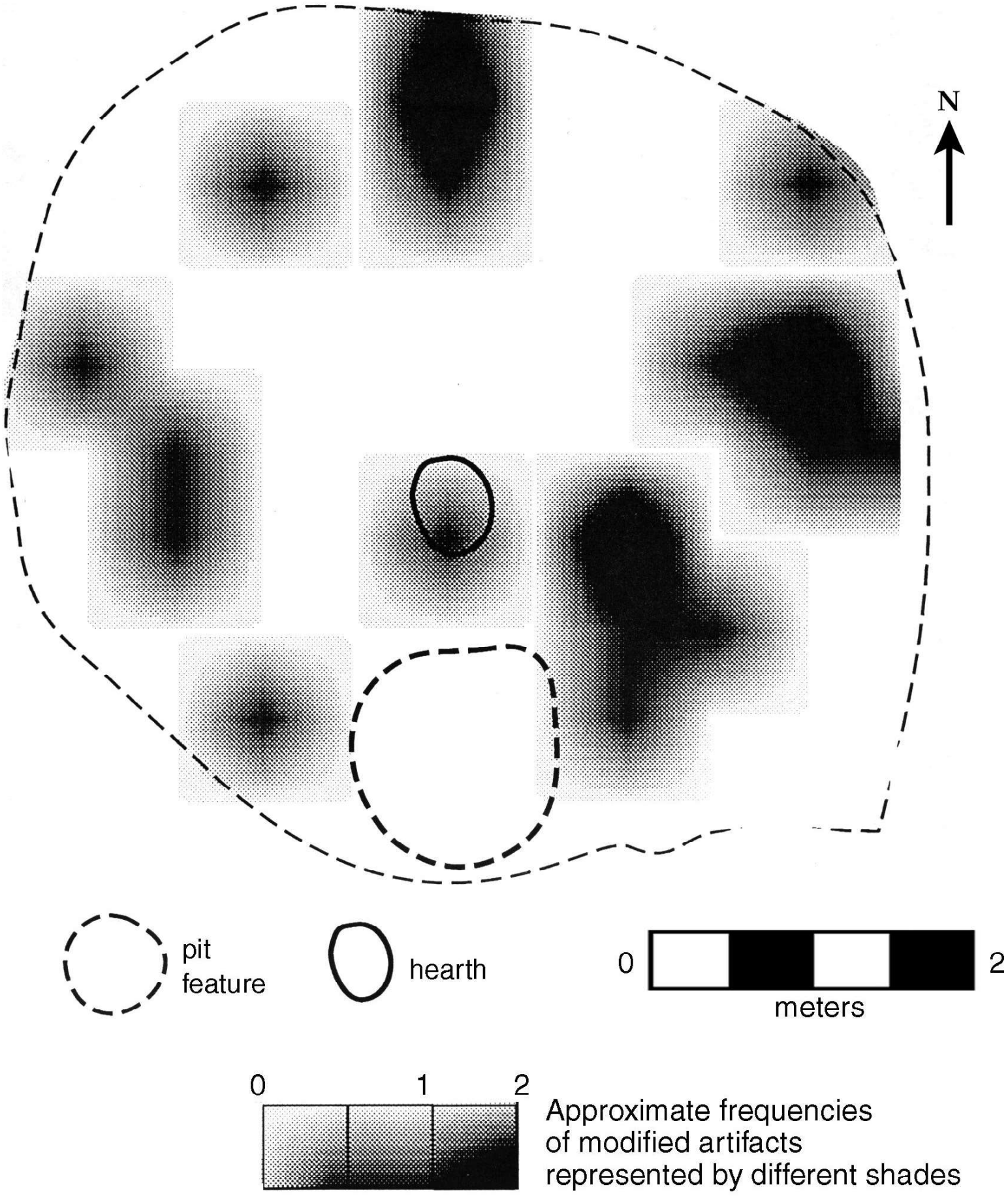


Figure 25. Distribution of Fish Remains in Stratum X

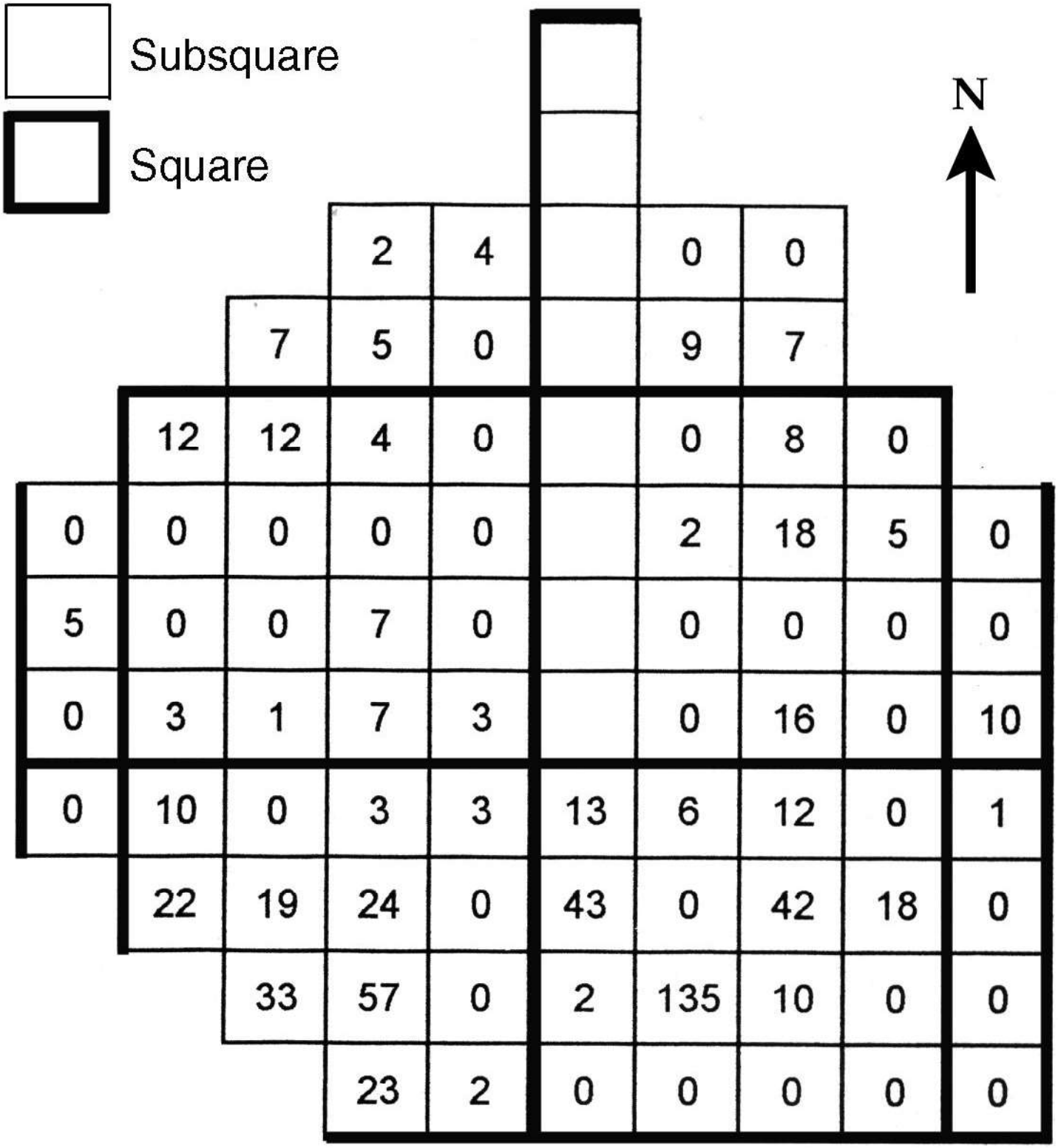


Figure 26. Distribution of Other Faunal Remains in Stratum X

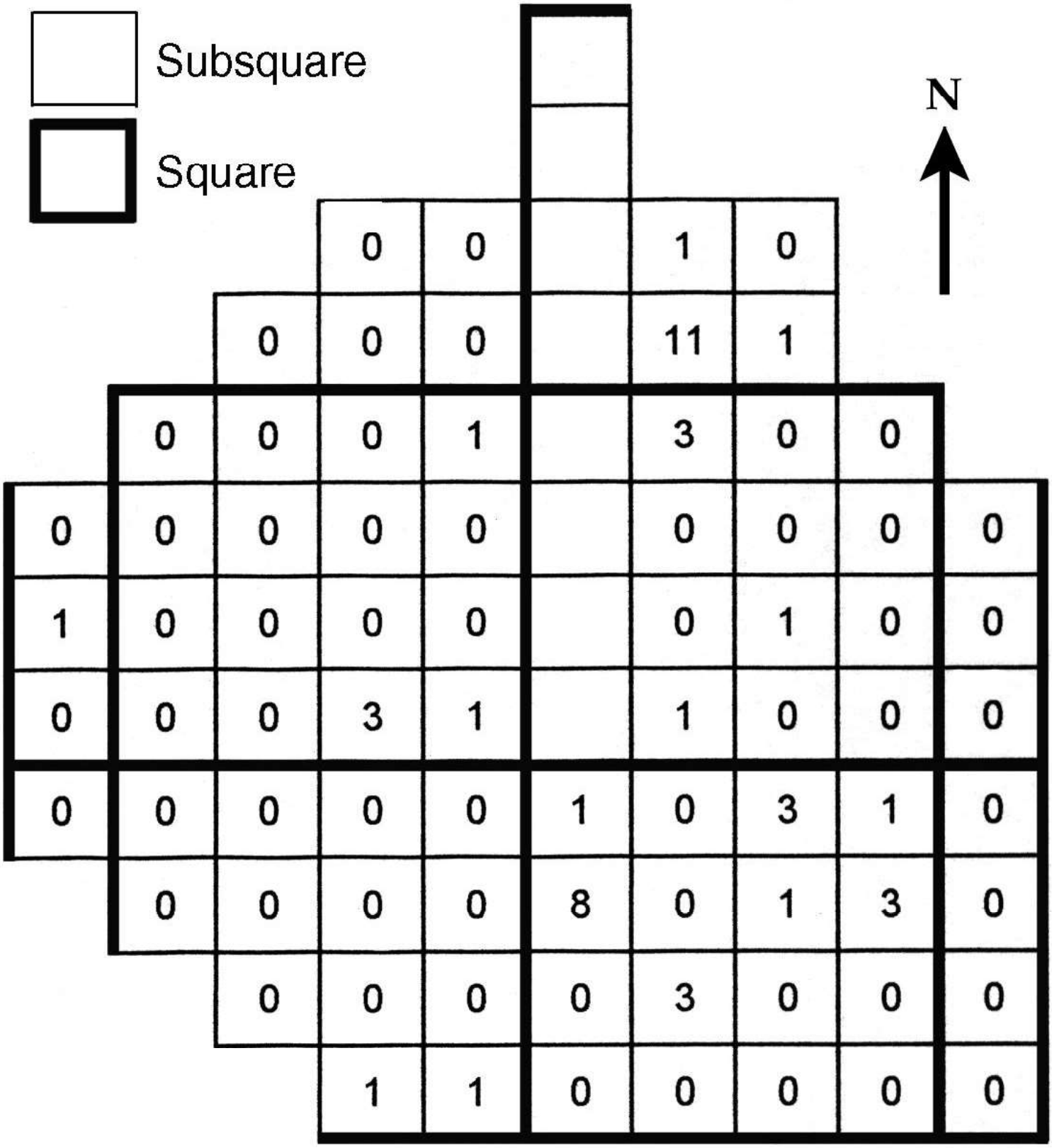


Figure 27. Reconstruction of Activity Areas in Stratum X

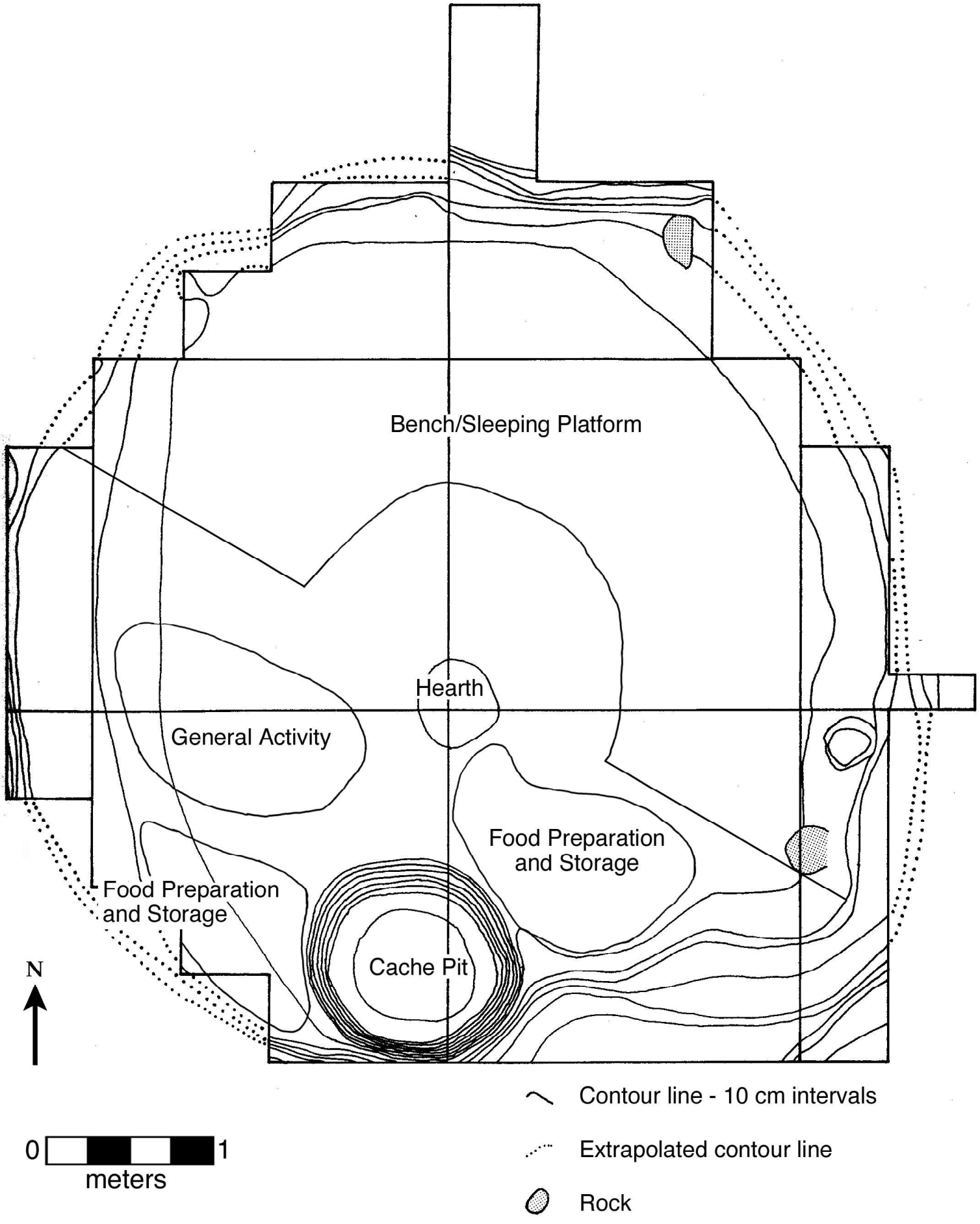
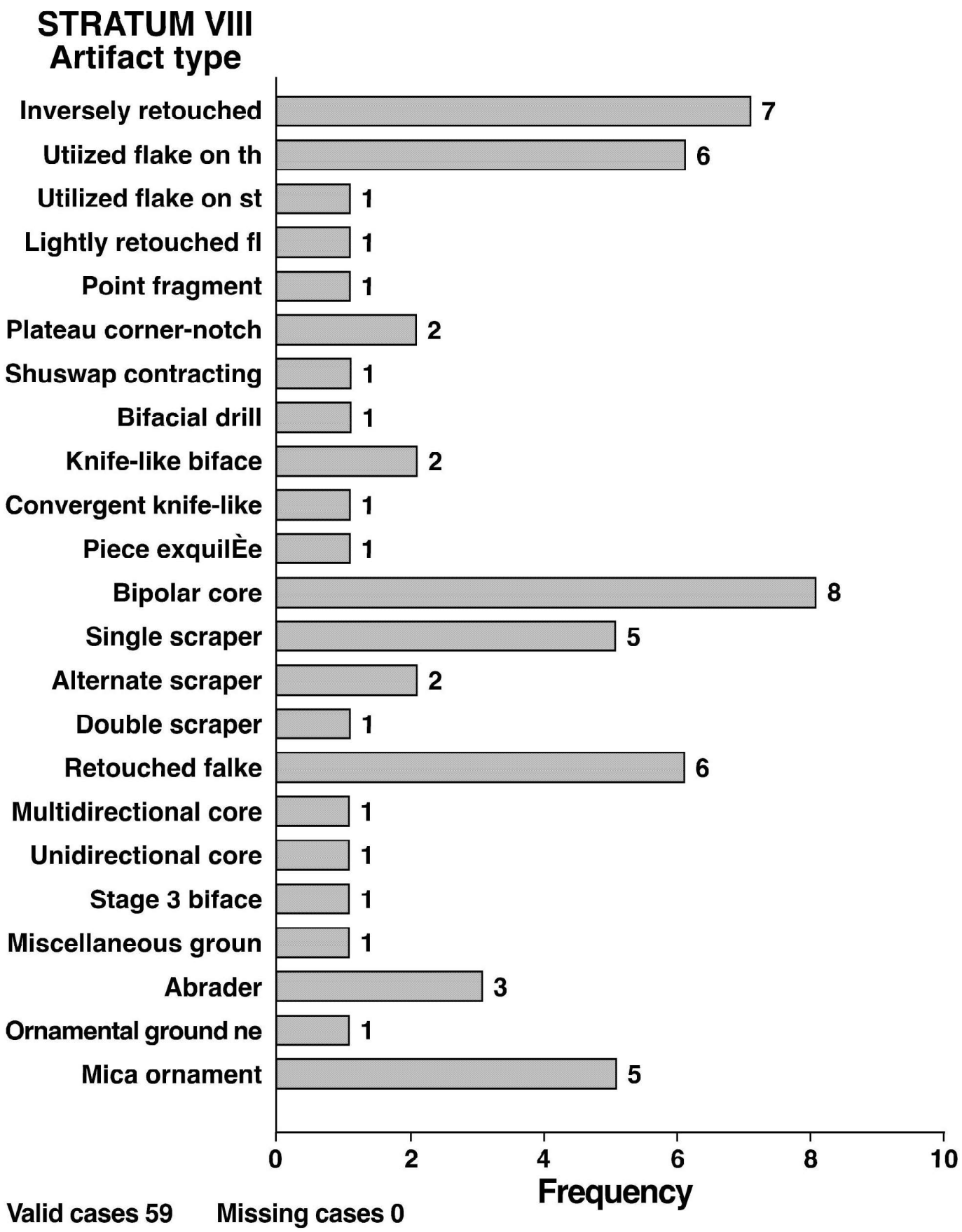


Figure 28. Histogram of Modified Artifacts in Strata VI and VIII



Summary of Excavations at HP12

Martin Handly

Introduction

In 1989, the Small Housepit Testing Program was undertaken to find small housepits with simple stratigraphy, (i.e., single occupations), clearly definable floors, and, most importantly, floors that had Kamloops horizons. This was seen as necessary so as to permit comparisons between HP's 7, 3 and the other small housepits. Both HP's 7 and 3 were occupied last during the Kamloops horizon. It was desirable that the small housepits be contemporaneous to allow for interhousepit socioeconomic comparisons with regard to the goals of the FRICGA Project. HP 12 was selected from a sample of eight trenched small housepits for the reasons mentioned above and because a possible Kamloops projectile point preform was found in Stratum II (roof) during test trenching.

Housepit 12 is located on the northern edge of EeRl#7 within 25 m of the Ponderosa Pine treeline. HP 12 measures 8 m in diameter from rim to rim and is about 1 m deep from rim to the bottom of the housepit surface. A north/south transect of HP 12 would show that there is a colluvial flow originating from upslope (north) and flowing into the center depression in the housepit. The east, south and west rims are all higher than the surrounding surfaces around HP 12 and therefore no colluvium appears to have entered the housepit from these areas, unless derived from the rim material itself.

There are two medium sized housepits located to the north-northwest (10–15 m away) and to the south (5–10 m away). The housepit to the north-

northwest is located at the base of the knoll where the site datum is. None of its cultural materials could have entered HP 12 through colluvial action given the height of the rim deposits above the slope. The housepit to the south is downslope of HP 12 and could not contaminate HP 12.

A north-south line was established in HP 12 and eleven 2 x 2 m squares were marked out (**Fig. 1**). These squares were oriented so as to provide the greatest areal coverage of the floor of HP 12. The rim deposits were not targeted for excavation. The pithouse wall/floor interface was of interest to assist in determination of the amount of living floor space that could be used by the inhabitants. Our goals were to define discrete activity areas, especially on the floor, to estimate the number of families residing in the housepit and their probable sleeping or eating places, to determine what types of activities were being conducted (cooking, eating, sleeping, flint knapping, etc.), and to try and determine the socioeconomic status of the house during its last habitation. This last question or goal is more difficult to define than activity areas, since the data to support this goal is more elusive and intangible.

According to the Residential Corporate Group model (Hayden and Cannon 1982) the larger housepits in Keatley Creek are seen as the controllers of critical resources (salmon, trade, exotic lithics). Smaller, "poorer", housepits must either trade to acquire these resources (not having full access privileges or man (woman) power to complete the task) or do without them to some extent. If this is the case, then HP 12 should have cache pits that would be comparatively smaller per floor area than HP's 7 or 3. Also, if HP 12 was in this type of socioeconomic relationship we should expect comparatively lower frequencies of lithic debitage, although of

"poorer" quality since the housepits should be inhabited for the same time period. Only further quantitative studies will allow us to determine if HP's 12, 7, and 3 were operating at the same time in prehistory and in the same economic sphere. When analyzing cache pit volumes between housepits, one must ensure that only those cache pits in use during the time period in question are used in the comparisons. This may allow for relative measurements of storage capabilities (the analysis of auxiliary, external cache pits are beyond the scope of this paper).

Exotic lithic sources as evidence of resource control by the larger housepits may not be as good an indicator of "wealth" as was originally thought. The vitreous trachydacites, cherts, and chalcedonies appear to be more evenly distributed throughout the environment than was previously assumed (Vol. I, Chap. 11). With these sources being non-localized, control becomes difficult, and possibly, impossible. Other aspects were then considered for allowing us to delimit "poor" material culture in the record.

Spare time and energy expenditure may also reflect the socioeconomic status of a group. The amount of time a group does not spend in subsistence activities for survival may be used to produce "luxury" or artistic items. This may be a possible indicator of socioeconomic level. In this vein, ground stone objects and engraved bone or antler occurring in HP 12 could be indicative of this type of activity. Their absence could indicate that HP 12 was of lower status if there were relatively more abundant types of these material artifacts in HP's 3 and 7. Lack of these objects could also be related to short housepit occupation, and this factor should be taken into account.

Comparison of storage volume to housepit living floor area between housepits may provide some clues as to resource control. The inability to

control for external storage pits is a major problem, as well as defining only those pits in use during the last occupation.

Socioeconomic status may not be easy to define in HP 12 with these criteria including the artifact assemblage. However, it was attempted.

Matrix Descriptions: Pithouse Dynamics

To understand any type of possible cultural patterning occurring in HP 12, we must first begin with a look at the cultural and natural processes that acted upon the formation of the HP 12 deposits. This includes the excavation, construction, and collapse history of HP 12, as well as the natural geomorphological processes that occurred during the post-collapse period. Inherent in this discussion is the notion that we are dealing with a dynamic process. In fact, different processes may produce similar matrix development.

As Teit (1909) states, housepits were excavated into the sterile soil, and this matrix placed on the perimeter of the housepit (rim). In the case of HP 12, excavation into sterile varied from 30 cm in the south to 55 cm in the east. After excavation was finished, a roof superstructure was erected.

After the use-life period of the housepit ended, it appears that they were burned to rid them of vermin or possibly to ensure that others could not use them. If the pithouse was not re-excavated, as it appears was the case in HP 12, then natural colluvial changes began to occur with slopewash, aeolian silts, and soil formation processes beginning on top of the collapsed "roof" of the old pithouse. Groundwater transportation of sediments and associated artifacts would also have a major impact on the post-depositional history of the housepit.

The construction of HP 12 produced five general strata: surface, roof, floor, rim, and sterile (**Fig. 2**). Each reflects in its own fashion excavation, construction, abandonment, and post-depositional infilling that occurred here. The strata above all show some degree of variability across HP 12 and it is hoped that the following discussion can explain some of this variability.

Matrix Descriptions

Surface - Stratum IA: This matrix is localized in Squares D and E. It is a moderately compact, medium gray brown (10 YR 3/3) sandy silt with 50–60% granules. It averaged 8–10 cm in thickness in this area. The matrix appears to originate from rim and roof colluvium washing in from the eastern rim. The rim here rises fairly quickly and rainwater action and gravity would tend to concentrate the flow of granules downslope to the bottom of the housepit. Very little outside colluvium would be incorporated in this matrix.

Surface - Stratum I: This matrix is found covering the roof deposits at variable thicknesses across the entire housepit. It is a moderately compact medium gray brown (10 YR 3/3) sandy silt with 5–20% granules and 0–5% pebbles. The variability in depth of stratum is related to the origin of the colluvium producing this stratum. The stratum is at its deepest in the housepit center where there is a natural depression produced by a collapse of the thinner roof materials onto the housepit floor. In conjunction with this, there is a natural colluvial "path" where waterborne sediments can flow into HP 12 from the northern upslope hillside. Characteristic of this climatic zone is the occurrence of thundershowers which produce short term but high intensity rainfall patterns. This type of precipitation pattern will produce a water transport system with a high sediment carrying capacity.

Combine this with the change in ecosystem produced through overgrazing in recent years, and sediment deposition would naturally result in HP 12 of Stratum I (colluvium possibly of fairly recent origin). The sediment carrying capacity of the colluvial wash also carried in many of the small flakes from upslope found in Stratum I.

Near the pithouse rim to the east, west, and south the percentage of pebbles increases in Stratum I. This is due to the fact that the surface of HP 12 in this region is derived from aeolian deposition occurring on the roof surface and soil formation processes and colluvial wash from the *roof surface.* The surface of the roof becomes the originating matrix for the accumulation of Stratum I. Since the roof has a higher percentage of pebbles and granules than Stratum I, it is expected that those areas of the housepit where surface deposits originate from roof materials, higher counts of granules and pebbles will be present.

Roof (Stratum II)

Excavation of the roof in HP 12 was broken down into three arbitrary levels: 0–5 cm roof surface; roof fill, and; the last 5 cm above floor (roof bottom). It must be understood that these three levels are not reflective of the dynamic nature of the roof deposits. The original construction of the house, its occupation and collapse, as well as post occupation processes all interact to produce what we uncovered in our excavation of HP 12.

Faunal and lithic materials, either culturally dumped or naturally deposited, occur with variable frequency. The structural components of the housepit, i.e., beams, support members also occur in roof deposits. Gravity, colluvial action, and the non-uniform rate of house collapse (caused through

burning) represent dynamic, rather than static, formation processes in the roof. The arbitrary levels in our excavation were maintained, but *all* excavators were instructed to be alert to matrix changes within these arbitrary levels. Hopefully this will permit future study of roof dynamics. Only general observations will be undertaken here.

Stratum II, is moderate to fairly compact, dark gray brown, [grading to dark gray black in the center areas of the housepit (10 YR 4/2)] sandy silt. Clasts vary, but are generally in the range of 20% granules, 10–30% pebbles, and 0–5% cobbles. Interspersed in this matrix are beams of burnt wood and charcoal chunks.

The central roof area of HP 12 appears to be a dark gray black in color and averages about 15 cm in depth. This staining may be reflective of dumping of refuse on to the roof during occupation. The thinness of these deposits also conforms to Teit's description of central roof deposits (Vol. II, Chap. 2). Roof is easily distinguishable from surface deposits due to the increase in pebbles.

The edge of the pithouse where rim and roof come into contact produces a mixture of matrices. The roof/rim interface *may* be recognizable during initial construction of the house. However, during the variable rates of collapse during a pithouse burning, roof and rim deposits mix to a certain degree. This is the case along the perimeter in HP 12,. This is not a uniform process across the housepit; this mixing is most prevalent along the south and west walls. The east wall appears to be mostly composed of rim deposits along the perimeter due to the higher wall on that side. More materials from the original excavation may also have been dumped in these areas.

Along the perimeter of the house, within its walls, burnt wood, charcoal, and beams begin to occur at about 30–35 cm BS. These elements are parts of the structural components of the housepit and this may reflect the depth to which roof sediments were deposited.

Along the south wall/floor interface, it was noted that where burnt beams appeared to have fallen and bridged the space between the wall and floor, very fine, silty sediments collected below them. Above the beams the matrix appears more pebbly. This may be an example of "filter collapse" events occurring in the pithouse as the fine clasts filtered through the wood superstructure during the collapse and burn of HP 12, or it may be a case of fine sediments collecting under sleeping platforms against the wall.

In summary, HP 12 roof deposits are thin towards the center of the housepit and thicker near the walls (and more clastically different). To gain an accurate understanding of activities occurring on the roof, the collapse sequence of the housepit should be reconstructed.

Floor (Stratum III)

One of the primary reasons for excavating HP 12, was that it had an easily definable floor. The floor in HP 12 is moderately to fairly compact, mottled dark gray, black/yellow (10 YR 2/1 to 10 YR 6/2) sandy silt with 20–30% granules and 10–20% pebbles, and 0–1% cobbles. The compactness and mottling of the stratum allowed for easy visual delineation of the floor. An understanding of the floor in its cultural sense is also needed to define the stratum.

The floor of HP 12 is where the inhabitants lived, slept, cooked, ate, procreated, and engaged in other activities. It was a living floor and many of

the activities involved with living will be represented to a degree in the floor. Approximately 25–30 m^2 of floor area were excavated allowing for almost complete exposure of the HP 12 floor and associated features and postholes.

The mottled color of the floor is a consequence of "mixing" of the sterile substrate with the cultural debris produced through living. These turbative processes define the depth of organic staining that occurs. Staining depth is related to:

1) activities occurring on the floor e.g., high traffic vs. low traffic areas, cooking vs. sleeping;
2) differences in substrate composition and compaction on which the floor formed, and;
3) floor cleaning event intervals, and other similar activities.

The extent of organic staining into sterile reflects the depth to which the staining could penetrate due to the variables mentioned above. The actual surface of the floor is usually 2–4 cm above this and can be defined by several criteria:

1) just above the floor surface a matrix change often appears in the roof bottom deposits. This level is composed of fine clasts that appear to have been deposited on top of the floor during collapse. The matrix is soft and contains large quantities of small charcoal pieces. Once this matrix was encountered, one subjectively knew the floor was close;
2) flake sizes in the floor are smaller, relative, to the roof;

3) flakes and bone often lay horizontally on or in the floor. This is the only matrix where salmon bone is preserved well in HP 12, and;
4) the floor is generally more compact than the roof bottom, although floor compactness varies across the housepit.

Not all of these variables/criteria occur in each subsquare, nevertheless, excavators appeared to have no difficulties in delimiting floor. With this in mind, the floor appears more compact in the north and northeast and softer along the south and southwest walls. Whether this reflects activity areas or substrate differences (or other variables) is unknown. These areas do correspond to areas of low flake density (south and southwest) and to storage and high flake density areas (north and northeast). These are only subjective inferences at this time and further study will be needed to explain these perceived differences.

Stratum IV (Rim/Rim Slump)

This matrix is variable across the housepit rim and represents sterile till dug out of the original housepit as well as roof materials and colluvium. It is moderate to fairly compact, light yellow brown (10 YR 5/3) sandy silt with 20% granules, 30–40% pebbles, and about 5% cobbles. The rim typically overlies the original yellow brown silt (aeolian) paleosol that caps the sterile till matrix into which HP 12 was excavated.

The matrices deserving of more study are the components of the "roof". Understanding the processes affecting the artifacts on and in the roof during its history, will allow for better cultural inferences to be put forth. The surface and floor strata are easier to explain and understand in comparison to the roof.

Stratum IIIA (?Floor accumulation zone?)

Stratum IIIA occurs in the northeast corner of HP 12 forming a cone-shaped stratum which thins out to the south and west. This appears to be an area where cleaning events from the floor were dumped and mixed with rim sediments filtering down the wall. The accumulation deposits are less compact than the floor deposits they overlie.

Lithic Patterning in HP 12

Before entering into a detailed discussion of lithic patterning, it should be noted that this is only a preliminary, largely subjective analysis of the lithics recovered from HP 12. The most common debitage and tool lithic material in HP 12 is granular or moderately vitreous trachydacite (99%). Other lithic types noted are cherts (Hat Creek, Walhachin: red), chalcedony (pink-white), and quartzites (red-brown, yellow brown).

Debitage patterning on the floor is determined by cultural practices occurring during pithouse occupation (manufacturing events, cleaning/ sweeping events, possible accumulation zones underneath sleeping platforms, benches) and the techniques used for recovering the lithic debitage. Three areas of debitage accumulation in Stratum III (floor) were noted in HP 12 (plus another possible area):

- Area One is located in Square A, Subsquares 5, 6, 9, 10, 13, 14. Test trench A, produced quite a bit of lithics from the floor and the adjacent subsquares had a high occurrence also (Sq. A Ssq.'s 6, and 10 had 28 and 60 flakes respectively);
- Area Two, Square E, Subsquares 7, and 8, had 66 and 62 flakes respectively;

- Area Three, Square J, Subsquares 5, 9, and 13, and Square F, Subsquare 16 had higher flake counts.
- Area Four, Square C, Subsquare 14 had 25 flakes (see **Fig. 2**).

Not only do areas with high debitage accumulation need to be noted, but also those areas where little or no debitage occurs may be useful for delineating activity areas. The southeast, south, and southwest pithouse wall/floor interfaces all show little or no debitage on the floor. Also, all of Square I appears barren of lithic materials. Tentatively, it could be assumed that lithic reduction activity areas were not associated with the house edge that was excavated. Something different is happening in the northwest of HP 12 in Square I. It is markedly different in lithic flake density from any other squares. This may reflect an activity area of the house not associated with lithic reduction. The bone basketry needle in the floor of Square I (Ssq. 3), and the bone perforator/awl from Square I may reflect possible basket making or hide working areas.

Retouched Flakes (excluding projectile points)

Bifacially and unifacially retouched flakes appear to occur more frequently in roof deposits than in floor deposits. Retouched tools appear to be fairly evenly distributed throughout the entire excavated roof areas of HP 12, although Squares I, J, and F may contain slightly higher concentrations. These squares occur on the north and north-northeastern aspect of the HP 12 roof.

Retouched flakes also occur in Stratum III (floor) but to a much lesser degree. Only six are represented at this time and occur in : test trench Square A (uniface, biface); Square B, Subsquare 15 (biface); Square E,

Subsquare 15 (Scraper); Square I, Subsquare 1 (Scraper): and Square F, Subsquare 12 (Scraper). Cursorily, it appears that more scraper type unifaces occurred on the floor than other retouched flakes. No other spatial patterning of tools is evident at this time.

Projectile Points and Relative Age of HP 12

When dealing with socioeconomic models, the housepits involved in the analysis of a residential corporate group economy *should* be inhabited contemporaneously. A problem that will arise between HP 12 and HP's 3 and 7 is one of determining whether or not they were occupied at the same time. Projectile point dating provides a broad range of time during which HP 12 could have been occupied.

Projectile points were found in all three major strata (surface, roof, and floor) with the majority occurring in the roof. Discussion of projectile points will follow their occurrence through the natural strata of HP 12.

Three projectile points were found in the surface matrix. Square D, Subsquare 16, Stratum I contained a corner notched point indicative of a late Plateau occupation. Square J, Subsquare 10, Stratum I contained a late plateau/early Kamloops point fragment. Square F, Subsquare 12, Stratum I contained a corner notched late Plateau point.

Nine projectile points or identifiable fragments were found in the roof matrix. A possible Kamloops preform was found in test trench A in Square A, Subsquare 11, Stratum II, Level 2 a late Plateau corner notched point. Square C, Subsquare 8, Stratum II, Level 2 had a late Plateau corner notched point. Square I, Subsquare 5, Stratum II, Level 2 had 3 chert fragments of a small stemmed Shuswap projectile point. Square I, Subsquare 7, Stratum II, Level 4

contained a corner notched late Plateau point. Square I, Subsquare 8, Stratum II, Level 3 contained a late Plateau/early Kamloops point with notches continuing up the base towards the side. Square J, Subsquare 2, Stratum II, Level 2 contained a side notched, large early Kamloops point. Square E, Subsquare 2, Stratum II, Level 3 contained an early Kamloops side notched point.

Only one projectile point was found in association with the living floor in HP 12. In Square A, Subsquare 15, Stratum III, Level 1, a late Plateau/early Kamloops point was found. It is made of chalcedony and is long and thin. Notches are still corner notched, however, this style of projectile point appears to date to a transitional stage in Plateau prehistory between the Plateau and Kamloops horizon. Provisionally it suggests a date between 1300–1000 BP for the last occupation of the house.

Other Lithic Artifacts

Ground stone artifacts were not found at all in HP 12 (except for one chillum fragment). Any rounded rocks that were even suspected of having been modified slightly were kept and catalogued. A sandstone abrader fragment was the only abrading stone found in HP 12. It occurred in Square D, Subsquare 3, Stratum II, Level 3 (roof fill). Due to its very fragmentary nature, it may *not* even be an abrader.

Also of interest is a chillum pipe fragment encountered in Square C, Subsquare 13, Stratum II, Level 1 (roof surface). The fragment consists of part of the pipe stem. Although found in the roof, pipes are an item that involve an expenditure of energy and free time to make. It may have been discarded on the roof after breaking by either the inhabitants of HP 12 or following

abandonment, or it may have been brought to the house by children who scavenged the broken pieces from elsewhere nearby (Hayden and Cannon 1983:132). No patterning in flake distribution is apparent at this time. Lower flake counts correspond to partially excavated squares.

In the roof surface, Squares D, J, E have the highest numbers of flakes. These squares are located in the north and northeast of HP 12, with Square D being the closest to the center. Square I has the largest quantity of flakes in roof fill. Square I also has the most post occupational disturbance (associated with Feature 8) in comparison to other squares. Squares D and J contain the largest number of flakes in the roof bottom (see Table 1).

Fire Cracked Rock (FCR)

In HP 12, fire-cracked rock (FCR) was concentrated in Square I in the roof stratum. This appears to be associated with the higher frequency of faunal remains found in Square I (see following discussion). This may imply that the northwest roof area of HP 12 was used for more refuse disposal than other roof areas.

Faunal Remains Distributional Patterns

Faunal remains were recovered in all of the three main strata, as well as in certain storage features within the housepit. Except for antler remains, all the other faunal remains show patterning indicative of either localized dumping (cleaning) events or food preparation, consumption and storage activities.

Square J appears to be the area of the housepit where most of the salmon vertebrae and spines occur within floor context (Sq. J Ssq.'s 3, 4, 5, 7, 8, 9, 10, 12, 13). These subsquares surround Features 4, 5, and 7, which

appear to be either small storage pits, or after this function was finished, small refuse pits. Two subsquares in F, 12 and 16, that are contiguous with Square J, also show salmon bone on the floor. This area of the housepit may reflect food storage and consumption.

The preservation of the salmon spines and vertebrae in a floor context, argues against the possibility that this part of pithouse floor was in a high traffic/trampling zone. Many of the salmon remains occur in close proximity to the features mentioned above possibly implying that traffic near these features occurred infrequently.

There was some post-occupational deposition of ungulate remains in stratum I, (surface) in Square D, Subsquares 9, 10, 12, and 14. This is seen as a post-abandonment butchering event.

Although some mammal long bone fragments were encountered in the floor matrix the vast majority appear to occur in the roof surface/roof fill substrata of the roof (Stratum II). Localized dumping or cleaning events of burnt and unburnt mammal bone may be inferred in these substrata: Square D, Subsquare 14, Stratum II, Levels 1 and 2, a total of 23 bone fragments were found; in Square I, Subsquare 7, Stratum II, Levels 2 and 3, 35 bone fragments; and in Square I, Subsquare 2, Stratum II, Levels 2 and 3, 37 bone fragments were recovered. These major dump areas may have occurred around the central roof entrance of the housepit, if there was one.

The roof fill/surface and roof bottom substrata in Squares I and J show the highest occurrences of bone fragments throughout the housepit roof. It appears that the majority of bone refuse disposal occurred on the north side of the housepit roof.

Two bone artifacts were encountered in Square I. In Square I, Subsquare 3, Stratum III, Level 1 (floor) a bone basketry needle 8.2 cm in length, made from a mammal rib was found. The perforated proximal end broke upon removal but both pieces were recovered. A bone perforator (awl?) was also found in the north roof of Square I during profiling. These artifacts may reflect basketry activities that occurred in the housepit.

Antler preservation in HP 12 was variable, ranging from excellent to poor. An antler "wedge" (Sq. G, Ssq. 5, Stratum II, Level 1) and a large (20 cm in length) distal antler section, probably elk (Sq. E, Ssq. 3, Stratum II, Level 2), were both in excellent shape. The antler "wedge" had been ground to shape and the elk antler shows some slight proximal beveling. The remainder of the antler found was in fragmentary condition. A possible antler billet with distal crushing occurred in the roof of Square G, Subsquare 1, Stratum II, Level 3 and antler fragments were encountered in the roof of Square D, Subsquare 14, Stratum II, Level 2 . Two large pieces of antler were encountered in Square E, Subsquare 4, Stratum II, Level 3 and above feature 6, Square J, Subsquare 4, Stratum III, Level 1.

Differential preservation of faunal remains and perceived spatial patterning of these materials is affected by a number of cultural and natural transformations occurring in the pithouse environment:

1) differential preservation related to the specific matrix that faunal material is deposited in;
2) the type of faunal material; mammal long bone vs. antler vs. cranial bone, salmon vertebrae vs. salmon ribs/spines;
3) high vs. low traffic areas;
4) cleaning events of pithouse floor, and;

5) scavenging activities by canids.

All of these factors (and others) should be taken into account before final determinations are made concerning activity areas related to faunal remains.

Salmon Bone Recovery

In floor and pit fill deposits, faunal recovery, with regard to salmon ribs and spines, was noted to be unproductive in HP 12 when 8 mm screen mesh was used. Testing with 3 mm screen shows that the salmon ribs/spines also pass through the mesh since they appear to go vertically with screening. What is suggested is that when excavating floor or pit fill deposits thought to contain salmon bones, a sample should be taken and the approximate percentage noted that is represented by the sample of the whole deposit. These samples can then be compared to levels of occurrence characteristic of the flotation samples systematically taken from floor and pit deposits.

Other Fauna

Three beaver incisor fragments were also encountered during excavation. Since these incisors were often used for carving and engraving, their occurrence in HP 12 may be indicative of such activities. The fragments were found in Square E, Subsquare 3, Stratum II, Level 3; Square E, Subsquare 11, Stratum II, Level 3; and Square K, Subsquare 8, Stratum II, Level 3 (all roof fill).

Pithouse Construction: Archaeological Evidence

Through excavation of almost the complete floor area of HP 12, it may be possible to make some inferences concerning housepit construction.

These inferences are subject to reinterpretation in the future when more detailed analyses have been completed. (Features are discussed in a separate section following).

Four small (in diameter) postholes were spaced equidistantly along the excavated wall of HP 12. Their small size may reflect their use as small support posts or as support for benches/sleeping areas. In the house center, where one would expect to find main support posts according to Teit (1900), it is interesting to note that in HP 12, no real pattern of center postholes emerges. Four postholes are present with depths into sterile ranging from 9–17 cm. Housepits with central roof entrances and log ladders for entrances into them, usually would have four posts arranged in a rectangular pattern on the floor (Teit 1900). As this is not the case, there may have been a side entrance in the unexcavated northwest part of HP 12. The ground level in this area appears depressed, but this is probably more noticeable due to the post-occupational disturbances created by Feature 8 (see below). Any further queries related to entry to the housepit must await further excavation.

The subsquares against the southwest wall in Square B provided abundant corroboration of Teit's 1900 account dealing with housepit roof construction. In the roof fill/roof bottom of Stratum II collapsed roof support sections were uncovered displaying the process by which the roof was constructed to produce a tight seal. Roof beams with overlying cross members at right angles were covered by Douglas fir boughs and their needles (**Fig. 3**).

Although isolated areas of fire reddening were noted on the surface of the floor, none of them extended through and into the sterile matrix (most noticeably in Sq. I). This is most probably related to charcoal and wood

burning on the floor during collapse (this may indicate that this area of the pithouse remained standing longer than other areas of the house, allowing for the wood to burn and oxidize the floor). This being the only fire reddening in HP 12, it is safe to say that no evidence for a hearth was recovered. A hearth may occur in the areas of the housepit not yet excavated, but that appears unlikely since the vast majority of the floor surface was excavated with only a little left along the walls in the northwest and northeast sectors. Cooking may have occurred in other housepits close by, or external to HP 12. However, heat to warm the housepit was needed during winter occupation so one might assume, on the basis of little fire reddening and no hearth, that the housepit was not occupied intensively or for too long during its last occupation. The thin floor deposits may also indicate this. It must be remembered that the occupants of HP 12 lived there long enough to fill in a large salmon cache pit and create a hard, compact floor above it. None of these characteristics allow for easy statements of a definitive nature concerning length of house use.

Feature Descriptions

Feature 1 was a moderate sized pit encountered in Square A, Subsquares 10 and 14 and continued in Square I, Subsquare 1. It is an elongated shallow U-shaped pit about 100 cm north-south by 30–40 cm east-west with a depth below floor of 10 cm. The pit appears to be contemporaneous with the last housepit occupation, since Stratum III (floor), did not cover the pit fill. No artifacts or bone were recovered. Its function is unknown.

Feature 2 was a large bell shaped cache pit located in Square A Subsquares 7, 8, 11, and 12. It is roughly circular in plan view and is approximately 60 cm in diameter. It extends 70 cm below floor level. From 50–60 cm below floor level in the north of Feature 2, salmon vertebrae (articulated and non-articulated) and two mammal bone fragments were encountered. Pit fill was much looser and darker than surrounding floor deposits and would indicate use and infilling of the cache pit during the last occupation of housepit. The volume of this cache pit is about 0.189 m^3.

Feature 3 was a large bowl shaped cache pit located in Square D, Subsquares 10, 11, 12, 14, 15, and 16. The cache pit is ovate in plan view measuring 70 cm (east-west) by 65 cm (north-south). It extends about 35 cm below floor level (volume is about 0.129 m^3). Approximately 20 cm below the floor, ungulate and mammal bone was encountered along the southeast wall. At this level, a covering of rocks appeared to have been thrown in to fill the pit. Below the rocks were found about 60 salmon sections with articulated vertebrae columns arranged linearly along an east-west axis. The important aspect of this pit is that it was filled in and a floor established above it before the housepit was abandoned.

Features 4 and 5 will be described together as they are, to an extent contiguous. Both are found in Square, J, Subsquares 3, 7, and 11. Feature 4 is a shallow U-shaped pit with a lineal plan view. It is about 70 cm in length and 10 cm deep, varying from 15–20 cm in width. It joins Feature 5 at its northern end in Subsquare 11. Feature 5 is a deep U-shaped pit about 30 cm in diameter and 35 cm deep (volume is about 0.024 m^3) and is contemporaneous with the last occupation of the house. Both features

appear to have been filled in with refuse containing charcoal, salmon bones and small bone fragments.

Feature 6 is a moderate sized, shallow bowl shaped pit, located in Squares D, I, and J. It is roughly circular measuring 55 cm in diameter, and extending 15 cm below the floor (volume is about 0.04 m^3). It contained salmon bone, fire cracked rock, mammal bone flakes and charcoal. Since the floor capped Feature 6, as well as Feature 3, it is assumed that they were both filled in at the same time. It should be noted that the sterile till in the mentioned area (Feature 3, and 6) displays a basin shaped depression into which fill was deposited to produce a level floor. This occurred before the final house occupation.

Feature 7 occurs in Square J, Subsquares 4, and 8. It is an irregular basin shaped moderate sized pit. It is ovate in outline measuring 30 • 40 cm in diameter and extends 18 cm below floor level. It contained two mammal bone fragments, two salmon vertebrae and six flakes. It was probably originally used as a storage pit, then later as a refuse pit. It is contemporaneous with the last occupation of the housepit.

Feature 8 is an intrusive pit dug into the roof material after the abandonment of HP 12. The profile of the pit in the north and west walls of Square I suggest a pit about 3 m across. The pit appears to have been dug into the roof and possibly into sterile in the unexcavated section of HP 12. This then became the rim and roof of the small structure. A floor zone (Stratum IX) is covered by a layer of burnt wood (Stratum X). Over this, is a cap of "sterile" material (Stratum VIII) which is covered by re-deposited roof from HP 12 (Stratum VII). All of this is covered by surface colluvium (Stratum I). The floor/burnt wood strata may reflect an original use of this structure

with the sterile capping reflecting a later use (i.e., two functions, one at a later time). The small size of the structure may be used to infer that this was an external cache pit or possible menstrual hut associated with the two adjacent housepits. Further excavation may allow for a more certain interpretation (see Feature notes for a more complete description).

Feature 9 is located is Square K, Subsquares 4, and 8. It is a large, irregular U-shaped pit. It is about 90 cm north-south by 35 cm east-west, with a depth of 35 cm below the floor. This pit may have originally been used for storage but was filled in with cobbles. Feature 9 is located against the northern wall of HP 12.

Summary

Our preliminary objectives for the excavation of HP 12 were basically met. Most of the floor area was exposed, criteria for easy identification of the floor were defined, and occupation of the house appears to be within a 100–200 year range of the time that HP's 3 and 7 were occupied (1,080±70 years). Projectile points in association with the floor provide a date of 1300–1100 BP, Late Plateau/Early Kamloops. Any further inquiries into the socioeconomic status of HP 12 with respect to HP's 3 and 7 should wait until further analysis is undertaken. It is strongly recommended that further excavation be carried out in other small housepits so as to increase the sample size and the reliability and validity of any interpretations made.

After looking at the amount of living space in HP 12 (excluding storage areas) it is hard to imagine more than six to eight people living comfortably in the house. Food storage (in woven baskets), communal and sleeping areas would probably ensure that an extended family or two small families would

be all that could fit in HP 12. More ethnographic data needs to be explored with respect to house size (floor area) versus the number of individuals living in them. This is seen as integral to our understanding of how residential corporate groups may have been operating at Keatley Creek and specifically, how they relate to HP 12.

Estimating the length of occupation of a housepit, especially HP 12, is difficult at the best of times. Artifact patterning on the floor at the time of abandonment is only a general indicator of activity areas and may not be reflective of socioeconomic status. By themselves, the few flakes or bones on the floor may or may not indicate poor status. This appears to be too simplistic of an approach. It fails to take into account cultural and natural transformations that are occurring pre- and post-abandonment, as well as the recovery methodology employed. The amount of cultural staining in the roof deposits may be indicative of the amount of refuse incorporated into the roof materials. However, using organic staining as a subjective indicator of length of occupation is not quantifiable or useful if one does not know the refuse dumping interval, the amount and types of material discarded, the type of matrix it is occurring in, and other similar factors.

I see HP 12 as a short term occupational structure in relation to other large housepits (3 and 7 for instance). There, diagnostic artifacts can be used to separate overlapping floors, intersecting pits, etc. With HP 12, one can really only say that the *last* occupation of the house occurred during Late Plateau/Early Kamloops times. In conjunction with this, the divergent projectile points in HP's 3 and 7 from those in HP 12 lead me to believe the last occupation of HP 12 did *not* occur at the same time as the last occupations of HP's 3 and 7. The inhabitants were there for a short time

period, and may have been poor, but there is no reason to believe that they were involved economically with HP's 3 or 7.

Acknowledgements

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References

Hayden, Brian, and Aubrey Cannon

1982 The Corporate Group as an Archaeological Unit. *Journal of Anthropological Archaeology* 1: 132-158.

1983 Where the Garbage Goes: Refuse Disposal in the Maya Highlands. *Journal of Anthropological Archaeology* 2: 117-163.

Teit, James

1900 The Thompson Indians of British Columbia. *Memoirs of the American Museum of Natural History* 2(4)

1909 The Shuswap. *Memoirs of the American Museum of Natural History* 2(7): 447-789.

Figures

Figure 1: Floor plan of HP 12, outlining the subsquares and north-south line.

Figure 2: A central section profile of HP 12.

Figure 3: Charred beam distribution in HP 12.

Table 1: Housepit 12. Lithic D, Flake Distribution According to Roof Substrata

(numbers approximate)

Square	Roof Surface	Roof Fill	Roof Bottom	Total	% of Sq. Excavated
A	60	90	90	240+	100%
B	15	20	5	40+	44%
C	50	150	20	220	100%
D	100*	60	100	260	100%
E	70*	100	80	250	56%
F	20	30	20	70	38%
G	30	100	35	165	50%
I	50	240	60	350	100%
J	80	50	110	240	100%
K	7	45	7	~60	13%
L	5	16	0	~20	13%

(+) Test Trench not included

Figure 1. Floor plan of HP 12, outlining the subsquares and north-south line.

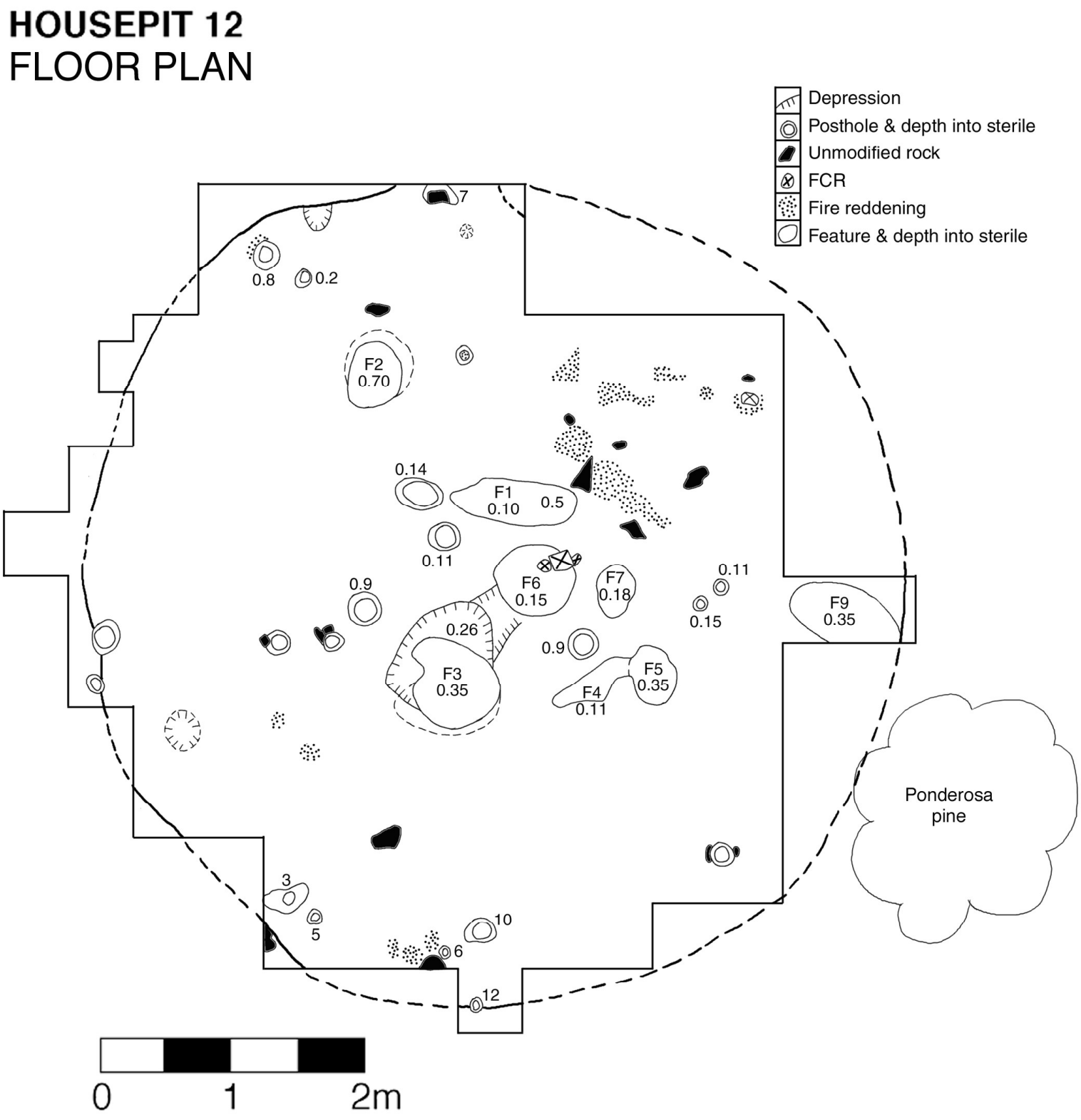


Figure 2. A central section profile of HP 12

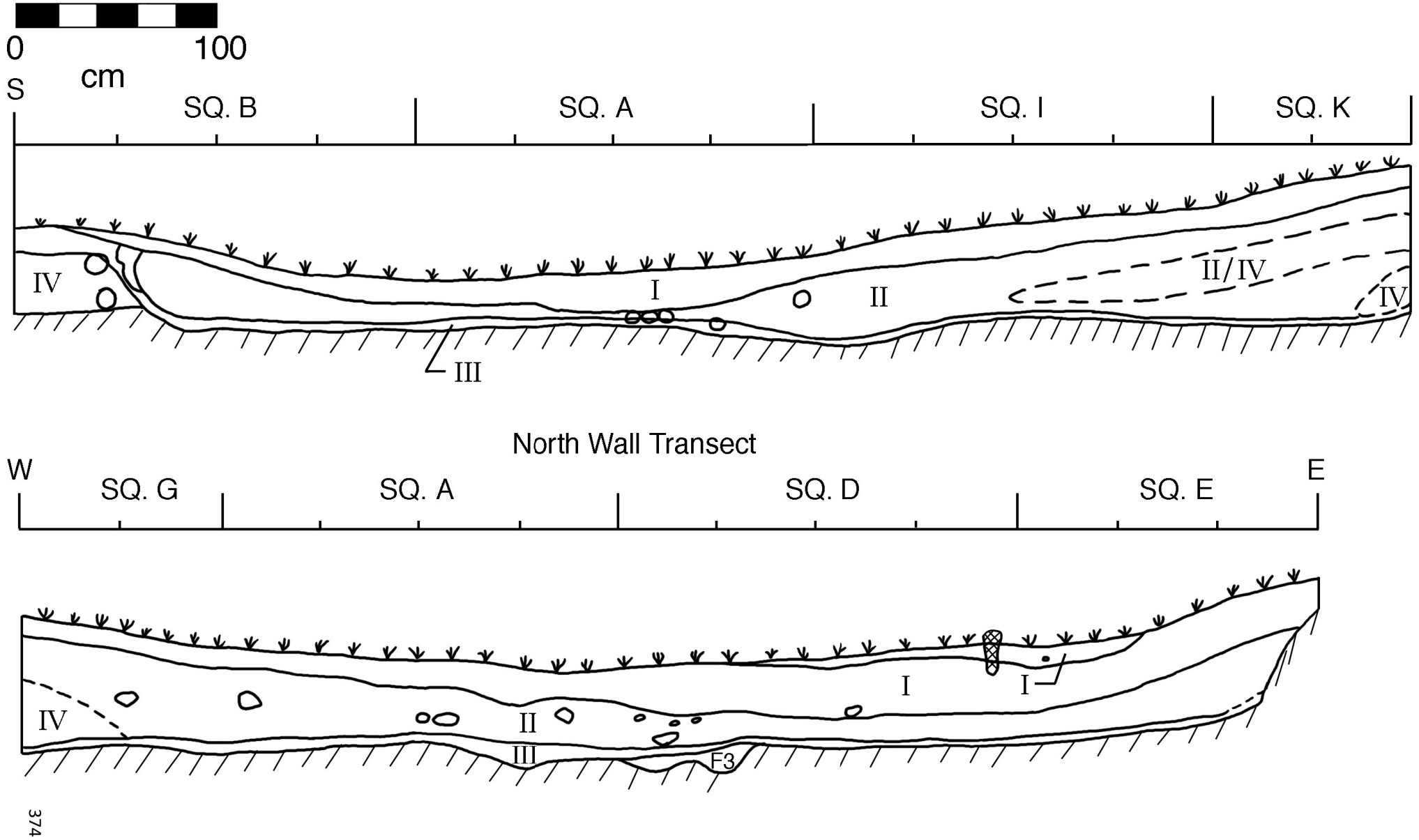
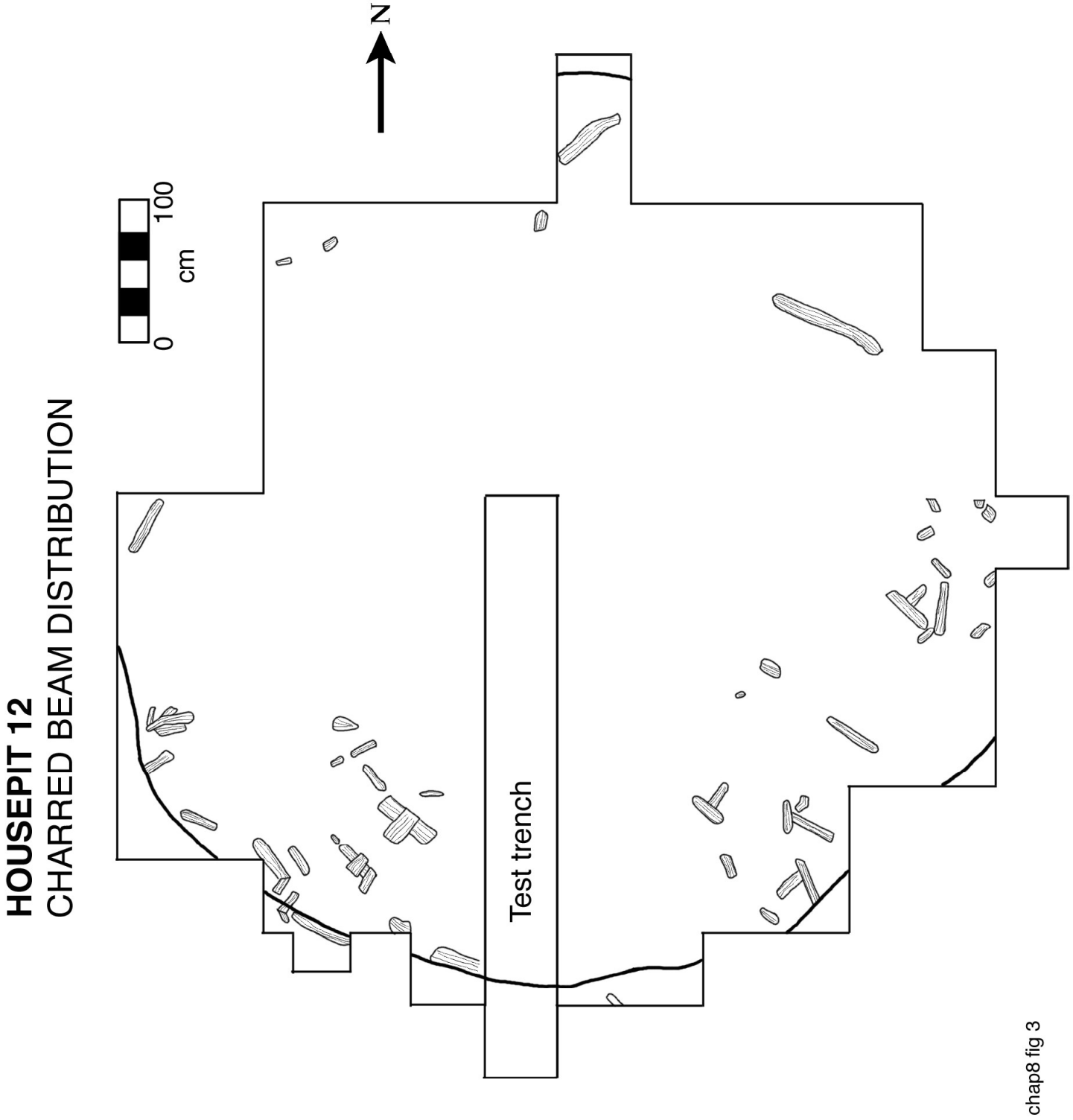


Figure 3. Charred beam distribution in HP 12.



Housepit 90 Excavations

Brian Hayden

Introduction

As part of the program at Keatley Creek to examine the difference between small and large housepits, HP 90 was selected for extensive excavation as an example of a smaller housepit. HP 90 is about 7 m in diameter, and is situated on the northwest periphery of the site core, adjacent to HP 89 (**Figs. 1 and 2--**see also This Volume, Preface, **Fig. 1**). In addition to its small size, HP 90 was selected for excavation because preliminary tests showed that it was a single occupation structure, uncomplicated by crosscutting building events or other occupations. Such single occupations occur most frequently on the site periphery. Moreover, the floor deposits in HP 90 were relatively easy to distinguish, and although no diagnostic artifacts were recovered from the initial test, it was hoped that the occupation would be Kamloops in age given the relatively fresh appearance of artifacts and interior pit slopes and the recovery of what appeared to be a Kamloops point preform from the bottom of the roof deposits. This hope was to be subsequently dismissed as evidence of a Plateau horizon age emerged after most of the housepit had been excavated. We subsequently obtained a radiocarbon date of 1410 ±60 BP from a roof beam laying on the floor (Vol. I, Chap. 2). Given the age of a large roof timber at the time of cutting, the actual occupation age may be closer to 1,300 BP. However, in spite of the fact that the HP 90 occupation was not strictly contemporaneous with the Kamloops floors of the other

excavated housepits, this structure is still of interest in terms of understanding variations in households during the previous Plateau period.

Stratigraphy

The surficial, roof, and floor deposits of HP 90 exhibited considerable variation within each strata. The following discussion relates to the most common characteristics.

Stratum I and III

These strata (**Fig. 1**) are moderately compact, light brown (10 YR 4/2) sandy silt with less than 5% pebbles and cobbles. These deposits become more pebbly upslope as one approaches the rim, and are more finely sorted toward the middle of the structure, indicating that these sediments are largely washed and sorted materials originating from roof deposits possibly enriched with aeolian silts. Stratum I differs from III only by the presence of a root matting. In general, few or no cultural materials are associated with these strata.

Stratum II

This stratum constitutes the floor deposits, which are generally darker (blacker) than overlying roof or surface deposits, especially near the walls of the structure where this stratum becomes soft, black (10 YR 2/1) and charcoal rich with a markedly lower level of pebbles and cobbles (less than 20%), but a high silt content (50–70%) and little sand or clay. Toward the center of the house, the floor becomes more gravelly and more compact, and the color approaches that of the roof deposits (Stratum V). In general, few artifacts

occur on the floor, although some concentrations occur near the walls. In fact, almost all of the unusual artifacts from HP 90 were recovered from near the walls, frequently associated with "dump" deposits. These artifacts included: a sandstone abrader with a bone awl lying directly underneath, fragments of another abrader, a short nephrite adze that had sustained significant damage to the cutting edge, a large piece of a broken sculpted maul, a beaver tooth, an ochred flat stone, two bifaces, two cores, an endscraper, clusters of large flakes laying on top of each other, some large sized retouched flake tools, and a charred broken piece of worked wood. The distribution of these and other significant artifacts are shown in **Fig. 2.**

The fact that many of these items were broken or heavily damaged (such as the adze), as well as the peripheral location of these objects and their association with rich organic dumps, all strongly indicates that these items were placed in storage or provisional discard locations, very probably under bench platforms that extended around the perimeter of the floor inside the structure. This aspect becomes significant when analyzing the nature and meaning of the "dump" deposits, which I shall discuss next. Some of the more useful items recovered from the peripheral "storage" area, such as the nephrite celt and the bone awl, may have been obscured by dirt or refuse and forgotten about at the time of abandonment.

Small dump-like mounds rich in charcoal, beams, charred twigs, but little else occur close to and usually parallel to the walls. Precisely what these accumulations represent is not clear. They may be hearth sweepings thrown underneath sleeping platforms, although the rarity of gray ash and the long segments of charred wood and twigs make this seem doubtful. The only other apparent explanation is that these accumulations rich in particulate

charcoal may have resulted from the burning of the house, either as organic material that was stored near the walls and subsequently burned when the house was burned, or, less probably, as combustible material that was placed against the wall of the structure in order to burn it down.

The body of these "dump" deposits rarely seemed to contain artifactual materials; artifacts only seemed to be found at the base of these deposits within 1-2 cm of the floor. One important exception to this pattern was the occurrence of what appeared to be a Shuswap point blank at the interface of the top of a dump and the bottom of the roof deposits in Square I, Subsquare 6. Given the later point styles associated with this housepit and the short nature of the single occupation that is evident, it seems that this point either was being recycled or was incorporated by chance from a previous Shuswap occupation in the general vicinity of the housepit, or that it is not in fact a Shuswap preform. The recovery of a typical Shuswap point from a till-colored section of the roof (Stratum VB) strongly indicates that HP 90 was excavated at a location where a previous Shuswap occupation had existed and that some of the Shuswap artifacts were removed during the excavation for the housepit and subsequently incorporated in the roof and perhaps other deposits of HP 90.

The pebble and gravel content of the dumps (10–20% with no cobbles except those immediately associated with the floor) was much more similar to the floor deposits than to the roof deposits. Given the lack of orientation of the small wood elements that are so abundant in these deposits (**Fig. 2**), and the very "greasy" black aspect of the bulk of the deposits, it seems likely that these "dump" areas were serving as storage zones for small kindling as well as for other bulky types of "soft," easily combusted organic materials,

such as bundles of sage brush bark for clothes or reeds for mats. If these dumps were, in fact, bundles of stored organics, kindling, and miscellaneous stored items, it indicates two important things. First, it indicates that there was undoubtedly some sort of platform above the storage area, such as the sleeping platforms recorded ethnographically (vol. II, Chap. 2). The presence of a number of large cobbles, evenly spaced and sometimes upright in this same zone (**Fig. 2**) also seems to indicate some sort of support system for a low platform, perhaps no more than 15–25 cm high. The second important indication is that these dumps appear to occur in a more or less continuous fashion around the entire floor periphery, except in the zone immediately in front of the side entrance (**Fig. 2**). This indicates that benches or sleeping platforms would also have been more or less continuous around the entire perimeter of the floor. This contrasts with the patterning implied in the deposits of HP 9, where platforms seem only to occur on one half side of the floor (Vol. II, Chap. 6; Vol. III, Chap. 7).

The very unique kinds of deposits represented by these black, greasy dumps seem to be especially characteristic of smaller housepits such as HP 90 and HP 9. Their occurrence may therefore be related to some economic aspect of small housepit residents (perhaps the heavy reliance on sage brush bark clothing and blankets in poorer houses versus the furs and buckskin clothing and blankets used in larger, richer houses), or to the tighter structural constraints on storage space in the smaller housepits (bundles of organics being stored under platforms in the smaller houses instead of overhead racks in the larger housepits).

Sometimes, extending up from the dumps against the walls, was a steeply sloping deposit that seemed in places almost to be plastered against

the wall (in Sq. E, Ssq.'s 12, and 16, and Sq. I, Ssq. 4). This may represent accumulations on the walls from material filtering through the roof over time, or, more likely, soil that trickled down the wall from points higher up. Or, it may be a form of crude plastering meant to prevent the walls from eroding. Occasional accumulations of this type of material at the base of the walls seems to indicate a trickling down or sloughing off of higher deposits as the most likely origin.

Stratum V

This stratum comprises dirt placed on the roof for insulation. The stratum is a gravelly silty loam that varies in compactness from extremely loose to extremely compact pockets. Compactness increases markedly upon drying the soil, indicating possible accumulation of carbonates over time, and thus a considerable age for roof deposits. Color and artifact content both vary considerably. Color ranges from medium gray (10 YR 5/2) to brown (10 YR 5/3) depending on the origin of material thrown on the roof. In some parts of the roof deposits near the rim, it was possible to distinguish several distinct types of deposits, although in areas closer to the center of the house, such discrimination was generally not possible. At the top of the wall in Square E, Subsquare 12, there was a compact loessic deposit that resembled the fine surface silts that occur in the area today. This appears to represent the original *in situ* surface. Above this silt were much looser, more gravel and pebble rich brown sediments that resembled undisturbed till deposits in every respect except their looseness. No artifacts or charcoal were recovered from these deposits. They appear to be redeposited till, probably dug out

from the center of the housepit when it was originally excavated and used for covering the base of the roof.

Stratum VA

In some places it was possible to subdivide the roof deposits. Near the walls it was usually possible to distinguish slightly darker till-like deposits of the upper roof that sometimes had lenses, pockets, or mottled areas of darker sediments. These deposits were referred to as Stratum VA.

The concentrations of large gravels and pebbles tended to vary from 25–35%, with about 5–15% cobbles; but in both VA and VB, localized areas (e.g., Sq. I, Ssq. 10) reached remarkable levels of 50% pebbles and 30% cobbles, the latter areas being like veritable rock dumps. Whether the dark color was a product of anthropogenic staining from refuse discard and mixing, or whether it derived from surface till that was stained dark brown by natural organic processes is difficult to determine; in the field, we assumed that it was anthropogenic.

Since Stratum VA could be difficult to distinguish from the overlying colluvial deposits of Stratum VI, there may be some question as to whether Stratum VA was, in fact, part of the roof or whether it was colluvium that subsequently washed in after the collapse of the roof. In addition to the dispersed occurrence of artifactual material in Stratum VA that indicates a cultural origin, a clear distinction could be observed between the two deposits in a number of areas, especially near the north wall. In some cases, flakes seemed to lay in clusters on the top of Stratum VA as though it had been a surface (Sq. I, Ssq. 4) and there were small ash dumps at the top of the deposits near the rims (Sq. I, Ssq. 4). It was also observed that tree and

shrub roots often followed the contact between Strata VA and VI (Sq. E, Ssq. 12; Sq. F, Ssq. 4; Sq. H, Ssq.'s 3, 5, and 7), and in a number of cases large rocks, such as those frequently associated with the upper parts of roofs (used for roof beam braces or anchors), were observed at the top of Stratum VA (e.g., Sq. H, Ssq. 5). Moreover, flakes from a distinct type of brown chert occurred at multiple levels within the roof deposits of some squares (e.g., Sq. I, Ssq. 3), indicating not only that these deposits formed a unified depositional unit, but also that some churning of the roof had taken place such as might be expected from at least one re-roofing event.

Stratum VB

We called the relatively light-colored basal part of the roof, Stratum VB. It had a relatively high gravel and pebble and cobble (25-30%) content. Stratum VB was also unusually unconsolidated in most areas and could strongly resemble redeposited till (e.g., Sq. G, Ssq. 12). Artifactual material including charcoal fragments was not abundant, but it was clearly present. In some areas (Sq. F, Ssq.'s 8, 12, and 16; and Sq. H, Ssq. 1), large charred pieces of wood extended into this stratum, probably representing roof beams that only partially collapsed when the structure was burned. This stratum seems to represent an initial roof covering which may have been cycled through at least one re-roofing event given the scattered occurrence of artifacts throughout the deposit and the slight discoloration throughout most of the deposit. There were a number of instances where lenses of black charcoal, gray ash, flakes, cobbles, and even lighter till occurred at the top of

Stratum VB and clearly separated it from the overlying Stratum VA (e.g., Sq. F, Ssq.'s 4, 11, and 12; Sq. H, Ssq.'s 1, and 2; Sq. K, Ssq. 13; and Sq. I, Ssq. 2). These instances are important because they clearly showed that there were two separate depositional events comprising the roof deposits and that the surface of Stratum VB was exposed long enough to accumulate a number of dumped ash or other deposits.

Stratum VI

In other areas, there was only a gradual transition from Stratum VI to VA. Stratum VI was interpreted as colluvium that had been washed into the housepit basin by episodic heavy rains. Housepit 90 is, in fact, situated in the bottom of a shallow ravine with a considerable catchment area upslope (Vol. III, Preface, **Fig. 1**). Stratum VI deposits are thickest and most distinct near the north wall of the housepit, which is the upslope side of the housepit where water would have entered. Stratum VI deposits are notable for their high sand and gravel content (30–50%) and somewhat lower pebble content (20–30%), although sorting such as that which occurs with substantial flows of running water is not evident. The color of Stratum VI is dark brown, and no anthropogenic origin is suspected here; the dark color most likely derives from the sheet wash of brown colored surface soils in the catchment area and their deposition in HP 90. Lithic artifacts were extremely rare in this stratum. A relatively large boulder (greater than 30 cm) was uncovered at the surface of Stratum VI in Square F, Subsquare 4. This most likely was associated with the early historic occupation that occurred in the overlying deposits of Stratum III.

Stratum X

Stratum X is perhaps the most enigmatic of the strata in HP 90. It occurs at the summit of the wall in the north part of the house at a place where the wall dips down more than elsewhere. Stratum X seems to extend out beyond the house onto a paleosurface. It was dark brown, but not as dark as the floor deposits, and it contained moderate numbers of organic, bone, and lithic artifacts. The pebble and large gravel content was relatively high (40%) and the cobble content was also elevated (20%). We initially thought that this might represent a storage alcove extending out the side of the house, since Stratum X seems to be draped over the top of the north wall. However, a more probable explanation is that Stratum X represents soil and refuse gathered from the surrounding area and deposited in the base of the ravine in order to prevent water from flowing against the base of the roof, or to divert flowing water away from the base of the housepit roof. The dip in the wall might then represent the bottom of a very shallow erosion channel at the base of the shallow ravine.

Till Stratum

This stratum is a brown (10 YR 5/3) pebbly/silty loam till which appears sterile in most locations, although some flakes were recovered from more silty, loess-like capping deposits. A Shuswap period point from the till-colored sections of the roof deposits (Stratum V–**Fig. 1**), also indicates that the area around the housepit was used in Shuswap or earlier times.

Cultural Remains

There are four distinct deposits of cultural remains represented in the excavations. Two occur in the surface colluvium, one constitutes the pithouse remains, and one appears to be from a pre-housepit occupation.

The most recent occupation is associated with hearth Feature 1, represented by ash and fire-reddened deposits within the surface colluvium (Stratum III) 7–15 cm below surface. Both basalt flakes and pieces of weathered, thick, flaked bottle glass are present, indicating an early historic occupation. Several pieces of thick buckskin and mammal bone were also associated with this occupation. The localized distribution of these materials (each about 2 m^2), their stratigraphic position, their sparse quantity, and their nature indicate that they are the remains of a temporary encampment by a few people, possibly, for example, a nineteenth century hunting party.

Another similar type of occupation is represented by Hearth Feature 2 (15–20 cm BS) which is probably associated with an unusually rich cluster of fine chert end scrapers, scrapers, and flakes 20–23 cm below surface in Subsquare 2 of Square A. The exotic nature of this unusual assemblage and the calcined bone associated with Hearth Feature 2 seem to indicate that this occupation was a hunting campsite. This occupation appears to be prehistoric since no European artifacts were present and also appears to have taken place considerably after the abandonment of the housepit, given the 10–20 cm of colluvium that accumulated between the collapse of the pithouse and this occupation. Although no time-diagnostic artifacts were associated with this occupation, a Kamloops period occupation seems highly probable.

The housepit occupation itself involved few diagnostic artifacts, or few artifacts or flakes of any kind for that matter. Bone was particularly scarce. Initially, what looked like a Kamloops point preform recovered from the roof bottom led us to suspect a Kamloops occupation. The recovery of an asymmetrical drill stem from Pit Feature 3 reinforced this impression. However, subsequently, a large corner notched Plateau horizon point was recovered from the floor in Square D, and another similar point was recovered from the roof surface of the same square. These occurrences, together with the indurated nature of some of the deposits, now make it seem more likely that the last occupation of the housepit floor took place during the late Plateau period.

The earliest occupation represented in these excavations appears to have been an activity area or an encampment on the original till and loessic land surface. Some flakes and scrapers in the yellow aeolian and till deposits in Squares A and D testify to this occupation, while a Shuswap period point found in till-like lenses of roof deposits in Square B (**Fig. 1**) and a Shuswap preform seem to indicate that at least part of the pre-housepit occupation took place in the Shuswap period. No microblades were recovered or any other artifacts that might indicate an earlier occupation.

Features

The two post-housepit hearth features have already been discussed in the preceding section. No clear hearth feature could be discerned on the housepit floor, although one may have existed in the rock-filled area of Pit Feature 1, or in the southwest corner of Square D where there is a slight concentration of fire cracked rock on the floor. The lack of more definite

evidence for an internal hearth such as fire-reddening of the underlying till, or a charcoal accumulation, is enigmatic and will be discussed further in the section on social and economic interpretations.

Pit Feature 1

Pit Feature 1 is a shallow (10 cm) elongated and irregular rock filled basin that extends beneath the floor in the center portion of the house (**Fig. 2**). It is over 2 m long and 0.6–1.0 m wide. Few of the rocks are fire cracked and they range in size from small pebbles to cobbles, which makes it seem unlikely that this feature was a roasting pit. The matrix around the rocks is generally indistinguishable from floor deposits. The size, shape, and nature of fill make the function of this feature problematical. It may simply have been a pre-existing depression (perhaps at the bottom of the erosion channel) that was filled in to level out the floor, or it may have been created for greater heat retention in the hearth area. It may also have been created as a cobbled surface over damp or wet portions of the floor (especially if seepage along the old drainage channel was a problem) or for drying skins or foods, which gradually filled with floor sediments. I suspect that water seepage was the major problem leading to this feature.

Pit Feature 2

Pit Feature *2* is a small basin shaped pit, 20 cm in diameter and 12 cm deep (**Fig. 2**). The lower boundaries are very diffuse, grading into brownish

stains. This may indicate use as a small indoor latrine, or perhaps it was used as a small boiling pit.

Pit Feature 3

Pit Feature 3 is a possible deep, conical shaped pit, about 60 cm in diameter and 60 cm deep (**Fig. 2**). An asymmetrical drill base was recovered at 82 cm below surface (about 40 cm below floor level), which was initially felt to be most likely from the Kamloops period. The boundaries of this feature were very diffuse, grading into brownish stained areas in the till. It is not clear whether this might be from use as an indoor latrine, or whether some natural staining from water percolation associated with water flows in the bottom of the shallow ravine or other disturbance was responsible. Similar staining was found to underlie apparently sterile till deposits in the northern parts of Squares A and D. Although occasional flakes were present in this material, the stained areas spread out in sheet-like and amorphous forms, indicating some sort of natural formation which has not previously been encountered at the site. I suspect root activity may be one factor involved. The occasional flakes may be redeposited from the pre-housepit occupation.

Pit Feature 4

Pit Feature 4 is a small, slightly bell-shaped pit, 30 cm in diameter and 20 cm deep near the center of the house. It is of a size and nature to have possibly been used for caching personal tools, stone raw materials, or small quantities of food.

Pit Feature 5

Pit feature 5 was a shallow pit in Square C, later determined to be a rodent burrow.

Pit Feature 6

Pit Feature 6 may be related in a similar fashion to the drainage problems of HP 90, although it is not clear at this point to what extent this unique occurrence really constitutes a feature. As described in the discussion of Stratum X, the north wall of HP 90 exhibits a significant dip as though the top part of the till had been cut away to make a shelf or an alcove. However, the surface of this area is irregular, sometimes fire-reddened, exhibits no clear boundaries, and is filled with a dark artifact bearing soil (Stratum X) and notable clusters of cobbles and pebbles. Time did not permit the full exploration of this surface, and the lack of clear boundaries made it seem likely that such exploration would not resolve the issue. At this point, given the location of this surface at the bottom of the shallow ravine along the line of flow of surface water, it seems most likely that this "cut away" area was the original pre-occupation erosion channel. In fact, builders of HP 90 may have chosen this site because runoff water had already partially cut into the till thus, builders would have only had to expand nature's original excavation to the sides in order to create the excavation for their house. If this was the case, they appear to have deposited Stratum X, perhaps in the course of a re-roofing event, in order to fill in the original runoff channel and divert any water away from the structure. Other structures built in similar environments were far less lucky and quickly filled up with fluvial sediments (e.g., HP 119).

Entrances

There was a noticeable dip in the west rim of HP 90. At the time excavations began, it appeared that this might simply be fortuitous or caused by foot traffic through the area after the collapse and abandonment of the structure. However, as we began to expose the western interior wall of the house, it seemed that the wall began to curve toward the depression in the rim. At that point, we suspected the presence of a side entrance. Subsequent excavation confirmed the presence of a side entrance, and architectural modeling (Vol. II, Chap. 15) made it clear why side entrances should be expected in most small housepits. Similar dips in the rims of other small housepits (e.g., HP's 6, 9, and 12) also occur but have never been systematically explored to determine if they too represent side entrances, which now seems likely. Similar dips in the rims of large housepits (e.g., HP's 5, and 7) may also represent more elaborate entrance arrangements. At this point, however, the side entrance of HP 90 is the only confirmed side entrance in any of the housepits at Keatley Creek.

The side entrance of HP 90 is surprisingly narrow (**Fig. 2**), although this might be expected in order to conserve heat. At the bottom of the entrance passage, a rock fill had been deposited, probably either because the passage had become worn down through use (indicating a relatively long use of the structure), or perhaps as a preventive measure to avoid the wearing down of the passage or the tracking in of mud, or possibly because the passage had been excavated too deeply to begin with. Future excavation of side entrances should indicate whether such rock fills were regular features of side entrance construction in small housepits. The passage appears to have been quickly filled in by a single or continuous depositional event shortly

after the abandonment of the structure. This may simply be roofing soil that was pulled down around the rim or which slid down to the rims as the roof burned.

Beams, Post-holes, and Abandonment

As in some other housepits such as HP 7, there appear to be a number of small post-holes, ranging from 3–8 cm deep that were used to put up internal divisions, racks, or benches in HP 90. These tend to occur within 2 m of the house wall and sometimes appear to be paired. However, no further patterning is apparent, particularly since many post-holes are only tentatively identified as such (dotted double circles). A number of relatively large, flat cobbles also occur near the southern and northern walls (**Fig. 2**). Some thicker rocks were placed upright; these stones lie directly on the till and appear to have been purposefully put in place. This, and their more or less regular spacing of just over a meter apart, may indicate use as pole supports. Surprisingly, there is only one post-hole that seems as though it may have held a central supporting post, although even this is far from certain. Thus, as indicated by the architectural analysis in Volume II, Chapter 15, post-holes may not have been used for central roof supports in smaller housepits, or perhaps fewer were used than the four ethnographically reported central posts.

As with most other housepits at the site, HP 90 was burned after abandonment. The sparse remains on the floor, the charcoal accumulations against the walls, the lack of charred *in situ* posts or human remains, all indicate that the abandonment and burning were intentional and not due to accident or raiding. Usable posts were undoubtedly salvaged as well as

other useful wood. Unfortunately, burning was relatively complete and left too few charred beams from the roof or internal structures to provide information about the construction details. As also occurs in other housepits, localized fire-reddening of the housepit walls was frequently found, indicating a particularly intense burning in these areas. In fact, burning of the structures most probably began along the walls, where the roof would have been closest to the floor and easiest to ignite. Brush, and old household furnishings may have been piled against the walls for the purpose of igniting the roof.

Internal Use of Space

Aside from the large rock-filled basins (Pit Feature 1), and possible indoor latrines (Pit Features 2 and 3), the only indications of the internal use of space involves postulated sleeping platforms along the house walls with their storage and provisional discard spaces under them. These may have been supported by upright poles lashed to roof supports at the top and placed in small post-holes on the floor. Alternatively, they may have been supported by flat or upright rock slabs, or they may have simply been poles placed horizontally on log segments as illustrated by Teit (1906:214). Whatever the case, the floor deposits within 1 m of the walls tend to be distinctively thicker, softer, and darker often with "dump" morphologies, compared to the lighter, more compact, and more gravelly deposits in the center of the house. This indicates different depositional environments, consistent with the notion of protected areas underneath a wood platform or bench along the walls. As previously discussed, the areas underneath such sleeping platforms are typical locations where infrequently used,

provisionally discarded items, or items of little worth are stored and left upon intentional abandonment of households. Thus, the occurrence of a number of broken or inadvertently covered stone and bone tools in this area is also consistent with the notion of wooden platforms existing along the walls.

Length of Occupation

In order to assess the relative social and economic standing of the residents of HP 90 in the Keatley Creek community it is necessary to form some idea of the length of time that this housepit was occupied, since artifact accumulation is both a function of length of occupation and socioeconomic position (e.g., Hayden and Cannon 1984). There are several indicators of length of occupation, including: artifact densities; the density of pits and post-holes, and overlapping occurrences of these; staining and homogeneity of roof material; occurrence of artifacts throughout roof deposits indicating recycling of roof deposits and thus re-roofing; depth or development of floor deposits, and finally; the nature and size of the structure itself.

From the outset, one would not expect a family to undertake the considerable labor required to excavate into hard till surfaces, to fell and transport the trees and brush necessary to build a roof, and to pile dirt on roofing, all for a single or several winters' use. Housepits were major constructions meant to last for a substantial number of years. Poorer or transient families probably erected simpler, smaller mat lodges for a single or several seasons' residence, just as the pre-housepit residents of Keatley

Creek must have done. Thus, the nature of the structure alone, leads one to expect an occupation on the order of at least a number of years.

Other indicators in HP 90 are consistent with this notion. Lenses and major divisions within the roof deposits have maintained considerable coherency and definition (**Fig. 1**), indicating that the roof collapse did not result in extensive mixing or homogenization of materials in the roof deposits. Thus, while the thick lenses of till that were thrown onto the base of the roof indicate little recycling (therefore re-roofing) history for some of the roof deposits, the homogenized and organically stained nature of the vast majority of the roof deposits indicate that HP 90 underwent a number of re-roofing episodes. Subjectively, given the nature of this mixing, I would suspect that one to three re-roofing episodes might be involved. The occurrence of sporadic artifacts throughout the roof deposits, conforms to the notion of recycled, homogenized roof deposits especially where flakes from distinctive lithic sources appear in several different levels of roof (see Stratum V). The sparse number of internal pits, post-holes, and the lack of intersecting features also tend to support the idea of a comparatively short occupation span for this housepit. Given all these indicators, and assuming roofs lasted about 10–20 years, I feel that it is not unreasonable to think in terms of an occupation spanning the lifetime of one family or even an extended family, i.e., about 10–30 or more years. Unfortunately, the mixing of some pre-existing Shuswap remains in the roof deposits may have led to inflated impressions of the number of re-roofing events involved, the degree of mixing in the roof deposits, and the total length of occupation of the structure.

Socioeconomic Standing

One of the most striking results from the Coxoh Ethnoarchaeology Project that I undertook in traditional Maya villages, was the extreme paucity of material items in the poorest households (Hayden and Cannon 1984). I initially suspected that small housepits at Keatley Creek would be the poorest economically and artifactually. While the occupation of HP 90 appears to occur at an earlier period than the Kamloops floor deposits that have so far been extensively excavated in other housepits, the sparse lithic and even sparser faunal remains from the excavation are consistent with the idea that the occupants were relatively poor, given an occupation on the order of 10–30 years. The very few fish bones recovered from the housepit, as well as the lack of salmon storage pits, seem to indicate limited access to salmon, while the equally limited amount of mammal bone suggests an equally limited access to the more highly prized hunted foods. Despite the occurrence of a badly flawed and damaged nephrite adze and a sculpted maul fragment (which may have been scavenged or obtained at low cost), and a single obsidian flake, the overall impression from this household is one of poverty, even taking into consideration the limited occupation span. A small piece of mica recovered from the roof may be associated with the house occupation or the previous Shuswap occupation. In my Mayan ethno-archaeological investigations, it was relatively common to find broken or badly damaged prestige items in relatively poor households because these items had been scavenged by household children or obtained as items of little worth from wealthier households.

Faunal Remains

Housepit 90 is particularly notable on account of its extreme paucity of faunal remains, except for those associated with its post-housepit occupations. In the surface strata (I and III), large mammal bones, probably all deer, are associated with both hearths occurring in these strata. Hearth Feature 1 (containing historic artifacts) contained 79 burned mammal bones. Hearth Feature 2 (a very late prehistoric, post-housepit occupation) contained 36 burned mammal bones. Other bones recovered from Stratum III near these hearths included five deer, two artiodactyl, four large mammal, and three unidentifiable mammal bones.

The roof deposits of HP 90 (Stratum V) in their entirety, only contained two pieces of antler (one elk and one artiodactyl), 14 unidentifiable mammal bones, and three salmon vertebrae.

Even fewer bones were recovered from the floor deposits (Stratum II). These consisted of seven mammal bones, two salmon vertebrae, and three bone artifacts consisting of two bone awls and a "knife."

A surprising number of bones were recovered from the fill matrix of Pit Feature 1, which otherwise only contained rocks filling a shallow depression. A deer ulna and six unidentified mammal bones were recovered from this feature.

Figures

Figure 1: Stratigraphic cross sections of HP 90.

Figure 2: Floor plan of HP 90.

References

Hayden, Brian, and Aubrey Cannon

1984 The Structure of Material Systems: Ethnoarchaeology in the Maya Highlands. *Society for American Archaeology, SAA Papers* No. 3, Washington D.C.

Teit, James, A.

1906 The Lillooet Indians. *American Museum of Natural History Memoirs* 2(5).

Figure 1. Stratigraphic cross sections of HP 90.

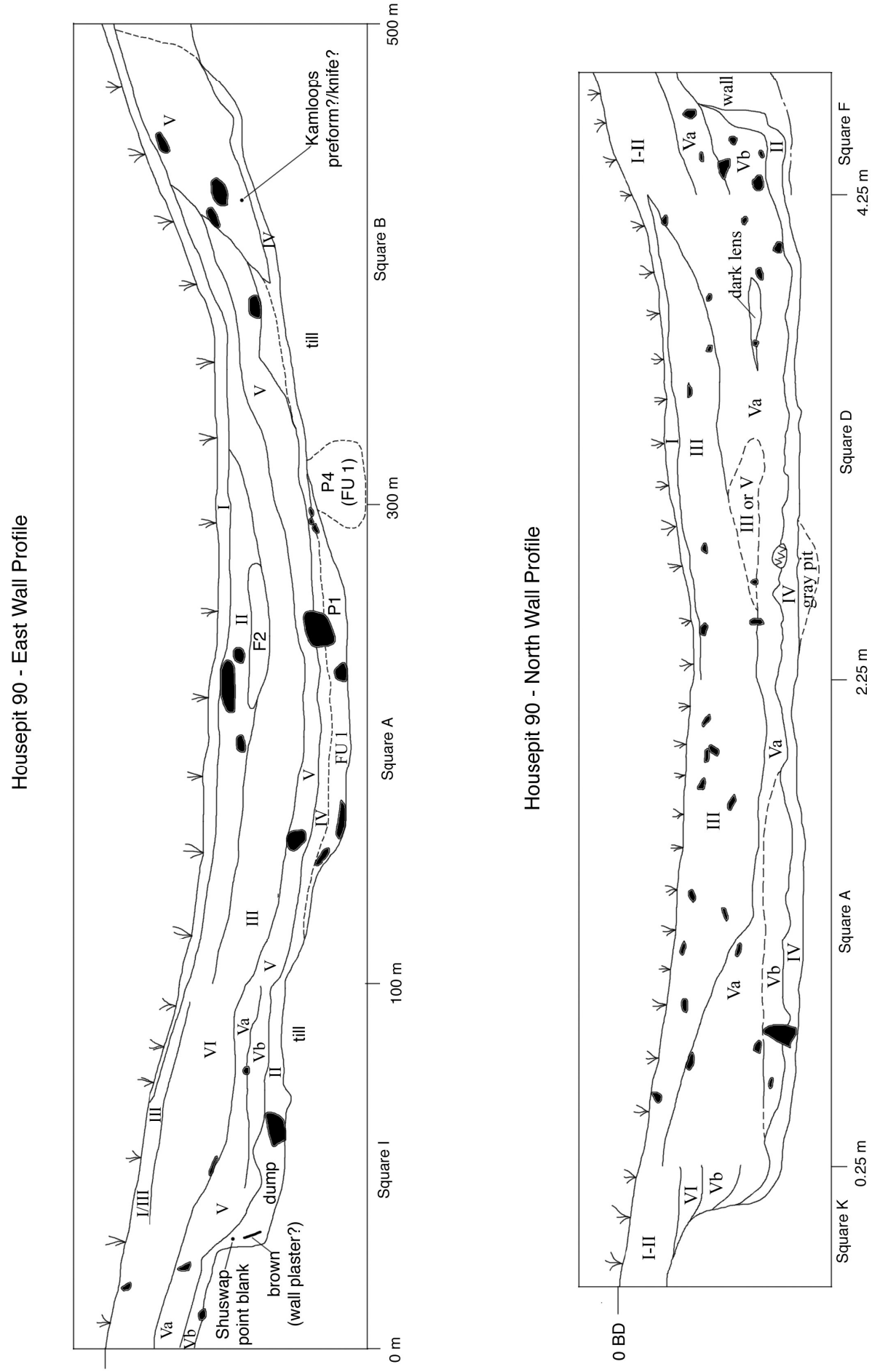
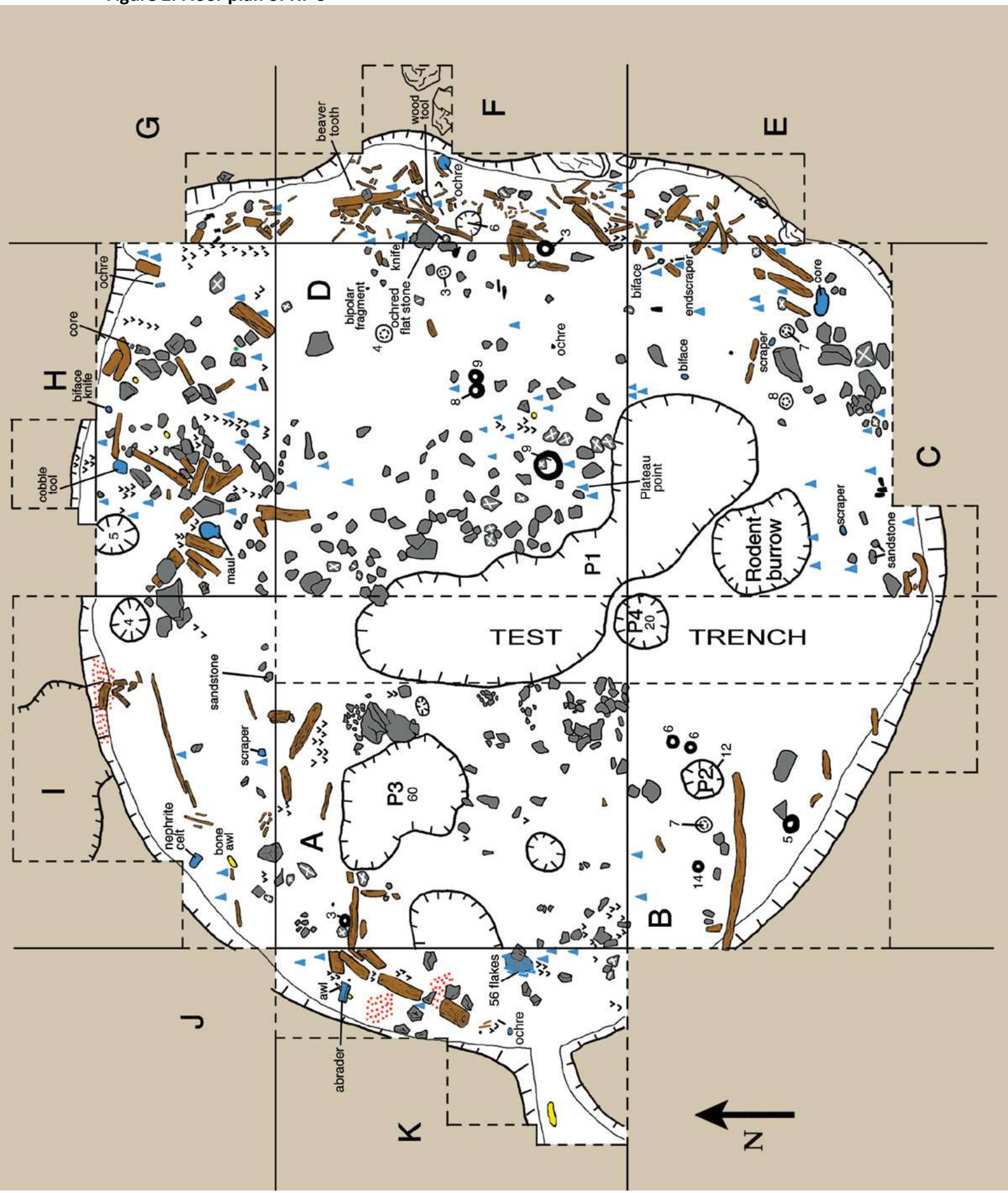


Figure 2. Floor plan of HP 9



Results of the Small Housepit Test Excavation Program

Mike K. Rousseau and Martin Handly

During the 1989 field season at the Keatley Creek site, a total of seven selected small cultural depressions, some presumed to be small house depressions, were examined during a brief testing program. The purpose of this study was to:

(1) determine their function;

(2) reveal their stratigraphic structure and cultural content;

(3) attempt to provide relative age(s) for their occupational episode(s), and;

(4) assess their suitability for further inquiry with respect to testing the hypothesis that small houses were inhabited by families less economically well-off than groups living in larger houses at the site.

The seven depressions were selected on the basis of two important considerations. First, they had to have diameters between 5.0 and 8.0 m. Second, small depressions on the periphery of the village were preferred, as it was reasoned that they would be less structurally complex than those in the interior of the site because they would likely have been occupied less intensively than those within the village core area. The housepits included in the study are HP's 12, 90, 101, 107, 108, 110, and 111 (Vol. III, Preface, **Fig. 1**).

Standard excavation techniques were employed with trowels, dustpans, pails, etc., although square nosed shovels were occasionally used to remove deposits containing very little or no cultural information (e.g., post-abandonment fluvial silt infilling). All matrices were passed through a

1/4 inch (6 mm) mesh screen. Where possible, each stratigraphic layer was removed separately. The positioning of the observed strata and certain temporally diagnostic or unique artifacts are presented on profile drawings accompanying the reports. All stratigraphic depths and artifact proveniences were taken using either below ground surface (BS) or below temporary datum (BTD) measurements. Specific details concerning excavation methodology, results, and interpretations for each housepit depression are provided in the chapter sections to come.

Other, larger housepits were tested in other years and are also described in the subchapters that follow.

Summary of Trench Excavations—Housepit 1

Diana Alexander

Housepit Location and Description

Housepit 1 is located at the western periphery of the Keatley Creek site (EeRl-7) at the base of a slope leading to a higher terrace (Vol. III, Preface, **Fig. 1**). It is a large bowl-shaped depression with a well-defined rim and moderately steep sides. The pit diameter between the northern and southern edges of the rim crest is 22 m. The depth of the depression, measuring from the southern rim crest to the lowest point on the surface, is 1.7 m. A 50 cm wide trench (oriented to magnetic north) was excavated from the center of the housepit to approximately 1 m outside the southern rim crest (**Fig. 1**).

The diagnostic projectile points and the stratigraphic profile indicate that the housepit was occupied during at least two cultural horizons: (1) Kamloops (ca. 1,200–200 BP) and (2) Shuswap (ca. 4,000–2,400 BP). Only the floor of the Kamloops horizon occupation remains largely intact. Earlier occupational floors appear intact at the southern edge of the housepit where one or more dark soil layers underlie the Kamloops occupation. The remainder of the earlier floors and associated roof fill have been removed by subsequent cleaning of the housepit prior to the Kamloops occupation. The intact floor(s) of the earlier occupation(s) have survived only because the housepit size was somewhat smaller during the Kamloops occupation and the house depression was not excavated back to its original walls. The floor and roof fill from the earlier occupations, which were removed during the

Kamloops occupation, were displaced to the rim of the house producing a complex stratigraphy at the rim.

Test Trench Excavation Results

Stratum I

Stratum I (surface) results from aeolian and/or alluvial deposition in the housepit after the final abandonment of the housepit and collapse of the pithouse roof from the final Kamloops occupation. This black (10 YR 2/1) sandy silt is characterized by a high organic content with little gravel and cobbles and only a few scattered boulders on the surface. A well developed litter mat overlays this soil, especially at the center of the housepit where a small juniper tree is growing. Few bones, lithics, or fire cracked rocks are found in this stratum. This stratum is absent in Square E, where it was removed by pot hunters, and at the top of the rim where erosion dominates natural depositional events.

Stratum II

Stratum II (roof fill) represents the soil originally deposited on the roof of the pithouse during the final occupation and which collapsed into the pit following abandonment. This sandy silt has a high concentration of small gravel and a high organic content, although the organics seem less than in Stratum I. In general, this soil is a very dark brown (10 YR 2/2) but there is some color variation across the housepit and with depth. The upper part of the stratum is generally darker probably due to *in situ* development of an Ah soil horizon. The south end of the stratum (near the rim) is also darker (10 YR 2/1) possibly due to a higher organic content. Small lighter-colored

(2.5 Y 4/2) lenses also appear sporadically throughout the roof fill deposits. The roof fill contains little bone, moderate quantities of lithics, and high quantities of fire cracked rock and charcoal. The charcoal appears, in part, to represent burnt roof beams and supports. Three black basalt Kamloops points are possibly derived from this stratum, although it seems more likely that they are associated with the underlying floor. These consisted of a side notched, concave base point from Square A and two stemmed points from Square B that were recovered form a 10 cm. arbitrary level which contained both roof fill (Stratum II, and floor deposits (Strata III and IV). Therefore, it is unclear if the points are from the roof fill or floor. Stratum II is absent in part of Square E where it was removed by pot hunters. A correlation between Stratum II and the soil lenses present in Stratum V of the rim is not possible at this time due to disturbance by pot hunters.

Stratum III

The significance of Stratum III is problematical in that its origin is not clear. It is discontinuous along the east wall of the trench and is only represented by a few small lenses along the west wall. However, subsequent excavation strongly indicates that it is part of the Kamloops floor since Stratum IV (a definite floor deposit) in Square A appears continuous with Stratum III in Square B where not disturbed by a pit deposit (Stratum XI). Stratum III varies in color and texture from "reddish" (10 YR 3/6) silt with little gravel to dark brown (10 YR 3/2) sandy silt with small gravel. It may represent floor deposits fire-reddened by roof beams burning on the floor when the roof collapsed. This stratum contains calcined bone, some lithics, and fire cracked rock.

Stratum IV

Stratum IV (floor) represents the most widespread and definite occupational floor of this housepit. It was deposited during the Kamloops cultural horizon. Soil in this stratum probably originated from a number of sources including:

(1) soil falling from the roof through the beams;

(2) soil carried in on people's feet and clothing;

(3) ash and charcoal from hearths; and

(4) aeolian silts.

It is a black (7.5 YR 2/0) organic sandy silt with little of the small gravel present in the roof fill (Stratum II). Although little bone is present in this stratum, more is present here than in the roof fill. The quantity of lithics, charcoal, and fire cracked rock varies throughout the trench but all three are present in each square. The three Kamloops points mentioned in the discussion of the roof fill (Stratum II) are most likely from this floor. The floor was easy to locate in Squares A, B, and C at the center of the housepit. However, two large pit features in Square D make it difficult to trace the floor in this square. There are two clear floor levels at the south end of Square D, the upper of which may prove to be continuous with the floor in Squares A, B, and C. This upper floor in Square D was truncated by pot hunters further south. The lower floor (Stratum VI) appears to be a floor remnant from an earlier occupation. It is a black (7.5 YR 2/0) sandy silt with small gravel found just above sterile deposits in Squares D and E. It represents a pre-Kamloops floor, probably Shuswap given the discovery of a

Shuswap point in the rim spoil (Stratum XIII). This level contains little or no bone, but relatively high quantities of lithics and fire cracked rock.

Stratum IV and VI

Strata IV and VI (floors) are separated by Stratum V which appears to be rim spoil (see Stratum XIII) which was used as roof fill or slumped into the housepit after the initial occupation and prior to the Kamloops occupation. It is a dark brown (10 YR 3/2) sandy silt mottled with irregular black lenses. This stratum has little bone and moderate quantities of fire cracked rock, lithics, and charcoal. It is only present in Squares D and E where it was partially removed by pot hunters.

Stratum VII and VIII

Strata VII and VIII are both comprised of firm, olive brown (2.5 Y 4/4) sandy silt with a lot of gravel and cobbles. Both strata are sterile, but Stratum VII differs from Stratum VIII in that it has less silt, more gravel, dries more quickly, and is slightly less consolidated. Since Stratum VII overlies a pit feature in Squares B and C, it is assumed that the deposit comprising Strata VII is at least partially culturally modified. It may represent: (1) spoil from the excavation of a pit elsewhere in the house, or (2) a natural *in situ* deposit which was spread or leveled-off to cover an early pit prior to reoccupation of the housepit. No artifacts can be clearly assigned to either strata. Stratum VIII represents the natural sterile sediments which underlie the site.

Stratum IX, X, and XI

Strata IX and X are deposits which have accumulated in Feature B-1, a large rock-lined pit. Stratum X is an olive brown sandy silt with gravel and

cobbles, virtually identical to the surrounding sterile matrix. It contained many articulated fish bone and some lithics. Stratum IX represents a later excavation and filling of a second pit within the original pit fill. This stratum is black with less gravel and cobbles and contains much bone, lithics, and fire cracked rock. Both strata are covered by the Kamloops floor (Stratum IV) indicating that they may be associated with an earlier, possibly Shuswap occupation. A second large pit feature, intersected in the east wall profile, contains a side-notched Kamloops point near the bottom. This second pit is therefore assumed to be associated with the later Kamloops occupation. Stratum XI is a black sandy silt with small gravel. It represents a small pit excavated through the Kamloops roof fill and floor deposits. It is assumed to represent a brief, post-occupational use of the housepit depression.

Stratum XII and XIII

Stratum XIII is classified as rim spoil and is only present in the south end of the trench. It appears to represent soil which was intentionally dumped on the house rim during the excavation and cleaning of the pithouse prior to each occupation, as well as soil from the roof which slumped onto the rim after the house was abandoned. This complex of soils is distinctive of the rim and is difficult to relate to the deposits in the rest of the trench due, in large part, to the pot hunters disturbance on Squares D and E. A parallel-stemmed point with slight shoulder was found in Level 4 of Square F, indicating the presence of a Shuswap occupation in the housepit.

Stratum XII is an unusual layer contained within the rim spoil (Stratum XIII). It is a thick layer of organic material which has the appearance of bark and may represent an old roof surface. It is continuous throughout Square F.

Excavation Summary and Conclusions

Housepit 1 appears to have been initially constructed and occupied during the Shuswap horizon (4,000–2,400 BP). This conclusion is based on the presence of an early floor under the later Kamloops occupation and the presence of a Shuswap point in the rim spoil. Remnants of this early floor can be seen at the outer edge of the house depression. The remainder of this Shuswap floor and the associated roof fill were removed and deposited on the rim when the housepit was cleaned down to sterile prior to the final Kamloops occupation. The slightly smaller diameter of the Kamloops house has allowed for the preservation of some of the earlier floor at the outer edge of the housepit depression. There are no diagnostic points which would indicate a Plateau horizon occupation (2,400–1,200 BP), although the west wall profile suggests the possibility of a third floor between the two aforementioned floors.

Following the occupation of the Kamloops pithouse and the deposition of the floor, the pithouse was abandoned and the roof collapsed. The soil from the roof was later covered by aeolian and/or alluvial deposits.

The Kamloops house floor is clearly seen in both profile and in excavation for the central portion of the housepit i.e., Squares A, B, and C. It is darker and contains less small gravel than the roof fill above it but is no more compact. However, two large pit features in Square D, including a pit from the Kamloops occupation, make it difficult to isolate the floor in this part of the trench. Two floors are visible in the southern half of Square D which have a similar color and texture to the Kamloops occupation floor. In fact the higher floor in Square D appears to be a continuation of the

Kamloops floor. Some form of clearly distinguishable floor deposits were present in all parts of the house that were tested.

Figures

Figure 1: Housepit 1 east wall profile and floor plan.

Figure 1: Stratum Legend for Housepit 1

I Surface = Black organic silt; Origin: organic litter, aeolian, and aluvial deposits; Few artifacts, bone, or fire-cracked rock.

II Kamloops roof fill = Black sandy silt with pea gravel; Origin: collapse of roof for last occupation; A lot of fire-cracked rock, little bone, moderate lithics.

III Upper portion of Kamloops floor (?) = Sandy silt with pea gravel, considerable variation in color from dark grayish brown to strong brown, fire reddening (primarily in Sq. B) associated with less gravel; Origin: possibly upper part of floor with less organics to darken soil, red lenses could be the result of burnt roof beams, less fire-cracked rock, little bone, numerous lithics.

IV Kamloops floor = Black sandy silt with pea gravel, darker than overlying stratum; Origin: thin deposition of charcoal, organics, and sediments falling from roof; A lot of fire-cracked rock in some places, some bone and lithics.

V Rim spoil (?) = Dark brown sandy silt mottled with irregular black lenses; Origin: possible rim spoil which slumped into housepit following Shuswap occupation, which was not removed prior to Kamloops occupation.

VI Shuswap floor (?) = Black sandy silt; Origin: same as IV, moderate quantities of lithics and fire-cracked rock.

VII Subfloor matrix = Olive brown sandy silt with high gravel content; Origin: culturally modified sterile contents(?).

VIII Sterile = Olive brown sandy silt with a lot of gravel and cobbles, darker with higher silt content than VII.

IX Shuswap (?) pit = Black sandy silt; Origin: pit from Shuswap (?) occupation filled in with floor and roof fill (?); A lot of bone, lithics, and fire-cracked rock.

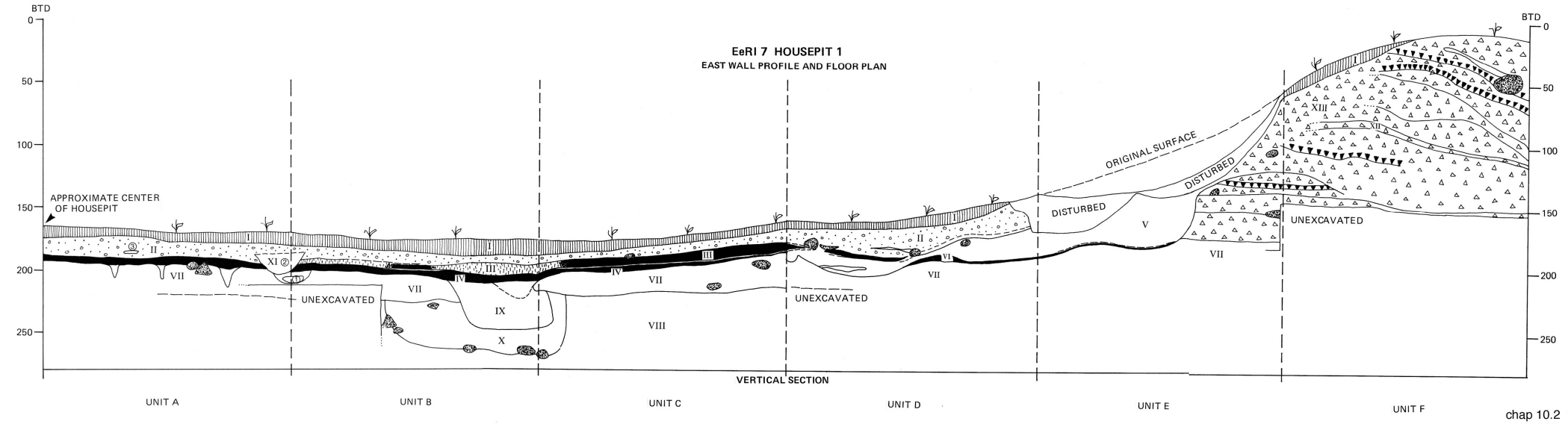
X Shuswap (?) pit = Dark olive brown sandy silt with gravel and cobbles, similar in color and texture to sterile, pit is rock lined; Origin: filled in prior to excavation and use or IX.

XI Post-Kamloops pit = Black sandy silt with pea gravel; Origin: pit excavated into Kamloops floor and roof fill after Kamloops occupation.

XII Organic layer = Possibly bark.

XIII Rim spoil = A complex of soil layers built up on the rim of the housepit resulting from house re-excavation and cleaning, and collapse of roof onto rim.

Figure 1. Housepit 1 east wall profile and floor plan.



Housepit 1 Rim

W. Karl Hutchings

During the 1987 investigations the rim deposits of HP 1 (Vol. III, Preface, **Fig. 1**) were excavated as part of the project's research aimed at the analysis of housepit rim formation and to obtain a larger and better controlled sample of exotic lithics associated with the full occupation range of this housepit.

Excavation was limited to two units of 0.5 x 2.0 m. The units were set into the south rim of the housepit as a continuation of the cross-section trench begun during the 1986 excavations. Vertically, the units reached approximately 1.40 m BS at the deepest point, under the apex of the housepit rim (**Fig. 1**).

The deposition sequence for HP 1 is similar to that observed during the earlier excavation of HP's 5 and 7. A thin layer of dark gray/brown sand and relatively fine gravels overlie alternating deposits of hard (compact), yellow, till-like material containing angular gravels, and significantly looser layers of dark brown soil rich in organics. Unlike HP 7 and HP 5 however, the lower deposits increase in gravel content and take on a reddish coloration possibly derived from the underlying sterile deposit, which is red/brown in color and comprised of mixed sands and angular gravels.

The upper, gravel layer (XIIIa) appears to be derived from pithouse roof cover. The deposit is shallow near the apex of the housepit rim becoming significantly deeper towards the outer edge. On the inside of the rim (towards the interior of the housepit), the roof deposit becomes less distinct as it mixes with other materials apparently associated with the collapse of the structure.

The roof collapse deposits dramatically mark the truncation of the alternating strata described above. The collapsed material appears to have filled a portion off the interior of the pithouse that was excavated by the aboriginal builders into the rim deposits. This area may have functioned as a shelf set into the gravel walls of the housepit.

The alternating compact and loose strata suggest several things about the construction and re-construction of the housepit. The occupation floor of the housepit was excavated into the sterile till which was then redeposited as rim material. The number of compact till-like layers in the rim deposits may relate directly to re-building episodes. Since these materials would be deposited on a slope whose angle is theoretically related to the angle of the housepit roof (**Fig. 2**; compare with **Fig. 1**), they may also be used to derive the roof angle and height of the structure. In addition, the truncation of these strata indicate that the final housepit was larger than that of the previous occupation (or minimally, that the structure was shifted slightly to the south).

Few diagnostic artifacts were recovered from the rim excavations. Two corner-notched Plateau projectile points as well as several generalized biface fragments were recovered.

Several artifacts were recovered from a cache buried in the outer (southern) edge of the rim deposits. Again, a truncation of the alternating compact and loose strata indicate aboriginal excavation of the rim deposits. The excavated area contained the artifact cache and was filled with gravels continuous with the roof cover deposits, suggesting that it is related to the final occupation of HP 1 (**Fig. 1**).

The artifacts from this cache include a poorly preserved deer or elk antler billet, approximately 25 cm in length, with a beveled base section. This artifact may have served additionally as a heavy pestle as suggested by an associated artifact, although no pigments were detected on the piece. The antler section overlay one corner of a fine-grained siltstone pigment palette whose upper (smooth ground) surface exhibits dark red (ochre) staining. The palette measures approximately 17 cm x 14 cm (Chapter 1, Fig. 40).

The other artifacts were discovered resting on the palette, the first is believed to be a deer ulna approximately 10 cm in length. This piece was stained with reddish pigment on the wide (proximal) articulation, suggesting use as a pestle. This piece may have served additionally (or alternately) as a pressure flaker. The last artifact found resting on the pigment palette was a 12 cm long, sandstone shaft smoother. A narrow (approximately 1.5 cm wide, 0.5 cm deep) groove runs the length of the flat (working) surface; the opposite side is convex and fits comfortably in the palm (Chapter 1, Fig 41).

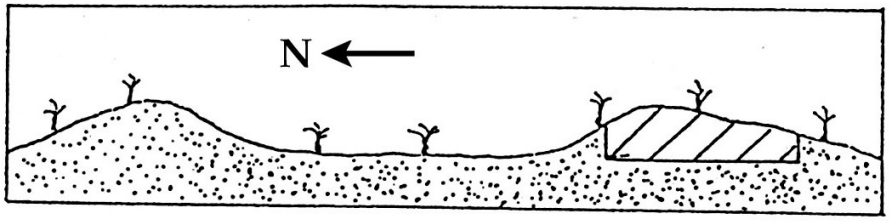
In addition, several small fragments of birch bark were found covering the cache, suggesting that the cache may have been wrapped with this material. Three fragments of muscovite and an unworked deer tooth were also found near the cache. The exact provenience of the tooth is unknown.

Figures

Figure 1: Profile of HP 1 rim deposits, showing orientation of strata, and location of artifact cache.

Figure 2: General orientation of HP 1 rim deposits.

Figure 1. Profile of HP 1 rim deposits, showing orientation of strata, and location of artifact cache.



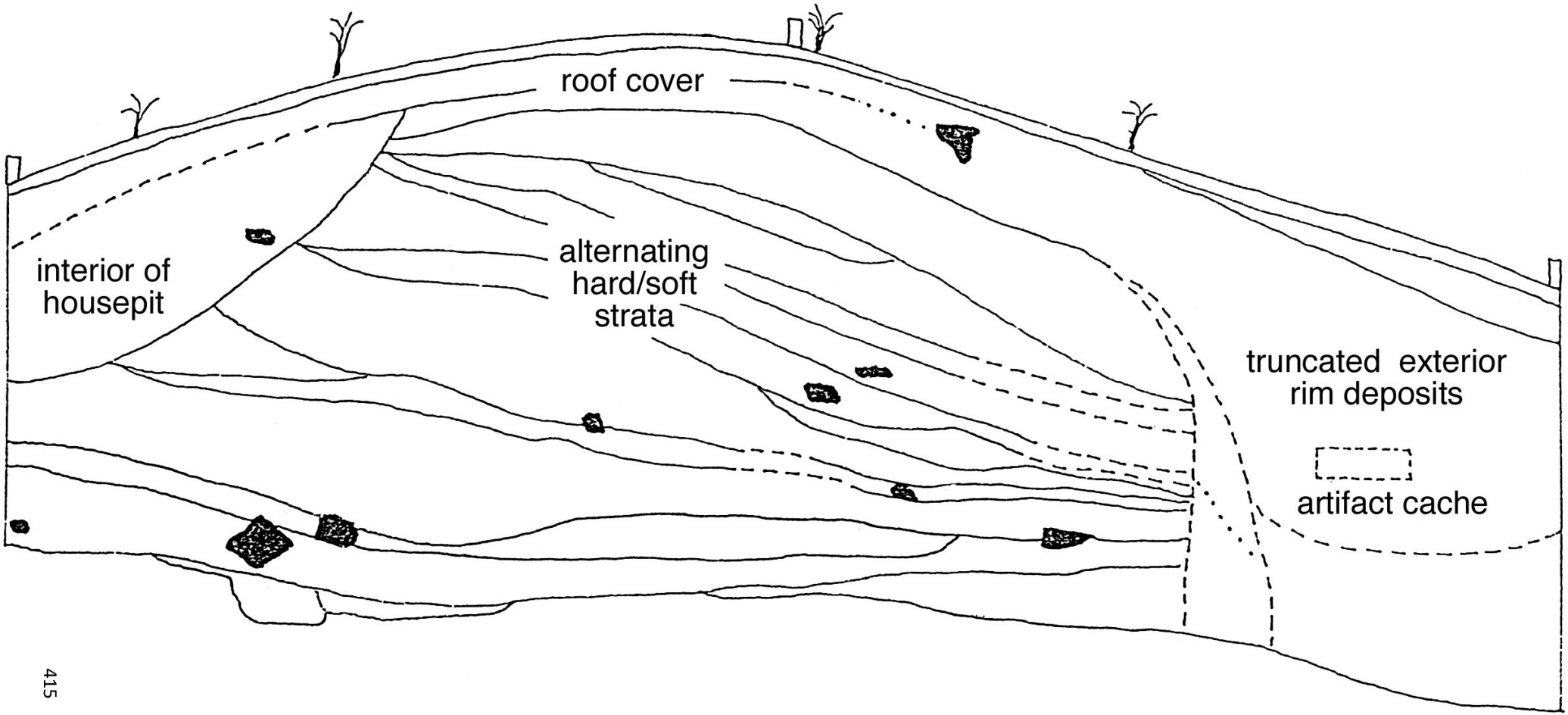
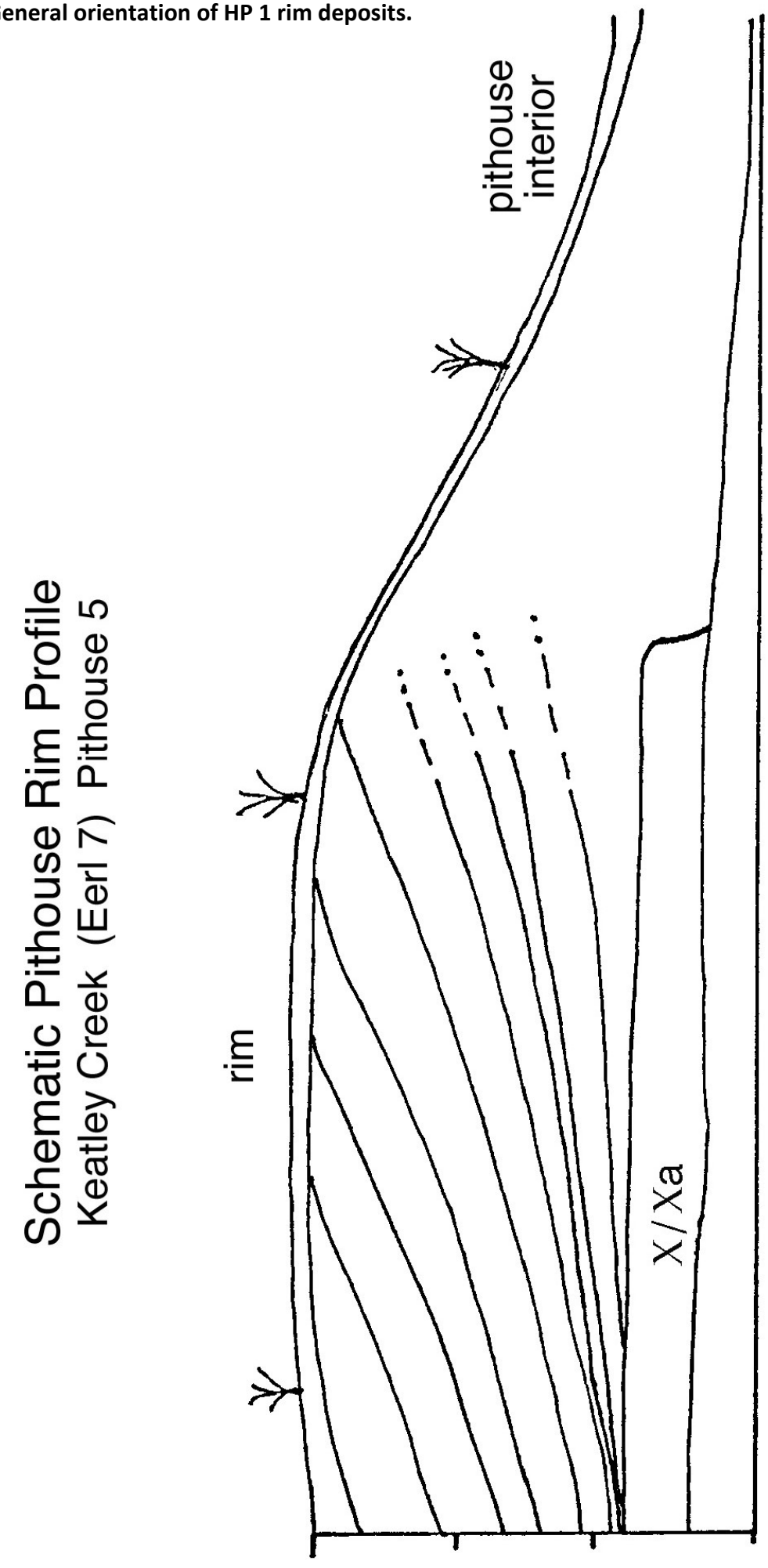


Figure 2. General orientation of HP 1 rim deposits.



Test Trench Excavation Summary, Housepit 2

Mike Rousseau

Housepit Location and Description

Housepit 2 is located in the west-central portion of the site (Vol. III, Preface, **Fig.1**). It is large, circular in outline, bowl-shaped, and measures 19.5 m in diameter by 1.5 m deep. Surficially, its floor is slightly concave, the sides are moderately steep, and the rim and lip are well-pronounced.

The stratigraphy (**Fig. 1**) and diagnostic projectile points indicate that the housepit contains occupations belonging to three cultural horizons:

(1) Kamloops horizon (ca. 1,200–200 BP);

(2) Plateau horizon (ca. 2,400–1,200 BP). and;

(3) Shuswap horizon (ca. 4,000–2,400 BP) (Richards and Rousseau 1987).

Of the three horizons represented, only the occupations related to the Kamloops horizon remain intact. The previous occupations belonging to the Plateau and Shuswap horizons were disturbed and displaced to the edge of the house by the Kamloops horizon occupants.

Test Trench Excavation Results

Stratum I

Stratum I is backdirt deposited by pot hunting activities which consists mostly of Strata II and III deposits from the very northern end of Square A. It is a dark gray-brown silt containing a moderate amount of angular pebbles and disturbed cultural deposits.

Stratum II

Stratum II is comprised of post-occupational surface deposits consisting of a dark gray-black humus (Ah horizon). It contains very few small pebbles, and appears to have originated by aeolian deposition and slopewashing. Cultural materials (mostly lithic waste flakes) are contained within this stratum, but are not as abundant as in the strata lying immediately beneath it.

Stratum III

Stratum III represents roof fill associated with the Kamloops horizon occupation represented in Squares A and B. It is particularly evident in Square A where it is thickest, and it can be traced throughout Square C. This roof fill is comprised of a dark gray-brown silt with high small angular pebble content. A good quantity of cultural materials were secured from this roof stratum, including three Kamloops side-notched points from Square A.

Stratum IV

Stratum IV represents Kamloops horizon floor deposits and is only evident in Squares A and B. It separates two lenses comprising Feature 1, and occupies the upper half of Feature 2. It consists of a medium gray-brown silt with a low frequency of angular pebbles, and it has a high frequency of cultural materials.

Stratum V

Stratum V is a sterile, light yellow-brown glacial till consisting of clay, silt, and angular pebbles. It defines the lower limit of the Kamloops horizon occupation in Squares A and B. In Square B and in the northern half of

Square C this sterile till appears to have been intentionally displaced from around Features 1 and 2 to the north during the construction of the Kamloops horizon house. This stratum has a close similarity in composition to Stratum IX, although Stratum IX has a greater small pebble content.

Stratum VI

Stratum VI occupies the upper aspect of Feature 1, and is a lens of medium orange brown burnt silt and ash. Associated with this lens were several large pieces of fire cracked rock and small chunks of diffusely scattered charcoal. It appears to be the extreme southwest corner of a hearth feature which lies buried to the northeast. It represents the final use-episode of Feature 1 during the Kamloops horizon occupation.

Stratum VII

Stratum VII represents the basal use of Feature 1 associated with the Kamloops horizon house floor (Stratum IV). It is a dark gray black silt with angular pebbles and high charcoal content. It appears to represent a hearth deposit, and may extend beyond the northeast corner of Square A.

Stratum VIII

Stratum VIII is an oval, basin-shaped lens of dark gray-brown silt with angular pebbles and cultural material. It occupies the bottom of Feature 2, which represents the erection of a vertical roof support post. A large, shallow, basin-shaped depression measuring ca. 60 cm north-south by 80 cm east-west was dug into sterile sub-floor deposits (Stratum V), the post was then set in the western edge of the basin, and the basin surrounding the post was then filled in with floor deposits to secure it in place. The post

measured 23 cm in diameter and extended 10 cm into the sterile matrix at the bottom of the basin. Stratum VIII is associated with the Kamloops horizon occupation of the house.

Stratum IX

Stratum IX is similar to Stratum V in color and content, however it differs in that it has a high percentage of small- and medium-sized angular pebbles. This stratum is interpreted to be the very southern edge of the Kamloops horizon occupation house floor. The western wall clearly exhibits this same Stratum, and a burnt log (Feature 3) with an oblique orientation was atop the southern edge of this gravelly deposit. Perhaps the gravelly matrix was intentionally placed around the periphery of the house floor for drainage(?).

Stratum X

Stratum X consists of Shuswap horizon and possibly Plateau horizon house floor deposits, which were dug from the center of the house and were redeposited along the house rims during the Kamloops horizon occupation. It is a loose, dry, medium gray-brown silt with angular pebbles, small pieces of diffusely scattered charcoal, and cultural material. An "eared" Shuswap horizon projectile point was recovered from this stratum in Square C.

Stratum XI

Stratum XI also consists of displaced floor deposits belonging to Plateau and/or Shuswap horizon occupations. It is a loose, light gray-brown dry silt and sand with a high incidence of angular pebbles, some clay

patches, and cultural materials. A Plateau horizon projectile point and corner-notched point were recovered from this stratum in Square C.

Stratum XII

Stratum XII is comprised of disturbed and redeposited Plateau horizon floor deposits displaced from the house center. It is a light gray-brown slightly compact silt with angular pebbles and cultural materials.

Strata X to XII

Strata X to XII indicate that the house had been occupied prior to the Kamloops horizon during both Shuswap and Plateau horizons. The dryness of these strata resulted in the preservation of many fish bones, which appear to be salmon.

Stratum XIII

Stratum XIII is a light gray-white compact sterile clay, which may be the edge of a house belonging to either the Shuswap or Plateau horizon. Such clay stratum are often found along the edges of house floors, or at the edge of the roof.

Excavation Summary and Conclusions

In summary, HP 2 appears to have been initially constructed and occupied during the Shuswap horizon (ca. 4,000–2,400 BP). The basally "eared" projectile point from Stratum X suggests sometime between ca. 3,500–3,000 BP (Richards and Rousseau 1987). The house was also apparently occupied during the Plateau horizon, as indicated by the corner-notched point from Stratum XI. Its large size suggests a date between 2,400–1,600 BP.

During the subsequent Kamloops horizon, the stratigraphy indicates that the cultural deposits contained in the floor of the house were excavated out and heaped on the house rim. Intentional modification of the sterile sub-floor deposits (Stratum V) is indicated, particularly in Squares B and C. The Kamloops horizon occupation is confined only to the very bottom of the house depression (**Fig. 1**) and it is clear that it did *not* extend to include the house walls of earlier structures. The Kamloops horizon deposits are thus smaller in extent, but appear to be intact, and are represented by Strata III, IV, VI, and VII.

References

Richards, Thomas H., and Michael K. Rousseau

1987 *Late Prehistoric Cultural Horizons on the Canadian Plateau*. Department of Archaeology, Simon Fraser University, Publication No. 16, Burnaby, British Columbia.

Figure 1. East wall profile and floor plan of HP 2, Squares A, B, and C

Legend

Stratum	Munsell		Description
I	10 YR 2/1	Dark gray brown	Pot hunter's backdirt from spoil in the north end of Square A. Silt with angular gravel and cultural material.
II	10 YR 2/0	Dark gray black	Humus (A horizon). Surficial deposits.
III	10 YR 2/1	Dark gray brown	Silt with angular gravels and cultural material. It separates two lenses comprising Feature 1 and occupies the upper half of Feature 2. Kamloops horizon roof fill.
IV	10 YR 3/1	Medium gray brown	
V	2.5 Y 4/4	Light yellow brown	
VI	7.5 YR 3/4	Medium orange brown	
VII	7.5 YR 2/0	Dark gray black	
VIII	10 YR 2/0	Dark gray brown	
IX	2.5 Y 3/2	Light gray yellow	
X	10 YR 3/1	Medium gray brown	
XI	10 YR 3/2	Light gray brown	
XII	2.5 Y 4/2	Light gray brown	
XIII	10 YR 3/2	Light gray white	

Figure 1: Stratum Legend for Housepit 2

I Pot hunter's backdirt from spoil in the north end of Unit A. Dark gray/brown silt (10 YR 2/1) with angular gravel and cultural material.

II Surficial deposits. Dark gray black humus (AH horizon)(10 YR 2/0).

III Kamloops horizon roof fill. Dark gray-brown silt (10 YR 2/1) with angular gravel and cultural material. Pebble content high.

IV Kamloops horizon floor deposits. Medium gray-brown silt (10 YR 3/1) with angular gravels and cultural material. It separates two lenses comprising Feature 1, and occupies the upper half of Feature 2.

V Sterile glacial till. Light yellow-brown (2.5 Y 4/4) clay and silt with angular gravels. Compact. Appears to have been dug into during Kamloops horizon occupation.

VI Medium orange brown burnt silt and ash (7.5 YR 3/4). Associated with uppermost use of Feature 1. Probably a small hearth associated with Kamloops horizon occupation.

VII Initial Kamloops horizon use of Feature 1. Dark gray-black silt (7.5 YR 2/0) with angular pebbles. Appears to be hearth.

VIII Basal fill in Feature 2 (Post mould complex). It appears to have deposited into the depression, which was excavated to accommodate the post mould evident in the floor plan. A dark gray brown (10 YR 2/0) silt with angular pebbles and cultural material. Kamloops horizon occupation.

IX Sterile sub-floor deposits at edge of Kamloops horizon house. A light gray-yellow silt (2.5 Y 3/2) with a high small pebble content. Similar to Stratum V.

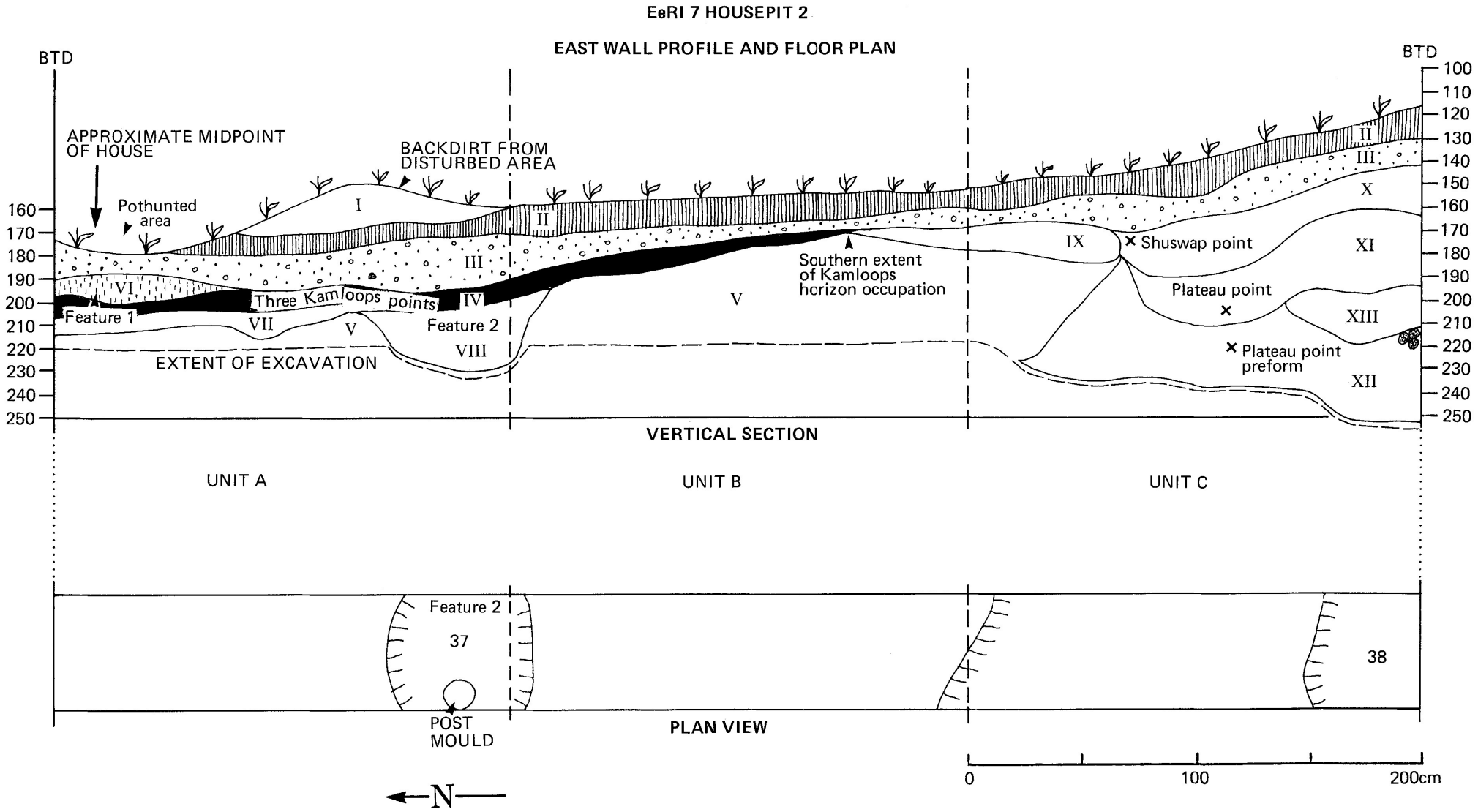
X Shuswap horizon deposits (disturbed by Kamloops horizon occupants). Probably originate from the center of house and represents the remains of the initial pithouse occupation. Medium gray brown silt (10 YR 3/1) with angular pebbles.

XI Plateau/Shuswap deposits (disturbed). Likely originate from center of house. Light gray brown (10 YR 3/2) silt and sand, lots of pebbles, some clay, and cultural material.

XII Plateau horizon deposits displaced from center of house. Light gray-brown (2.5 Y 4/2) silt, pebbles, cultural material.

XIII Light gray white compact clay (10 YR 3/2)(sterile). Possible previous house edge.

Figure 1. East wall profile and floor plan of HP 2, Squares A, B, and C



Test Trench Excavation Summary, Housepit 4

Mike Rousseau

Housepit Location and Description

Housepit 4 is located in the southwestern section of the site (Vol. III, Preface, **Fig.1**), and is one of several house depressions in this portion of the site which are relatively small in diameter when compared to most of the other houses at the site. It is oval in outline, bowl-shaped, and measures 10.5 m north-south by 9.0 m east-west by 1.25 m deep. Surficially, its floor is concave, the sides are moderately steep, and the rim and lip are well pronounced.

Stratigraphy (**Fig.1**) and diagnostic projectile points indicate that the housepit contains occupations belonging to three cultural horizons:

(1) Kamloops horizon (ca. 1,200–200 BP),

(2) Plateau horizon (ca. 2,400–1,200 BP); and

(3) Shuswap horizon (ca. 3,500–2,400 BP) (Richards and Rousseau 1987).

The Plateau horizon deposits are intact, and occupy the basal floor stratum (Stratum IV). The Kamloops horizon occupation is represented by a sparse lithic scatter immediately above the Plateau horizon roof fill deposits (Stratum III) and appears to represent either:

(1) very short occupation of the house floor in a possible structure lacking an earth roof;

(2) deposition of Kamloops horizon items by slopewash from the house rim; or

(3) discard of items and refuse into the house depression shortly after its abandonment during Kamloops horizon times.

Shuswap horizon deposits were encountered in disturbed rim spoil strata contained in Square C (Strata VI to VIII). These deposits were displaced to the edge of the depression during the Plateau horizon occupation.

Test Trench Excavation Results

Stratum I

Stratum I consists of an organic litter mat/humus layer about 3 cm thick, and it represents the contemporary ground surface. The associated matrix is a medium gray-brown (10 YR 3/2) silt with very few small pebbles. Cultural materials included sparsely distributed small lithic waste flakes.

Stratum II

Stratum II represents post-occupational aeolian and slopewash sediments which grade from a dark gray-black (10 YR 2/1) silt with a few angular pebbles in the center of the house, to a medium gray-brown (10 YR 4/3) silt with a moderate amount of angular pebbles at the southern house rim/edge. A Kamloops horizon projectile point preform was recovered in the upper aspect of this stratum in Square C, and another Kamloops point preform was recovered from the base of this stratum in Square A. A Kamloops side-notched point and a small corner-notched point diagnostic of the late Plateau/early Kamloops horizons (ca. 1,600–1,000 BP) were recovered from the basal aspect of Stratum II in Squares A and B respectively. The points and the preform from the bottom of this stratum *may* be indicative of a brief occupation deposited during the commencement of the Kamloops horizon (ca. 1,200–1,000 BP); however, the "floor" is poorly represented by sparse cultural material and it is possible

that these items were deposited by slopewashing or by intentional refuse discard. If indeed an early Kamloops horizon occupation is present, it appears to have been either a non-house occupation/encampment, or a structure lacking an earth roof was constructed and used. No definite roof deposit could be discerned above this questionable Kamloops horizon "floor."

Stratum III

Stratum III represents roof fill associated with the basal intact Plateau horizon occupation, and is contained within Squares A and B. It varies in thickness from ca 10 cm in Square A to ca. 30 cm at the northern edge of Square B. It consists of a dark gray-brown (10 YR 3/2) silt with some angular pebbles in Square A, grading to a medium gray-brown silt at the southern end of Square B. A reworked Plateau horizon point was recovered form the southern edge of the stratum near the edge of the Plateau horizon house floor (Stratum IV). This point was probably redeposited in the roof fill during Plateau horizon times. A moderate quantity of tools and flakes as well as some bone were recovered from this stratum.

Strata IV and V

This stratum represents Plateau horizon floor deposits which are contained within Squares A and B. It varies in thickness from 3 to 10 cm, and is comprised of a dark gray black (10 YR 2/1) silt with a few angular pebbles. This stratum contains an abundance of cultural materials, which include high lithic waste flake frequencies (predominantly basalt), lithic tools, faunal remains (mammal and fish), fire cracked rock, and charcoal chunks/bits. No diagnostic artifacts were recovered from the floor zone. Two vertically-

oriented post moulds (Features 1 and 3) were identified in Square A. Feature 1 was ca. 20 cm in diameter and extended only 3 cm into sterile subfloor deposits (Stratum XI). Feature 3 was ca. 15 cm and extended 11 cm into subfloor deposits. A small, circular, bowl-shaped hearth-pit (Feature 2) measuring ca. 40 cm in diameter by 10 cm deep was intersected in the western wall of Square A. A large, oval, basin-shaped, storage/refuse pit (Feature 4) (Stratum V) was intersected by the eastern wall of Square A. The matrix filling Feature 4 is a dark gray-brown (10 YR 2/2) silt with high cultural material content. Several large flake blanks, utilized flakes, retouched flakes, and a moderate quantity of fish and mammal bone were secured from this pit feature.

Strata VI and VII

These strata represent Shuswap horizon deposits displaced from the house floor to the rim during the Plateau horizon occupation. These strata both consist of loose, dry, light gray-brown (2.5 Y 4/4) silt with lots of angular gravel and cultural materials. Stratum VII differs from VI in its higher organic matter content which includes birch bark rolls, puccoon nuts, charcoal, and bone. A Shuswap horizon projectile point was secured from Stratum VII. These deposits indicate that this house (or area of the site) was initially inhabited in Shuswap horizon times, and was displaced in Plateau horizon times.

Stratum VIII

This is a sterile, light gray-brown (10 YR 5/2) compact mixture of clay and silt. It is contained in the southern half of Square C, and it *may* represent the extreme southern edge of a possible Shuswap horizon occupation/house

floor. Alternately, it may have been deposited during Plateau horizon times as part of the house construction activities.

Stratum IX

This is a natural, sterile, possible buried Ah soil horizon comprised of light yellow-brown (10 YR 5/6) sand and silt. It appears to represent a stable ground surface, which was buried during Shuswap and/or Plateau horizon times.

Stratum X

Stratum X is also a natural sterile buried soil horizon beneath Stratum IX which is comprised of medium brown (10 YR 4/3) silt, clay, and pebbles. It is horizontal in Square C, and in the south end of Square B it has slumped slightly at the edge of the Plateau horizon house edge.

Stratum XI

Stratum XI is a compact, yellow-brown (10 YR 4/3) mixture of silt, clay, and angular pebbles. It occupies Square A and the northern half of Square B. It is possible that this stratum was culturally deposited as intentional subfloor fill immediately prior to the deposition of the Plateau horizon floor deposits. This is suggested by the disconformity of this sterile stratum with sterile Stratum XII to the south.

Stratum XII

Stratum XII is a densely compact, sterile, light gray (10 YR 4/3) clay and silt occupying the southern half of Square B and all of Square C. Two bench-like features (Features 5 and 6) were intentionally excavated into this

stratum during the Plateau horizon occupation to form the southern edge of the house floor.

Excavation Summary and Conclusions

In summary, HP 4 (or the area where HP 4 is now located) was initially occupied during the Shuswap horizon (ca. 4,000–2,400 BP). These deposits were displaced to the rim of the Plateau horizon house, which is represented in the intact basal house floor deposits (Stratum IV). A possible third component belonging to the beginning of the Kamloops horizon is weakly represented immediately above the Plateau horizon roof fill (Stratum III) within the bottom of Stratum II.

References

Richards, Thomas H., and Michael K. Rousseau

1987 *Late Prehistoric Cultural Horizons on the Canadian Plateau*. Department of Archaeology, Simon Fraser University, Publication No. 16, Burnaby, British Columbia.

Figure Captions

Figure 1: Housepit 4 east wall profile and floor plan.

Figure 1: Stratum Legend for Housepit 4

I Littermat/Duff layer. Consists of high organic component within a medium gray-brown (10 YR 3/2) silt.

II Mostly post occupational deposition of aeolian and slopewash sediments. This stratum grades from dark gray black (10 YR 2/1)

in the north end of the trench to medium gray brown (10 YR 4/3) silt and a few angular pebbles. A brief Kamloops horizon occupation may be contained in this stratum.

III Plateau horizon roof fill deposits. A dark gray-brown (10 YR 3/2) silt with lots of angular pebbles and cultural materials.

IV Intact Plateau horizon house floor. A dark gray black (10 YR 2/1)silt with some angular pebbles, fire cracked rock, charcoal, cultural material. Confined to units A and B. Associated with Stratum V of Feature 4. Stratum IVA is a light yellow gray ash lens above burnt wood.

V Feature 4 (storage/refuse pit fill). A dark gray-brown (10 YR 2/2) silt with high cultural material content. Appears to relate to the Plateau horizon house floor.

VI Shuswap horizon deposits displaced from the center of the house. A light gray-brown (2.5 Y 4/4) silt with lots of angular gravel.

VII Shuswap horizon deposits (displaced) similar to VI with high organic content (birch bark, puccoon nuts, charcoal, bone). Loose, dry.

VIII Sterile light gray brown (10 YR 5/2) compact clay/silt which may be edge of Shuswap horizon house floor or roof fill.

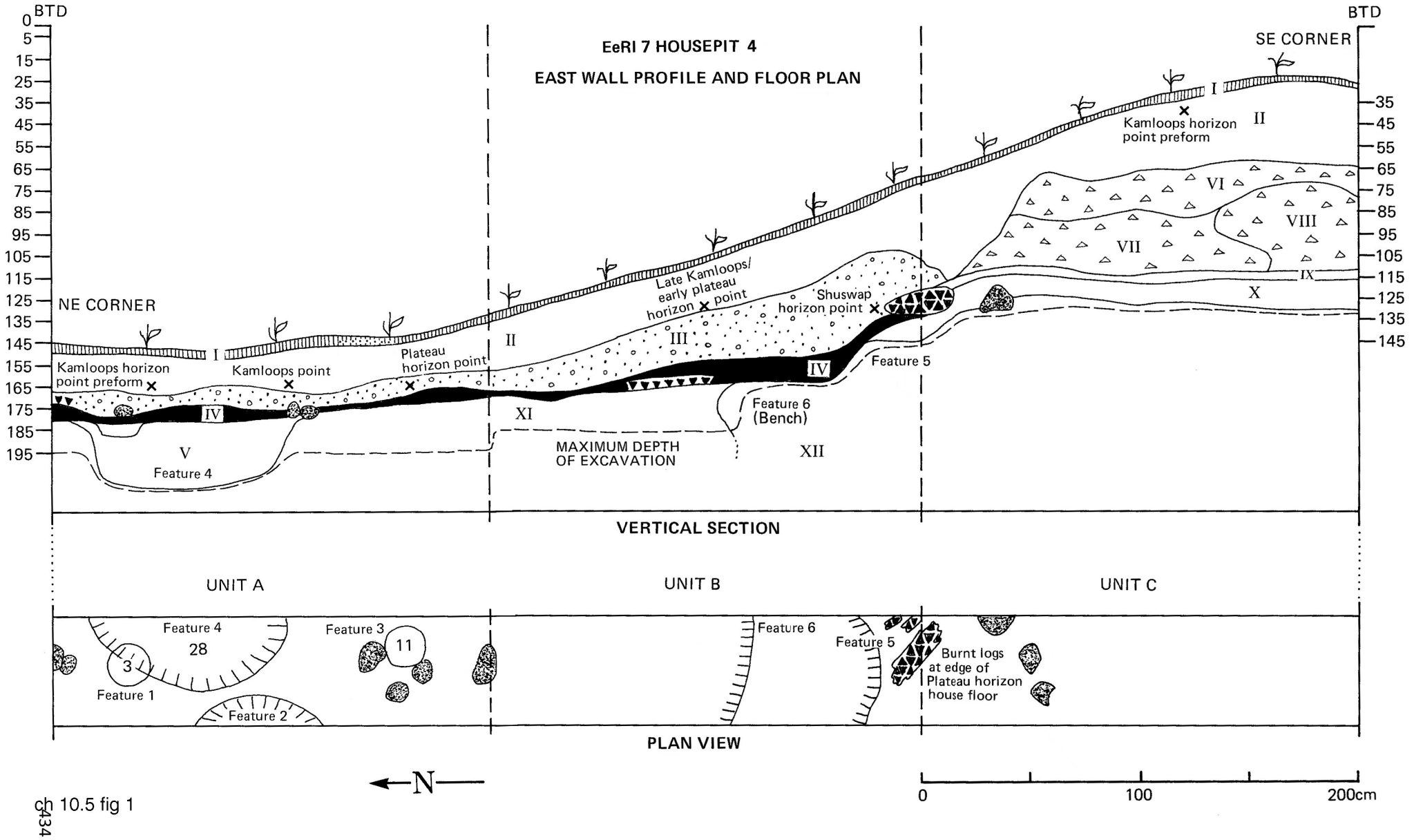
IX Possible buried Ah soil horizon. A sterile light yellow brown (10 YR 5/6) sand and silt.

X Sterile medium brown (10 YR 4/3) silt. Buried soil.

XI Sterile glacial till. Yellow-brown (10 YR 4/3) silt, clay, pebbles.

XII Sterile glacial till. Light gray (10 YR 4/3) clay/silt.

Figure 1. Housepit 4 east wall profile and floor plan.



ch 10.5 fig 1

Housepit 5 Test Trench

Pierre Friele

Housepit Location and Description

Housepit 5 is located on the top of a terrace on the north bank of Keatley Creek. (Vol. III, Preface, **Fig.1**). It is an oval and is 22 m along its short axis with a prominent rim; no entrance features are evident.

Test Trench Excavation Results

The initial living surface of the housepit area was on a paleosol. The initial house excavation followed, probably during the Plateau horizon. Several re-occupations occurred, the final one during the Kamloops horizon.

Two, possibly three, living surfaces are identifiable in this housepit (**Fig. 1**). The floor deposit of the main, and latest, occupation is found in the center of the housepit. It is directly overlain by a Kamloops horizon roof identified as such by a side-notched point. The pre-housepit living surface occurs in a paleosol underlying the rim spoil of the housepit. This paleosol is composed of well compacted silt approximately 10–20 cm thick. Below the surface of the paleosol there is an abundance of large flake blanks, cores, and secondary flakes. Four biface tips, a biface, five microblades, and a microblade core were also found within this paleosol. It is possible that this represents the floor deposit of the initial housepit, but it has been interpreted as an ancient ground surface for the silts resemble an aeolian deposit. Silts such as this are found beneath the rims in HP 4 and HP 7 as well. The third living surface is found on a slope above and west of Feature 2; it ends where the sterile steps up abruptly to the paleosol silts. This bit of floor is overlain by rim spoil or roof and is not associated with any diagnostic

artifacts. It could be associated with the Kamloops horizon floor, or it could represent another occupational horizon. Further excavation is required to clarify this relationship.

The first rim spoil deposits directly above the paleosol in the northern half of Square E are clearly truncated. These represent an early rim. Above this truncated rim, two yellow, gravelly lenses dip southward toward the outside of the rim and undoubtedly extend beyond the test trench.

These lenses are truncated by the Kamloops roof deposit which blankets the whole housepit. Between these lenses are variously textured rim spoil deposits which are also truncated by the Kamloops roof deposit. This complicated arrangement of lenses suggests numerous occupation re-excavation cycles; the presence of a possible earlier floor (Stratum V) supports this notion, as does a small surface remnant (Stratum IX) cut into the paleosol.

Many shallow pit features extend into the sterile material. Four of these pits are overlapping, having been excavated at different times. One large, bell-shaped storage pit was excavated to a depth of one meter. The pit fill deposits were layered, but did not contain much sterile material.

Excavation Summary and Conclusions

In sum, HP 5 has only one truly diagnostic artifact; the Kamloops side-notched point found in the roof deposit, indicating that the subjacent floor is also Kamloops horizon. Microblades and a microblade core were found in the paleosol silts predating housepit construction. The complex rim and ambiguous floor deposit (Stratum V) suggest many cycles of occupation and

re-excavation. Thus the housepit probably has been used from at least The Plateau horizon and possibly earlier, ending in the Kamloops horizon.

The Kamloops floor in HP 5 is very hard to follow in the center, where its texture is no different than the texture of sterile. Here, the distinction is made primarily based on compaction and very subtle color changes. The Kamloops floor is a very distinct silty material towards its edge, but at the center it is very clear.

The upper boundary of the paleosol living surface is very well defined at its contact with the overlying rim deposit, but at its base its contact with the basal till is gradational.

Figure Captions

Figure 1: Housepit 5 east wall profile and floor plan.

Figure 1: Stratum Legend for Housepit 5

(*dry* Munsell colors)

I Surface, dark gray (10 YR 3/2) silty loam: relatively coherent.

II Kamloops roof fill, gray (10 YR 3/2) silty loam with a high gravel content plus occasional charcoal chunks and cobbles–mostly fire cracked rock.

III Kamloops floor deposit, gray to dark gray (10 YR 4/2–5/2), same characteristics as II in the center of the house except slightly more compact and becoming slightly lighter in color. Towards the periphery of the house, this strata becomes much lighter in color and less gravelly than the overlying deposits.

IV Kamloops roof fill or rim spoil, gray (10 YR 4/2). Similar to strata II except that it is slightly browner in color and has more rootlets. It seems less consolidated than roof fill.

V Possible floor facies, brown, (10 YR 5/3). Thin layer of highly organic silty loam with high gravel content, like the strata above it. Very unconsolidated.

VI Possible rim spoil, brown (10 YR 5/4). Same as strata V except that it is a lighter gray brown. Highly unconsolidated, may have slumped.

VII Pit fill, light brown (10 YR 3/2). Silty loam with some gravels, well consolidated.

VIII Rim spoil deposits, stratified yellow and dark brown lenses (10 YR 5/4 / 10 YR 3/3), very unconsolidated with many rootlets, lots of gravels and large angular cobbles. Lots of fire-reddened and charcoal lenses, birch bark, and carbonate flecks. Hydrophobic.

IX disturbed paleosol (10 YR 4/3) silts with rootlets, unconsolidated.

X Paleosol (10 YR 4/3) silts showing some A horizon formation in the top 20 cm. The old surface has been burned. Artifactual material is abundant, including microblades.

XI Sterile, yellow (10 YR 4/4) silts, unweathered, parent material.

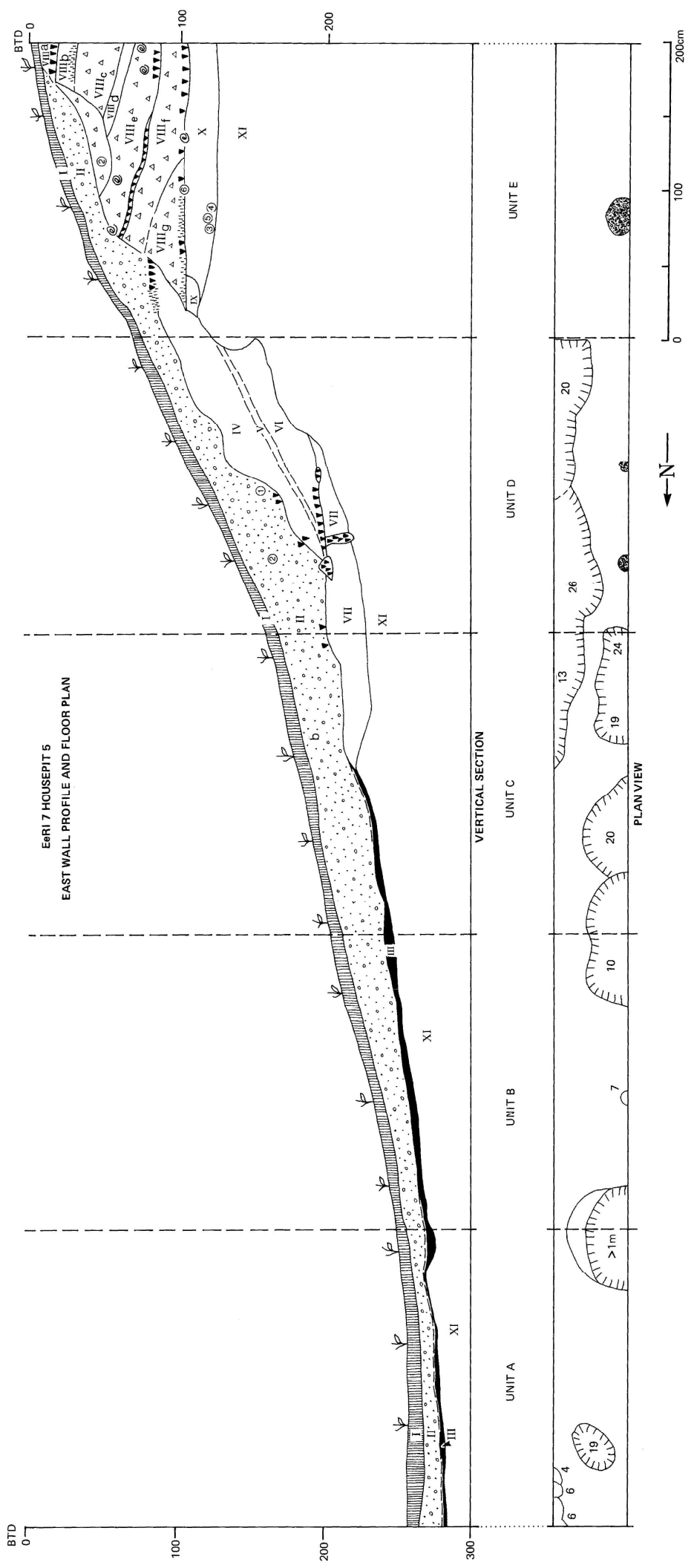


Figure 1. Housepit 5 east wall profile and floor plan.

A Pre-pithouse Occupation Component Under Housepit 5

W. Karl Hutchings

During the 1986 excavations several basalt microblades were recovered from a thin, black stratum in the rim of HP 5. This stratum was described as exhibiting evidence of vegetational burning. As one of the goals of the 1987 excavations at the site, the previous years' test-trench was extended towards the outer, southern, edge of the HP 5 rim (Vol. III, Preface, **Fig. 1**) and was widened to expose a larger area of the paleo-burn deposit in two, side-by-side, 1 m x 2 m test units.

The 1987 excavations revealed the paleo-burn deposit at approximately 122 cm depth below surface. It was found however, that the deposit was limited in areal distribution to the north 10 cm of the unit, and that it overlay an aeolian-like deposit, which contained still larger quantities of microblades and other tools.

This aeolian-like deposit (labeled Strata X and Xa)(Chapter 10.3, Fig. 2) averaged 28 cm deep, with a total estimated volume of 0.56 m^3, and consisted of carbonate compacted silts containing fine gravels which increased in frequency with depth. In the southern end of the unit, several rootlets resembling those of sage brush (Artemisia) were found truncated at the surface of the deposit but retaining their vertical orientation within the matrix. Almost no fire cracked or altered rock, and very little bone or other organic material was recovered, with the exception of some scattered charcoal. One of the larger pockets of charcoal in the upper part of the deposit was of a size sufficient to be recovered for a radiocarbon sample.

Unlike pithouse-associated deposits, Strata X and Xa are horizontal and of an even depth throughout. The pithouse deposits tend to be tapered and

inclined parallel to the slope of the pithouse roof. Strata X/Xa are not found within the housepit, and like similar deposits in HP 7, would appear to be truncated near the interior wall of the pithouse. This suggests that; (1) Strata X and Xa represent surface deposits prior to the pithouse occupation of the site, and; (2) during the initial (or subsequent) construction phase of the pithouse, the surficial silts in the living area of the pithouse were removed and perhaps used as roof-cover.

This theory is supported by the fact that microblades are occasionally recovered from various strata through the rim deposits in both HP 5 and HP 7, indicating their association with roof and rim deposits after construction and cleaning phases of the pithouse, and the resultant mixing in the rim. Further, testing of HP 1 revealed no deposits resembling those of Strata X from HP 5, or of the similar HP 7 deposits, and produced no microblades in any of the rim deposits.

The pre-pithouse deposits from HP 5 produced a total of 1,957 pieces of lithic cultural material (see Table 1).

Exotic materials (i.e., other than basalt) included various cherts and chalcedonies native to the surrounding area.

Table 1
Keatley Creek (EeRl 7) Lithics
Provenience: Housepit 5, Square F, Strata X/Xa

Lithic	Count	% Basalt
Tools/Artifacts		96.4
– bifacial	10	
– unifacial	19	
– misc., chipped stone	27	
Microblades	362	98.6
Flakes	1,539	97.5
Total	1,957	97.5

Table 2 and 3 present a breakdown of all microblades and other artifacts recovered from the 1987 excavations of HP 5, Strata X/Xa deposits. Apart from microblades, which comprise 86.6% of the total assemblage, the most prominent tools found are utilized, and unformed retouched flakes (4.3% and 2.6% of the total artifact assemblage, respectively). Also of interest, are four microblade core/core fragments and four keeled scrapers; both comprise approximately 1% each of the total artifact assemblage (or 7.1% of the artifact assemblage minus the microblades) and all are of fine-grained basalt. Keeled scrapers are reported from the Lind Coolee Site (Daugherty 1956).

Table 2
Keatley Creek (EeRl 7) Lithics
Provenience: Housepit 5, Square F, Strata X/Xa

		Test Unit1			Test Unit 2			Row
Code/Artifact	**Level:**	**1**	**2**	**3**	**1**	**2**	**3**	**Totals**
Bifacial Artifacts								
131 Biface (misc.)			1	2	2			5
133 Bifacial Drill		1						1
134 Preform			1					1
135 Distal tip		1	1					2
140 Unformed biface/fragment						1		1
Unifacial Artifacts								
150 Formed unifacial scraper			1		1			2
155 Large keeled scraper			1	1	1	1		4
157 Misc. formed unifac fragment		1						1
170 Unformed retouched flakes		3	1	1	2	2	2	11
171 Abrupt irregular retouch			1					1
Misc. Chipped Stone								
147 Microblade		12	75	106	19	104	46	362
149 Microblade Core/fragment			4					4
180 Utilized flake		5	4	2		4	3	18
186 Core (multidirectional)				1		1		2
187 Core fragment			2	1				3
Column Totals		**23**	**92**	**114**	**25**	**113**	**51**	**418**

A single, well-made projectile point fragment of fine-grained trachydacite recovered from Level 2 (10–20 cm depth within the strata or approximately 132–142 cm depth below surface) of Stratum X, is evidence of a high level of lithic craftsmanship during the pre-pithouse occupation of the site. The parallel-sided stemmed point (Vol. I Chapter 3, **Fig. 1**) Artifact 1910, (approximately 1/3 complete, proximal fragment) exhibits pressure flaking as the final shaping stage of reduction, and heavy edge grinding along the lateral margins of the stem.

Table 3
Keatley Creek (EeRl 7) Lithics
Provenience: Housepit 5, Square F, Strata X/Xa

Sample	Level	Complete Pieces	Fragmentary Pieces			Core Maint. Flakes	Sample Totals
			Prox.	Med.	Dist.		
Square1							
LS 621	1	2	4	4	1	1	12
LS 622	2	2	40	15	7	11	75
LS 623	3	4	41	41	17	3	106
SquareTotals		*8*	*85*	*60*	*25*	*15*	*193*
Square2							
LS 624	1	2	6	9	1	1	19
LS 625	2	6	46	34	16	2	104
LS 626	3	6	16	16	7	1	46
SquareTotals		*14*	*68*	*59*	*24*	*4*	*169*
Column Totals		**22**	**153**	**119**	**49**	**19**	**362**

Though the stem is slightly shorter, this point is similar in flaking character and pattern of stem grinding to Cougar Mountain type projectile points from Cougar Mountain Cave, Fort Rock Valley, Oregon, dated to ca. 12,960 years ago by obsidian hydration and supported by a radiocarbon date of 11,950 ± 350 BP (Gak-1751) from Cougar Mountain Cave II, 140 feet to the

northwest (Layton 1972). The Keatley Creek point is also similar to points described by Daugherty (1956) from the Lind Coulee Site in eastern Washington State dated at 9,400 ± 940 years BP and 8,518 ± 400 years BP (Daugherty 1956:256), though again it is slightly smaller overall.

Leonhardy and Rice (1970:25) report that Daugherty now considers the Lind Coulee radiocarbon dates to be slightly inaccurate and that geologic research at the site places the stemmed point component at 9,000–10,000 BC.

In general, the artifacts associated with the pre-pithouse occupation seem to comprise a basic hunting, hide-processing toolkit. The small quantity of mammal bone recovered is burnt and extremely fragmentary; it is doubtful whether it will reveal any information regarding the types of game species utilized during the pre-pithouse occupation.

Paleo-environmental studies indicate a warm, dry climate between ca. 10,000 and 8,000 BP (the Altithermal climax). Due to the presence of large grassland areas during this time, Rousseau (1987) suggests that k-type grazing species such as sheep, deer, antelope, elk, moose, and perhaps bison would have been exploited. In addition, the ever increasing intimacy with seasonal availability and behavioral patterns, would have allowed these large game hunters to supplement their resource base with the growing abundance and variety of r-type species (Rousseau 1987).

Despite the large sample of lithic material from the pre-pithouse deposits, it is difficult to determine whether there is any cultural relationship between this component and the later pithouse occupation at Keatley Creek. There are several indications that there is probably no direct relationship between the two phases of occupation:

(1) the protective location, proximity of fresh water, firewood, lithic materials, and favorable hunting, would be inviting to any group moving into or through the area;

(2) there appears to be a large temporal gap between the date suspected for the pre-pithouse occupation and the beginning of the later Plateau Pithouse tradition as outlined by Rousseau and Richards (1985), and;

(3) there is no obvious continuity in the use of microblade technology between the two occupations; a technology which was seemingly important during the earliest occupation.

In conclusion, several suggestions have been made regarding the nature of the pre-pithouse occupation of the Keatley Creek site. Unfortunately, this type of preliminary analysis only serves to create more questions than it answers; more data is required to substantiate the interpretations presented here. Further excavations at the Keatley Creek site (EeRl 7) should include a major effort to expose a larger area of the pre-pithouse occupation deposits and additional sub-surface tests of the surrounding area to locate these deposits where they may be investigated without disturbing the pithouse rim deposits.

References

Daugherty, R.D.

1956 Archaeology of the Lind Coulee Site, Washington. *Proceedings of the American Philosophical Society* No. 100: 233–278.

Layton, Thomas N.

1972 Lithic Chronology in the Fort Rock Valley, Oregon. *Tebiwa* 15:1–21.

Leonhardy, F.C. and D.G. Rice

1970 A Proposed Culture Typology for the Lower Snake River Region, Southeastern Washington. *Northwest Anthropological Research Notes* 4(1):1–29.

Rousseau, Mike K.

1987 Early Prehistoric Human Occupation of South-Central British Columbia: A Review of the Present Evidence and Some Recommendations for Future Research. Paper presented at the 20th Annual Meeting of the Canadian Archaeological Association, April, 1987, Calgary.

Rousseau, Mike K. and Thomas Richards

1985 A Culture-Historical Sequence for the South Thompson River—Western Shuswap Lakes Region of British Columbia: The Last 4000 Years. *Northwest Anthropological Research Notes* 19(1):1–32.

Tables

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Column Totals		**22**	**153**	**119**	**49**	**19**	**362**

Test Trench Summary, Housepit 6

Pierre Friele

Housepit Location and Description

Of the eight housepits mapped, HP 6 (Vol. III, Preface, **Fig.1**) is unique in that its southern rim is broken as if it were an entrance to the dwelling, but was likely breached by flooding as this pit is partially filled with slopewash material and lies along the course of an ephemeral channel. This housepit has a circular, shallow, concave floor and a moderately, but not steeply, pronounced rim. It is about 13 m in diameter. Several anomalous large angular boulders were found on the surface near the center of the housepit. The test trench lies just to the east of the side entrance and the strata, except for a small area of pot hunters' backdirt, does not appear to be disturbed.

It is felt that this housepit was initially occupied in the Plateau horizon; stratigraphic evidence indicates two major cycles of house occupation and collapse occurred (**Fig. 1**), the first during the Plateau horizon, the last during the Kamloops horizon. After these occupational cycles, the housepit was used as a brief camping area.

Two diagnostic artifacts were found in HP 6. One, a small corner-notched point is late Plateau horizon (ca. 1,4001,200 BP), was found in roof fill (Stratum III). The other, a side-notched Kamloops horizon point (ca. 1,200–200 BP) was found in the floor deposits (Stratum IV). It is possible that this housepit was excavated approximately 1,500 years ago, although living floor deposits from this time period were largely removed by Kamloops horizon residents and dumped on the rim.

Test Trench Excavation Results

Detailed characteristics of the strata are noted in the Stratum Legend accompanying the Test Trench profile sketch. Stratum relationships will be discussed here.

Strata I (and II?) are post occupational and are attributed to aeolian and slopewash processes. The housepit was periodically flooded and partially filled with slopewash as a result.

The roof fill (Stratum III) is continuous through the entire test trench, but is cut into by a burn event (Stratum V) that is associated with Pit Feature 2. The reddened lens (Stratum V) contains an unusual amount of bone. It grades into a charcoal lens towards the south and dips below the house roof fill and the house floor on the north side of Pit Feature 2. The occupation represented by the burned and charcoal strata (V) and Feature 2, probably represents a brief, Kamloops horizon camp in the abandoned housepit depression. It is possible that the material underlying this hearth, in the remainder of Feature 2 was excavated to its maximum depth during the Plateau or Kamloops horizon occupations since deposits in the base of Feature 2 resemble floor deposits, especially Stratum VIII, a yellow gravel.

Pit Feature 1 is overlain by a floor (Stratum IV). Based on abundant, articulated salmon remains occurring throughout a loam layer below the floor (Stratum IV), it was probably used as a storage pit for salmon. Feature 1 was later modified along its south wall for use as a post hole as evidenced by an *in situ* vertical beam. Brown sterile soil was used as a packing material around the post. The north half of the feature may have continued to be used for storage.

The Kamloops horizon occupation may have been slightly smaller than the Plateau horizon occupation since an earlier floor remnant (Stratum III) appears to extend beneath rim spoil (Stratum VII) associated with the floor of the main Kamloops horizon occupation. This floor material (Stratum IV) forms the packing for the rocks that act as a retaining wall at the edge of this rim spoil.

Excavation Summary and Conclusions

Housepit 6 was first occupied in the late Plateau horizon. Later Kamloops horizon occupants removed most of the floor and roof deposits of this early occupation and deposited them on the rim. A short duration camping event occurred on its collapsed roof, and the housepit has recently been pot hunted.

Figures

Figure 1: Housepit 6 east wall profile and floor plan.

Figure 1: Stratum Legend for Housepit 6

I Duff layer with Potter's backdirt in Square A; light brown (10 YR 3/2)

II Clayey wedge thickening towards pithouse center, probably slope wash/aeolian resultant; contains charcoal flecks throughout. Black (5 Y 2.5/1)–high organic content.

III Roof fill–pea gravel in a clayey matrix. Contained concentrations of fire cracked rock, scattered charcoal and a biface fragment. Possible textural lensing in south near/over rim spoil. black (5 Y 2.5/1).

IV Floor–gravelly throughout. Truncated by post holes and a pit; charred wood, bone and two horizontal flakes found on its surface; charcoal, one piece, 5 cm in diameter and 10 cm long, was found at its base. A Kamloops point and bone pendant came from within this strata or surface of VIII. Dark brown (2.5 YR 3/2).

V Fire reddened earth grading to charcoal lens towards Feature 2. Cobble in Feature 2 confuses stratigraphy, but lens seems to continue to south side of Feature 2; an arbitrary dotted line has been drawn from this point to intersect with Stratum I. Burnt bone was found on surface of this layer. Red-brown (10 YR 3/4).

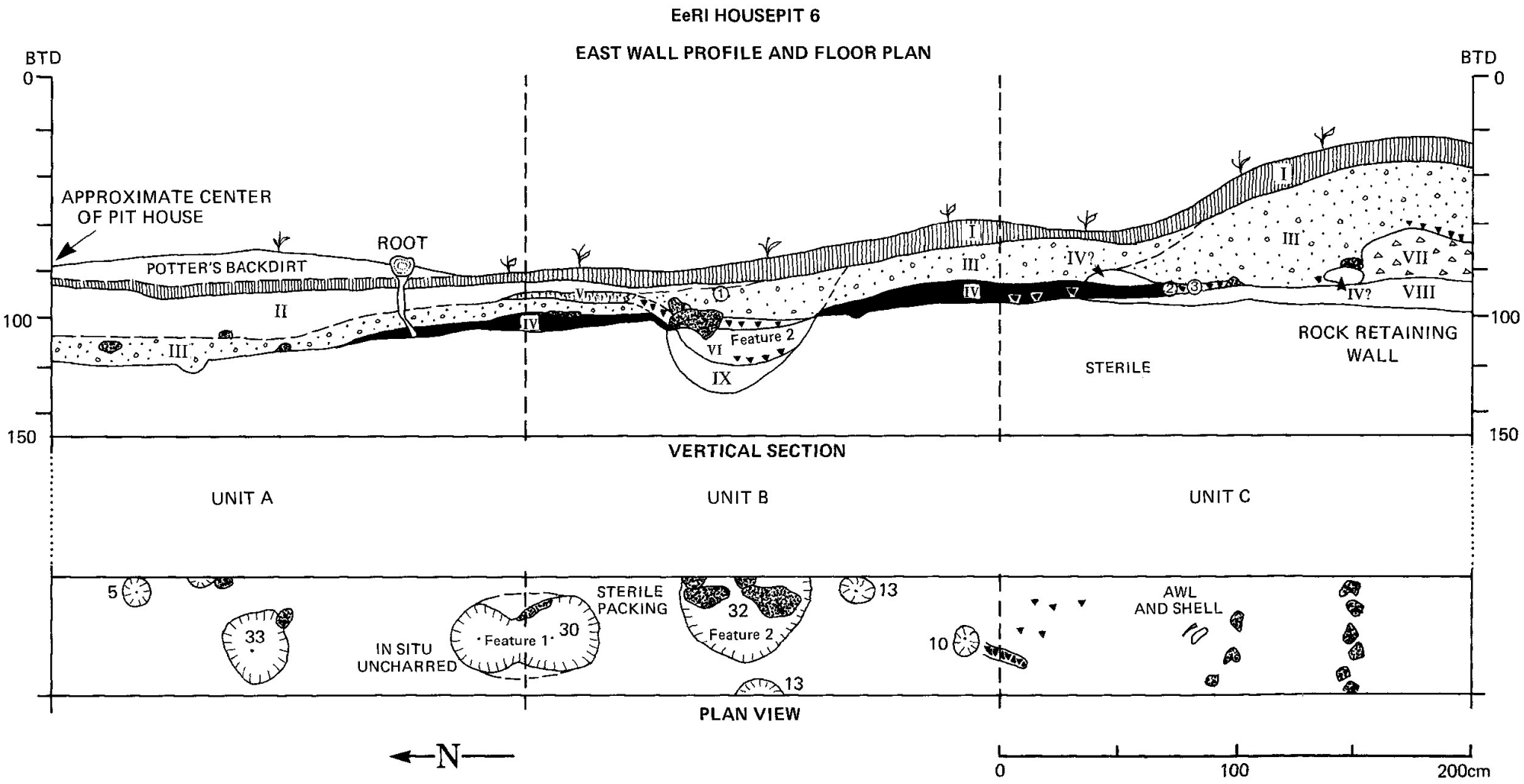
VI Feature fill–few lithics; charcoal lense at contact between VI and VIII. Brown (10 YR 3/2).

VII Rim spoil–loose gravelly matrix, dry and full of root hairs, ashy near base along south wall. Contained primary flakes and tip of a horn. Olive brown (5 Y 2.5/2).

VIII Floor–surface defined by a thin, but compact layer; gravelly matrix. Charcoal, fire-cracked rock, awl, and shell were found on its surface and possibly the Kamloops point, and pendant mentioned in IV. Deeply weathered bone found along south wall beneath rim spoil. Light brown (10 YR 3/3).

IX Pit fill with the same characteristics as VIII.

Figure 1. Housepit 6 east wall profile and floor plan.



Housepit 8 Test Trench Summary

Pierre Friele

Housepit Location and Description

Housepit 8 is a circular pit 18 m in diameter located on the northern bank of Keatley Creek (Vol. III, Preface, **Fig. 1**). It has been excavated into a 15° slope so that its northern rim is much higher than its southern rim. No prominent entrance occurs in the rim. The floor is shallowly concave.

The test trench (**Fig. 1**) was located so as to crosscut a rocky surface mound in the northeast quadrant of the housepit. It was thought that this mound might have been an architectural feature, but the internal stratigraphy revealed in the trench did not reveal such a feature.

The occupational history of HP 8 appears to be fairly simple; at least two cycles of occupation and collapse, and a later phase of use as a brief camp spot are represented in the test trench.

Test Trench Excavation Results

There is only one main floor, most likely of Plateau horizon age, overlying or formed from basal till. The floor is very indistinct, but it can be traced in places to the edges of the housepit where typical rim spoils occur. In Square C the floor cannot be followed at all, and here the roof deposits appear to lie directly on sterile. In Squares A and D the floor is only evident as compacted and/or slightly stained sterile material. Only in Square BB is the floor well defined by a contiguous layer of compacted cultural material. It was in this square that a distal tip of a probable Plateau horizon knife was found on the floor. Also, two-corner notched Plateau horizon points were found close to sterile in the southern half of Square B.

Overlying this floor and the rim spoil are the roof deposits. The roof deposits are very thick and complicated in the northern rim where post-occupational collapse and slumping appear to have redistributed this material downslope in various lenses. In the southern rim the roof can be defined by a single stratum.

In the surface layer, in a zone 1–10 cm thick, side-notched Kamloops horizon points were found in Squares B and BB. Here, near the surface, there are fire hearths probably associated with post-occupational camps in the housepit.

Thus, the stratigraphical and artifactual evidence suggests that the last major occupation occurred during the Plateau horizon. After abandonment of the Plateau house, the roof collapsed and the depression was used as a brief camp/activity area during the Kamloops horizon.

As mentioned earlier, the stratigraphy near the northern rim is very complex. Square BB contains two lenses of typical rim spoil material, which are separated horizontally by a well-sorted yellow silt lens. One possible interpretation views the silt as a cultural deposit laid down over the rim spoil during construction of the housepit only to be buried subsequently by slumping, or cultural deposition, of the upper rim spoil at a later date.

As one moves south, a brown, gravelly material appears above the floor and thickens toward Pit Feature 5. Above the post in Pit Feature, 5 this lens abuts abruptly against another lens of similar material, which then thins to the south and ends in Square AA above sterile. This arrangement of lenses has been interpreted as pit material deposited around the post (the remains of this post were excavated in situ) during an occupational event.

In the center of the housepit, in Square B, no clearly definable roof material is present. Here a black silty surface layer lies directly over the floor. The roof material picks up in the last quarter of Square B and thickens, as a single lens, to the southern rim. Below the roof deposits, on the rim, is a lens of stained, redeposited basal till overlying sterile. This material probably represents material from the original housepit excavation.

Excavation Summary and Conclusions

In summary, the major occupation of HP 8 was during the Plateau horizon, but during the Kamloops horizon the housepit was used as a camp spot.

In general, the floor in this housepit is not clearly definable. In some places the floor was defined on the basis of apparent induration, in others by a slight variation in color. Only in Square BB was the floor expressed as a coherent silty layer ± 5 cm thick and lighter in color than the roof material.

Figure Captions

Figure 1: Housepit 8 east wall profile and floor plan.

Figure 1: Stratum Legend for Housepit 8

I Surface: black (10 YR 2/1) sandy loam with pea gravels, highly organic.

II Roof: very dark grayish brown (10 YR 3/2) angular cobbles and gravel in a sandy loam.

III Rim spoil: dark brown (7.5 YR 3/2) loose, dry gravels; very organic.

IV Rim component: olive brown (2.5 Y 4/4) well-sorted silts.

V Rim component: dark brown (10 YR 3/3) disturbed till.

VI Floor: black (5 YR 2.5/1) compacted loam or basal till.

VII Pit fill: black (7.5 YR –2/0) angular cobbles and gravel in a sandy loam.

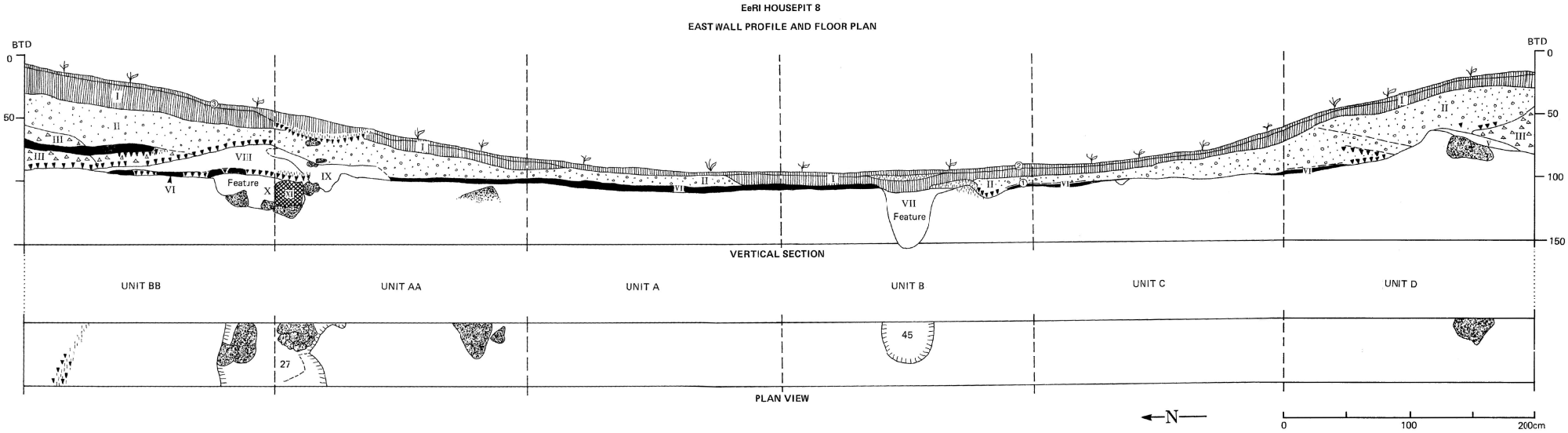
VIII Post packing: dark brown (10 YR 3/1) pea gravels in a sandy loam.

IX Post packing: dark brown (10 YR 3/1) pea gravels in a sandy loam.

X Pit fill: dark brown (7 YR 3/2) pea gravels in a sandy loam.

XI Post-in situ: charred on the outside.

Figure 1. Housepit 8 east wall profile and floor plan.



Small Housepit 47 Excavation Results

Gyles Iannone and Peter Merchant

Housepit Location and Description

Keatley Creek has a number of smaller house depressions which are encompassed by the main site area. Excavations have been undertaken in some of these small house features to determine their role in the overall site organization. The excavation of HP 47 is one such investigation. This house feature is located on the south edge of the main section of the site about 20m east of HP 5 (This Volume, Preface, **Fig. 1**). The house is positioned on the top edge of the south cut bank bounding the Keatley Creek floodplain. Housepit 47 measures approximately 8 m in diameter. Two test trench squares measuring 2 m north-south by 50 cm east-west were excavated through the house feature. The squares were dug by natural strata, using the trench datum for provenience purposes. Larger strata were broken up into arbitrary 10 cm levels.

Test Trench Excavation Results

Twelve separate strata were identified during the excavation. They are indicated on the profile drawing of the west wall (**Fig. 1**).

Stratum I

This stratum was about 3 cm in depth. It consisted of litter mat and grass roots. No colluvium deposits were encountered in this layer which makes it different from the large housepits. This appears to be a natural deposit, with no cultural material in association.

Stratum II

This stratum (5 cm in depth) lies mostly in Square B, with only about 28 cm intruding into Square A. This layer is a semi-compact, medium gray-brown, sandy silt with high (30%) pea gravel content, (25%) pebbles, and an abundance of fire cracked rock. There was very little in the way of cultural material in this stratum. A few flakes and one bipolar core were recovered from Square B. No cultural material came from Square A. Towards the bottom of this layer, sections of burned beams and charcoal fragments were uncovered. It seems possible that this may be a section of burned roof. If this is so, it may be from an extremely small house, or some other type of small structure.

Stratum III

This stratum is about 10 cm in depth and is only found in Square A of the trench. This layer is made up of a moderately compact light gray-brown, sandy silt with 3% pea gravel, 10% pebbles, and 10% cobbles. Several flakes were recovered from this stratum. Due to its association with a depression (note profile), it would appear as though this stratum was formed through aeolian activity. Wind blown sediments would have built up in the underlying depression, thus forming this deposit. The flakes probably entered the stratum through natural depositional processes.

Stratum IV

This stratum is about 7 cm in depth and is made up of a loosely compacted black, sandy silt with ash and 10% pea gravel. It only occurs in the northern two-thirds of Square A. Numerous pieces of fire cracked rock (23) were recovered, along with fish bone in large numbers. These bones

were especially prominent in the center of the unit. Fire reddening was also present in this stratum. Overall, it would appear as though this deposit built up inside a shallow depression, which is visible at the surface. Thus it seems to indicate some type of dug-out hearth feature.

Stratum V

This deposit was only found in Square B, directly below and in association with the stratum II deposit. It is a loam with 5% pebbles and 30% pea gravels. No fire-cracked rock was found, but some fish vertebrae were recovered along with one core. It is plausible that this is a localized floor deposit associated with the Stratum II roof deposits, but it does not run across the whole trench. Therefore it would either be a partial floor of a small house, or possibly some other type of structure.

Stratum VI

This stratum is found across Square B, and in the southern one-third of Square A. This deposit is an ashy-gravel sediment with 30% pebbles, 20% pea gravel, and 5% cobbles. Very little cultural material was uncovered from this layer. One flake was recovered from Square B, and one piece of fire cracked rock and one fish vertebrae were obtained from the Square A deposit. It would appear as though this was some sort of dump deposit. The stratum IV deposit in Square A seems to have truncated Layer VI, thus this deposit does not run the length of the unit.

Stratum VII

Stratum VII is a very dark brown silty layer with 50% gravel, 15% pebbles, and 2% cobbles. This layer was quite compact, yet not highly

compacted like some floor deposits. It was found across the entire trench, except for where it ran into the Stratum IX deposition in the southern portion of Square B. This stratum was quite thick, and went down to a maximum of 34 cm in some cases. A number of artifacts were recovered from this stratum, including basalt flakes, cores, preforms, a small bone bead, a large shell fragment, fish and mammal bone, one keyhole scraper, and a large quartzite core, or possibly a chopper, based on some use-wear traces. This chopper/core was found in a horizontal position at the bottom of Stratum VII in association with the top of the underlying Stratum IX. The keyhole scraper is diagnostic of the Plateau and Early Kamloops horizons. Thus, Stratum VII probably dates to this time period. The shell fragment does not appear to be local in origin, and it was probably traded in from outside the site catchment area. One of the important pieces of faunal remains uncovered was an almost complete deer scapula. This scapula was found *in situ,* in a vertical position. This bone was in association with a flat rock which was also inclined at a sharp angle. This situation probably indicates that this was a fill deposit, rather than a gradually accumulating horizontal stratum.

Thus, it would appear that Stratum VII was built up through a succession of dumping events. It may be the case that this small depression was used as a refuse area for nearby houses, possibly HP 5.

Stratum VIII

This stratum is quite problematical. It is described as light in color, medium in compaction, and high in gravel content. Even so, the color varies across the trench and gravel content seems to covary with color; the lighter the color, the more gravel. This stratum appears to lay mostly in Square B,

with only the southern third of Square A containing this deposit. Artifacts were scarce in this layer, with only a few flakes and some fish bone being recovered. Two exceptions to this rule are the recovery of one late Plateau or early Kamloops point, and the proximal end of a micro-blade. There was also one proximal section of a deer metatarsal near the floor of this stratum. Overall, this stratum is approximately 20 cm in depth, and seems to resemble a fill or dump deposit.

This stratum is problematical due to the fact that while profiling the west wall, it was extremely difficult to isolate this stratum from Stratum VI where these make contact. It did appear to be slightly clearer in the east wall profile, thus the boundaries shown for this stratum on the profile are only tentative in nature. It may be that Stratum VI and VIII, which both have the appearance of dump deposits, are too difficult to separate in the profile. It may also be that these two stratums are in fact one, and that by splitting them we have caused the problematical situation to arise.

Stratum IX

Stratum IX is a mottled, silty-gravel deposit with 50% pea gravel, 10% pebbles, and 1% cobbles. Black charcoal stains are found throughout this layer, which runs almost the length of the trench. At its thickest, in the southern section of Square B near the rim, this stratum reaches a depth of 30 cm. At this point, the stratum rises up and follows the contour defined by the rim deposit. As one moves down in this deposit, the matrix changes slightly from a brown silty- gravel, to a light brown silty-gravel. Lithic, faunal, and organic material seem to occur throughout this deposit, with no apparent concentration areas existing.

Both basalt and quartz flakes were recovered from this stratum. Faunal material included fish, mammal, and shell. A group of bone fragments marked with striations were also uncovered from this stratum. They were found slightly underlying the large quartzite core/chopper uncovered at the bottom of Stratum VII. Due to the fact that one of these bone fragments shows a working edge, they probably belong to some form of bone tool. A small (10 cm) piece of burnt wood was also found in this general area.

A number of large rocks formed two separate features which lay horizontally on top of the Stratum IX deposit. One of these features, which was located approximately 50 cm back from the north end of Square B, was associated with fire reddening and ash. This feature intruded into the Layer IX deposition. The other feature, which was located about 80 cm north in Square B, seemed to be a retaining wall, although this is speculative due to the small area uncovered by the trench. It was made up of a number of larger rocks lying on top of one another directly inside the rim deposit.

Due to its compactness and thickness, coupled with its mottled nature, Stratum IX would seem to be a good candidate for a floor deposit. This idea is supported by numerous horizontal rocks and artifacts, which lay horizontally on or near its surface. No diagnostic artifacts were found in this stratum, making it difficult to date this stratum accurately. It would appear, based on findings in overlying strata, that this is minimally late Plateau or early Kamloops in date and may be earlier.

Stratum X

This stratum is made up of a very dark grayish brown silt with 40% pea gravel, 20% pebbles, and 1% cobbles. This Stratum was found mainly in

Square A, and only intruded about 30 cm into Square B. The layer reached its deepest (4 cm) near the border of Squares A and B. Overall it was a semi-compact, sterile deposit. Based on the fact that it was not highly consolidated, it appears to be some form of sterile fill or dump. Sterile till was found directly below this deposit.

Stratum XI

This stratum is made up of a black, extremely silty deposit with 5% cobbles, 50% pea gravel, and 10% pebbles. Large amounts of ash are present throughout this layer, giving it a gray to light gray tint, depending on the locale. The stratum itself is highly compact, and reaches a maximum depth of 6 cm. It is found mainly in Square B, where it runs from approximately 90 cm north to the northern border of the square. It only intrudes about 40 cm into Square A.

Two basalt flakes and a number of fish bones were recovered from this deposit. The fire reddening, which was found in the overlying Stratum IX, also occurs in this stratum in association with a very white ash. Three small, irregular depressions (about 20–30 cm in diameter and 5-7 cm deep) were also found in association with this stratum. These depressions appear to have been dug into sterile till from the Layer XI occupation zone.

Initially, it was thought that this was a floor deposit. Excavations proved that its extent was too small to be a house floor, and for this reason, coupled with the large amount of ash in the deposit, this surface would appear to be a hearth feature. Based on the compactness of the layer, it would seem that most of these deposits do not constitute the hearth itself, but an area directly associated with a hearth. The fire reddening and white ash may be a

portion of the actual hearth, which was the central feature during the occupation period.

Stratum XII

This stratum was located in the area between 0 cm north and 80 cm north in Square B. The matrix is a dark yellowish brown sandy silt with 30% pea gravel, 20% pebbles, and 10% cobbles. This deposit was not highly consolidated. The layer reached a depth of 34 cm before turning to compact sterile till. Stratum XII was sterile throughout. It would appear as though this deposit was formed when sterile material was re-deposited to form the house rim.

Excavation

Housepit 47 excavations unveiled a very complicated sequence of events. It would appear that this house feature was utilized for a number of distinct cultural activities. Initially, the housepit area was the scene of a hearth feature and associated deposits (Stratum XI). Although no diagnostic artifacts were found in this stratum, based on its depth below later diagnostics, it would seem possibly to be in the late Shuswap-early Plateau time period.

The next event which occurs in this depression, is the dumping of the sterile Stratum X deposits. The origin of these deposits is unknown at this time. At this point, the ground appears to have been quite level in nature. After this, the construction of the housepit feature took place, with sterile till used to form the house rim (Stratum XII). In association with this, Stratum IX was deposited as a house floor. One problem with this construct is that no outstanding roof deposits were discovered during excavation. It may be that

in these earlier times, little or no soil was placed on the mat or bark covered roofs; or it is possible that the Strata VII and VI deposits are actually roof material. Even so, strong evidence for roof deposits does not seem to be present. Thus we are basing our housepit interpretation primarily on the occurrence of a well defined rim deposit.

After the occupation of this depression as a house, it would appear that the area became a refuse or unwanted soil dump through Strata VII, VI, and VIII (that is, if these deposits do not appear to be roof related which is difficult to ascertain given the confusing depositional events). This may have occurred as larger houses, such as nearby HP 5, began to use the smaller house feature as a refuse area. In this interpretation, at least two thick layers of cultural debris were built up. Diagnostic artifacts indicate that this dumping was taking place during late Plateau and early Kamloops times.

After this, the housepit depression was the site for two separate cultural activities. In the Square A deposits, it would appear as though a hearth depression was dug down into the surface (Strata IV and VIII). The Stratum III deposits seem to have been deposited in the resulting depression through aeolian activity.

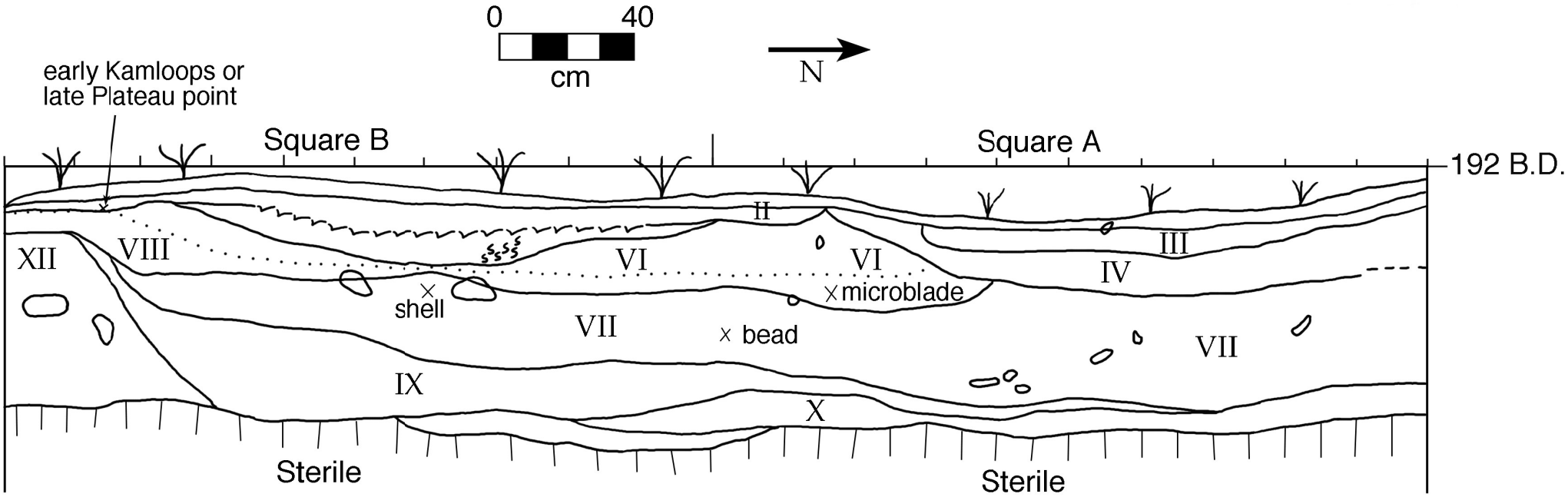
In Square B we find something different occurring. Stratum V is a possible floor deposit laying directly below Stratum II, which appears to be a roof deposit. There are two interpretations which come to mind at this time. Either this is an extremely small house, which seems somewhat unlikely, or it is some other type of small structure. Whatever the function of the structure, we are confident that it burned, or was burned, based on the extensive layer of burnt bark which is present on the bottom of Stratum II.

Overall, this excavation has shown us that this small pithouse has a very complicated history. It may be that many small housepits lose their role as habitations, and seem to take on the role of secondary activity sites as one moves closer to the late Plateau-early Kamloops time period. Whether this is a general pattern must be determined by further excavation in these smaller cultural units. When this is done, we can hope to gain a better understanding of the role these features played in the overall community schema.

Figures

Figure 1: Housepit 47 profile of west wall, Squares A and B.

Figure 1. Housepit 47 profile of west wall, Squares A and B.



Excavation Summary of Housepit 58

Brian Hayden

Housepit Location and Description

One of the goals of the 1988 field season at EeRl 7 was to test several smaller housepits in order to locate small structures suitable for excavation and for comparison to large housepits. Housepit 58 was one of the small housepits chosen for testing (This Volume, Preface, **Fig. 1**). While it appears that a clear, well defined burned horizon may represent a roof burning event, the underlying deposits are confused and may include post-occupational dumping episodes and long term accumulations thus minimizing the utility of the housepit for comparative purposes. This is not entirely surprising given the central location of this housepit in the site. A detailed discussion of the excavation results follows.

A housepit datum stake was established on the crest of the south rim and a 50 cm wide test trench laid out extending 4 m due north. Trench A consisted of the northernmost 2 m, trench B of the southernmost. A profile shows the constituent strata (**Fig. 1**).

Test Trench Excavation

Stratum I

This stratum consists of surface litter mat and sediments associated with post-depositional vegetation accumulations, such as humic loams.

Stratum II

Stratum II appears to be roof fill that is a gravel-enriched humic loam, similar in color to Stratum I. It overlies Stratum IV which represents a clear burn event.

Stratum III

This stratum consists of rim deposits which vary from unconsolidated ashy, gravelly silts, to almost pure gravels thrown up from the first housepit construction events. A Plateau horizon projectile point was recovered from the top of the rim deposits.

Stratum IV

Stratum IV consisted largely of a thick layer of burned beams and charred slabs of pine bark extending from the edge of the rim almost to the center of the housepit. Charcoal rich loam and fire-reddened earth also form part of this stratum. The most parsimonious explanation of this stratum is that it represents a bark covered roof of some sort that burned and collapsed.

Stratum V

Stratum V is one of the more enigmatic strata encountered at the site. It appears ash-gray but given the occurrence of gravels, is probably composed of ash mixed with other sediments. There is an exceptionally high concentration of broken mammal bone in this deposit, most of it unburned. This bone deposit represents one of the highest concentrations of mammalian remains anywhere in the site. There are very few lithics. In this respect, it is not dissimilar to the ash deposit in HP 104 although bones in

those deposits were calcined and smaller fragments. Stratum V in HP 58 forms a pronounced mound in Square A and gradually lenses out to the north and south (**Fig. 1**). Both the form of this deposit and its contents indicate that it should probably be viewed as a dumping event constituting hearth cleaning and eating refuse. It seems unlikely that such dumping would have been created by HP 58 residents since the dump is centrally located and of large dimensions. Rather, this dump makes more sense as material that was dumped through the smoke hole of HP 58 after it had been abandoned, but while the roof was still standing. Presumably, the ash and waste bone that form Stratum V originated from a nearby housepit and the dump continued to be used for at least one season given its volume. Shortly after the deposition of Stratum V, the abandoned HP 58 roof was burned.

Stratum VI

This stratum consists of darker, silty loam deposits which occur as a local lens in Square B underlying the burned roof layer. This stratum was originally thought to represent a floor deposit, given a high concentration of bone, lithics, and even fir needles near the rim. However, the restricted occurrence of Stratum VI makes this seem somewhat questionable. It may simply represent a local infilled depression.

Stratum VII

Stratum VII is also enigmatic in that it represents an extraordinarily deep deposit of hard, compact silts with about 10–20% gravels containing scattered flakes (although very little bone or charcoal of fire cracked rock) throughout its thickness. It is very homogeneous in character. Excavation

had to be terminated at a depth of 60 cm in this stratum, due to termination of the field season. Small flecks of carbonate may indicate a fairly early late Prehistoric or even middle Prehistoric origin of this stratum. However, no floors could be discerned, not even at the contact with stratum V, which was clearly dumped *onto* the top of stratum VII. Nevertheless, the top of stratum VII may have served as a floor prior to abandonment since few artifacts are found in the central areas of other housepits (e.g., HP 7) and they may not have accumulated in the centers of smaller housepit floors either. It may simply have been an aggrading surface used over a long period of time, or a deep housepit that continually was filled by accreting sediments.

Features

A possible post or roof-beam emplacement was noted on the upper part of the rim.

A pit feature of undetermined proportions was partly exposed in the west wall of Square B, and seems to have only been partly filled at the time the roof was burned and collapsed, for Stratum IV follows the general contour of this pit. No use can be proposed for this pit at this point.

Another possible large pit feature was just beginning to be exposed in the north end of Square A when the field season ended and the excavation had to be abandoned. This probable pit feature was cut into Stratum VII and was much darker, softer, more humic, and more hydrophyllic than Stratum VII, although the contact between the two was very diffuse. This may have been a storage pit.

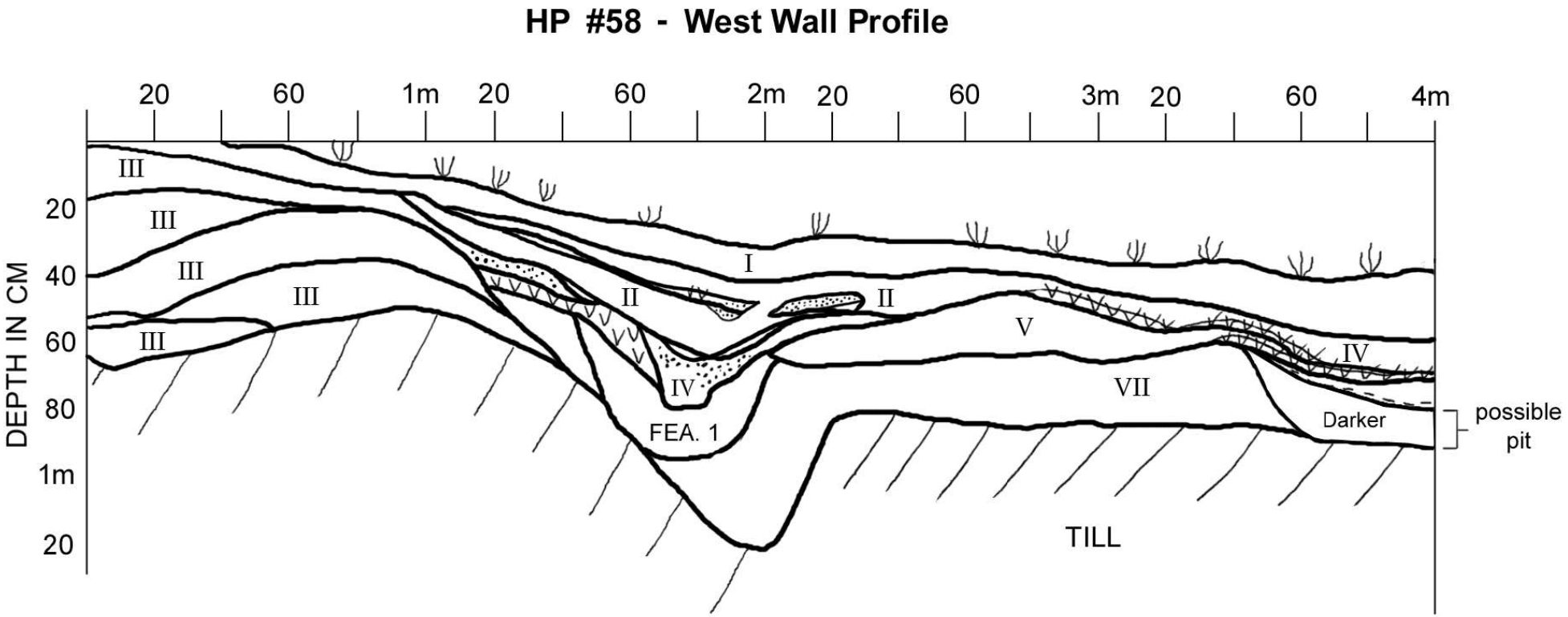
Excavation Summary and Conclusions

Although it is difficult to define a clear "floor" deposit in HP 58, its excavation has provided the clearest evidence to date for the dumping of ash and broken mammal bone (sometimes burned) from one housepit in places other than the deposits immediately associated with the same housepit. In this case, an abandoned housepit appears to have been used. This housepit also provides abundant evidence for pine bark being used as roofing material. Lack of clearly defined floor deposits does not make this housepit very useful for the overall goals of the project. However, the unusually deep, homogenous cultural deposits below the inferred living surface may contain some relatively early cultural remains.

Figures

Figure 1: Housepit 58 west wall profile.

Figure 1. Housepit 58 west wall profile.



Housepit 101 Excavation Results

Mike K. Rousseau

Housepit Location and Description

Housepit 101 is located on the western edge of the main site area at the base of a terrace slope about 40 m south of HP 1 (Vol. III, Preface, **Fig.1**). It measures ca. 8.0 m north-south by 7.5 m east-west, and its surficial rim to basin depth is about 1.25 m. Surficially, the house depression is circular in plan and has a bowl-shaped cross-section with fairly steep walls. The rim is fairly well defined, particularly along its northern and southern sections where it is shared with the rims of HP's 98 and 100. Pot hunting activity has been fairly extensive on the eastern edge of the house floor where a large cavity measuring about 1.5 m north-south by 1.0 m east-west by 0.5 m below surface has been dug. Some minor pot hunting disturbance is also evident along the southern edge of the house floor.

Test Trench Excavation Results

Two test excavation units measuring 2.0 m long by 0.5 m wide were dug into the southwestern section of the house floor (**Fig. 1**). The northern unit was designated Square A, the southern one Square B. Together they formed a test trench measuring 4.0 m north-south by 0.5 m wide extending from the central floor area of the house to its southern rim. Cultural deposits were encountered to a depth of about 1.0 m below surface, and at least three occupation episodes were identified. A total of eleven discrete stratigraphic units were observed and defined in the test trench. In general, the stratigraphic structure of HP 101 is considered to be fairly complex, and it was difficult to accurately interpret on the basis of the test trench

excavations alone. Therefore, excavations were extended somewhat to reveal the Kamloops horizon house floor occupation.

Stratum I

Stratum I was encountered primarily in the southern half of the test trench (Sq. B) between about 0 and 20 cm below surface (BS). It is a moderately compact, medium brown (10 YR 4/2) sandy silt with about 5% granules, 5% pebbles, and the occasional cobble. Cultural materials in this stratum consisted primarily of small scattered bits of charcoal, a moderate amount of fire cracked rock (FCR), several lithic waste flakes, and a few small bone fragments. It represents post-abandonment deposits comprised of a mix of fluvial slopewash sediments derived from the slope to the west and eroded upper roof deposits relating the last occupation of the house.

Stratum II

Stratum II was encountered in all of Square A and the northern end of Square B between about 0 and 30 cm BS. It is comprised of a moderately compact, very well sorted, light brown (10 YR 5/3) sandy silt with about 2% granules, 2% pebbles, and 1% cobbles. Stratum II lies beneath Stratum I near the juncture of Square A and Square B, indicating that its initial deposition predates that of Stratum I. However, an apparent mixing of these two stratigraphic units is evident between about 0 and 10 cm BS in the southern end of Square A, which suggests that deposition of Stratum I and the upper portions of Stratum II were probably concurrent. Only a few small flakes were recovered from Stratum II, indicating that it represents post-abandonment fluvially deposited sands and silts derived from the terrace slope to the northwest.

Stratum III

Stratum III was encountered only within Square B between about 12 and 35 cm. BS. It consists of a moderately compact, medium gray brown (10 YR 3/2) sandy silt with about 15% granules, 10% pebbles, and 5% cobbles. It contained a moderate amount of FCR, several complete and fragmented mammal bones, a few salmon bones, numerous lithic waste flakes, a white chalcedony graver, and some scattered pieces of burnt wood and charcoal. The positioning and content of the stratum suggest that it is a mixture of roof and rim deposits associated with the southern edge of the house. Strata IIIa and IIIb are comprised primarily of typical Stratum III deposits, however, they contain greater concentrations of charcoal and burnt soil at the very edge of the house roof.

Stratum IV

Stratum IV was encountered in the central aspect of Square B between about 30 and 50 cm BS. It consists of a fairly compact, medium gray brown (10 YR 3/2) sandy silt with 15% granules, 5% pebbles, and 5% cobbles. Cultural materials included a moderate amount of complete and fragmented mammal and fish remains, scattered chunks and bits of charcoal, several flakes, and a complete Kamloops side-notched projectile point at 160 cm north; 48 cm east; and 40 cm BS. The nature and positioning of Stratum IV suggests that it represents fairly thick roof deposits at the southern edge of the most recent house occupation. The projectile point suggests affiliation with the Kamloops horizon (ca. 1,200–200 BP).

Stratum V

Stratum V was divided into four sub-strata on the basis of differences in color, texture, and content. All four strata are present within Square A, and represent deposits associated with the most recent Kamloops horizon occupation of the house.

Sub-stratum Va

Sub-stratum Va is a moderately compact, medium gray (10 YR 4/2) sandy silt with 5% granules, 5% pebbles, and 2% cobbles lying between about 30 and 35 cm BS. Cultural materials are relatively sparse in this sub-stratum, consisting primarily of lithic waste flakes. It represents a mixture of slopewash deposits (Stratum II) and upper roof deposits (Sub-stratum Vb) related to the last occupation of the house.

Sub-stratum Vb

Sub-stratum Vb is a very loose, light orange brown (5 YR 5/8) sandy ashy silt with 2% granules and 2% pebbles lying between about 35 and 40 cm BS. It contains scattered charcoal and was associated with several large burnt and partially charred beams and branches, a mammal bone fragment, a few flakes, and a sandstone abrader. It represents part of the upper portion of the roof deposits relating to the last house occupation. The color of this sub-stratum indicates that burning occurred, but the nature of this burning is not entirely clear. Perhaps it relates to organic materials being trapped between this sub-stratum and sub-stratum Va above it.

Sub-stratum Vc

Sub-stratum Vc is a moderately loose, medium gray brown (10 YR 3/2) sandy silt with 10% granules, 5% pebbles and 5% cobbles lying between

about 40 and 50 cm BS. It contained scattered bits and chunks of charcoal, burnt beams and twigs (particularly in the northern end of the square), and the occasional flake. It represents mid-roof fill associated with the last occupation of the house.

Sub-stratum Vd

Sub-stratum Vd is a very loose thin black (10 YR 2/1) burned and charred organic layer lying between about 50 and 53 cm BS. It contains a very high incidence of carbonized bark (birch and pine), wood, twigs, and pine needles. It represents the bottom of the roof lying directly above the floor of the last occupation of the house.

Stratum VI

Stratum VI is a fairly compact, light gray (10 YR 5/2) sandy silt with 10% granules, 10% pebbles and 2% cobbles. It is represented in all of Square A, and in the northern part of Square B between about 53 and 63 cm BS. It contained a high incidence of articulated and disarticulated fish remains, a moderate amount of mammal bone fragments, many lithic waste flakes, some scattered charcoal, and an artifact made from the distal tip of a deer antler tine. Stratum VI represents the floor deposits associated with the most recent Kamloops horizon occupation of the house.

Two post-holes were identified associated with this stratum. One measuring approximately 17 cm. in diameter was identified at the northern end of Square A that contained rotted wood (sample taken) that extended into Stratum VII deposits about 20 cm. The second post hole measuring about 15 cm diameter was intersected by the west wall of Square A at about

75 cm north (**Fig. 1**), and it extended into Stratum VII and Stratum VIII about 20 cm.

Stratum VII

Stratum VII is a moderately loose, medium gray brown (10 YR 3/2) sandy silt with 10% granules, 5% pebbles, 5% cobbles, and 2% small boulders. It occupies all of Square A and the northern half of Square B. It contained a moderate amount of fish and animal bone, a few flakes, and some scattered charcoal. A small U-shaped pit lined with cobbles (Feature 2) measuring about 22 cm in diameter was associated with the bottom of this stratum at about 55 cm BS. It extended into underlying Strata VIII and IX deposits about 30 cm. The exact function of the feature could not be determined, but it may be a large post- hole. The large cobbles and small boulders may have been used to steady a vertical post in place.

Although it is not certain, it appears that Stratum VII may be a floor deposit lying directly beneath the uppermost occupation floor represented by Stratum VI. There is no clear indication of a roof deposit between these two strata. The relative age of Stratum VII is not known, although a small corner-notched point recovered from the interface between Stratum VI and Stratum VII (see below) suggests a possible late Plateau horizon or early Kamloops horizon age.

Stratum VIII

Stratum VIII is a compact, light gray (10 YR 5/2) sandy loamy silt with 20% granules, 20 % pebbles, and 10% cobbles. It was encountered in both Squares A and B, but was thickest in Square B. A moderate density of cultural materials were secured from this stratum, and the nature of its

deposits (i.e., fairly coarse) suggest that it is roof fill associated with the initial occupation of the house. Stratum VIIIa is a thin, dark, organic rich, discontinuous stratum between Strata VIII and IX which is interpreted to be the lower organic component of the roof fill.

Stratum IX

Stratum IX is a very compact, light gray (10 YR 5/2) sandy loamy silt with 20% granules, 20% pebbles, and 10% cobbles. It extends throughout Square A and the northern half of Square B between about 75 and 95 cm BS. This stratum yielded a substantial quantity of cultural materials, including: a horn core from a mountain sheep at the northern end of Square A at a depth of about 85 cm BS; a stemmed lanceolate pink chalcedony biface at 125 cm north, 0 cm east, 76 cm BS; a light pink chalcedony multidirectional core at 125 cm north, 43 cm east, 80 cm BS; hundreds of pink chalcedony flakes associated with a shallow pit feature (Feature 1 [see below]) lying beneath the biface and core; several utilized and retouched flake tools made of pink chalcedony and chert; a basalt biface fragment; a sandstone abrader; an antler wedge from 18 cm north, 20 cm east, 78 cm BS; a flat mammal longbone shaft artifact with a perforation in one end from Feature 4; an elk canine pendant also from Feature 4; scattered fish and mammal bone remains throughout the stratum; a piece of freshwater mussel shell; many flakes; scattered charcoal, and; a few pieces of FCR. Bone artifacts are illustrated in Chapter 2 of this volume.

Three features and two post-holes were identified in the test trench in association with Stratum IX (Feature 2 is part of Stratum VII). Feature 1 is a shallow bowl-shaped pit identified at the southern edge of the initial house

floor (**Fig. 2**). It measures about 55 cm in diameter, and it extends about 15 cm into sterile below the average floor level. This pit contained hundreds of pink chalcedony and chert flakes (Fountain Valley source) such as were found throughout Stratum IX. It appears that this pit was intended as a disposal area or cache for these flakes, and it is part of Stratum VII.

Feature 3 is a U-shaped pit feature identified in the northern end of Square A. The remainder of this feature was intersected by the test trench. It appears to be about 30 cm in diameter, and extends down to a depth of 120 cm BS. Its bottom was filled with a dark gray brown sandy silt and several very large cobbles and small boulders. A sheep horn core (see Stratum IX) was recovered from the upper aspect of this pit. The function of this pit is not clear, although it may have been a small storage pit. It appears to have been dug into hearth dump Feature 4, which is in the same location, but is larger.

Feature 4 is interpreted to be a large hearth area or possibly a hearth refuse dump located in the northern quarter of Square A between about 100 and 120 cm BS. Pit Feature 3 was dug through it, suggesting that Feature 4 was constructed first. Feature 4 is evident by a thick, somewhat basin-shaped lens of dark gray brown sandy ashy silt capped with a light orange brown sandy ashy silt. This feature contained assorted flake tools, an elk canine pendant, a flat mammal longbone artifact with a perforation in one end, some poorly preserved and partially charred mammal bone fragments, a piece of burnt bark, and several pieces of FCR.

Two post-holes were identified in Stratum IX of Square A. The first measures about 15 cm in diameter, and was intersected in half at about 145 cm north along the west wall. It extended about 30 cm into sterile till

deposits. The second post-hole was encountered at about 130 cm north and 25 cm east. It is about 10 cm in diameter and extends only about 5 cm into the sterile till.

In summary, Stratum IX clearly represents the initial or basal occupation of the housepit. Its relative age is unknown, however, the nature of its lithic assemblage and considerable depth below surface suggests possible affiliation with the Plateau horizon (ca. 2,400–1,200 BP), but this remains to be confirmed.

Stratum X

Stratum X is a moderately loose, light gray brown (10 YR 5/4) sandy silt with 15% granules, 10% pebbles, and 5% cobbles. It contained a moderate amount of lithic waste flakes, several mammal bone fragments and fish bones, a basalt uniface, and some scattered charcoal. It represents typical rim deposits composed of refuse, roof material, and redeposited till associated with the uppermost occupation of the house.

Stratum XI

Stratum XI is a compact, light gray brown (10 YR 5/4) sandy clayey silt with 10% granules, 5% pebbles, and 5% cobbles. It contained very little cultural material and represents a mixture of Stratum X rim spoil deposits and sterile glacial till initially dug from the center of the housepit.

Square A Excavation Results

The test trench excavations at HP 101 were expanded in Square A in order to secure a larger sample of the uppermost Kamloops horizon occupation represented in Stratum VI. The test trench encompassed

subsquares 1, 5, 9, and 13. Subsquares 2, 3, 6, 7, 10, 11, 14, and 15 were excavated following typical detailed subsquare excavation methodology procedures, however, only Strata I to VI were removed. The previous recovery of a Kamloops horizon projectile point from Square B at 40 cm BS suggested that the floor zone represented in Stratum VI should relate to the same relative time (ca. 1,200-200 BP). The descriptions for the strata represented in the subsquares of Square A are the same as provided for those indicated for the test trench profile (see above).

Stratum II contained only a few small lithic waste flakes that had become incorporated in post-occupational slopewash sediments from the northwest. They have no cultural significance with respect to housepit occupation.

In Subsquares 2, 6, 10, and 14, Stratum V was excavated by removing each of the four sub-strata identified within it. For Subsquares 3, 7, 11, and 15 they were far less distinct, and these roof deposits were excavated according to standard subsquare excavation procedures (i.e., upper 5 cm, mid-roof, lower 5 cm). Several interesting and important artifacts and features were encountered in the Stratum V roof zone deposits. These include:

(1) a vertical roof support post measuring 18 cm in diameter found in Subsquare 2 that was charred on top and whose rotted lower portion extended 27 cm below the roof into underlying Strata VI and VII;

(2) a smaller post from Subsquare 6 measuring about 10 cm in diameter with one charred end displaying probable adze cut-marks;

(3) a large spall tool from the interface of Strata Vb and Vc from Subsquare 6;

(4) a brown chert drill bit from Stratum Va of Subsquare 10, and;

(5) a triangular biface fragment from Subsquare 11 at 32 cm BS.

In addition, several utilized and retouched flakes, many lithic waste flakes, a moderate amount of mammal bone fragments, and the occasional fish bone was also recovered throughout Stratum V. Fire cracked rock was most commonly encountered in the upper roof deposits, particularly with Stratum Va. Charred, partially charred, and decaying wood and bark were encountered throughout all the roof deposits, however, the greatest density of charred organics were associated with Stratum Vd.

Stratum VI, representing the Kamloops horizon floor deposits also contained several noteworthy artifacts and features. The most salient aspect of the floor is that it contained a very high incidence of fish (salmon) remains scattered throughout the floor area, many of which were partially articulated. Complete and fragmented mammal bones were also found throughout the floor in variable densities. A Kamloops side-notched projectile point was recovered from the upper aspect of the stratum in Subsquare 6, indicating temporal affiliation with the Kamloops horizon. A small red chalcedony corner-notched point was found in the same subsquare at the interface between Strata VI and VII. It is not clear which of these floor zones the point originated from. If it was associated with Stratum VI, it is probable that the uppermost occupation relates temporally to the early Kamloops horizon (ca. 1,200–1,000 BP). A human tooth (1st or 2nd molar) was recovered from Subsquare 14. A post-hole measuring about 18 cm diameter was also observed in Subsquare 3 which was immediately beside

the partially preserved charred post encountered in the roof deposits (Stratum V) discussed above. In addition, two articulated valves of a freshwater mussel were found in Subsquare 15.

Excavation Summary and Conclusions

Trench excavations and detailed excavations within HP 101 revealed that this small housepit contained at least three major occupation episodes. The initial occupation of the house (Stratum IX) is very strongly represented artifactually, however, it lacks clear stratigraphic definition throughout most of the excavated areas. The temporal affiliation of this floor could not be determined, however, it may belong to the Plateau horizon (ca. 2,400-1,200 BP) on the basis of the high preponderance of exotic lithics and depth of cultural deposits.

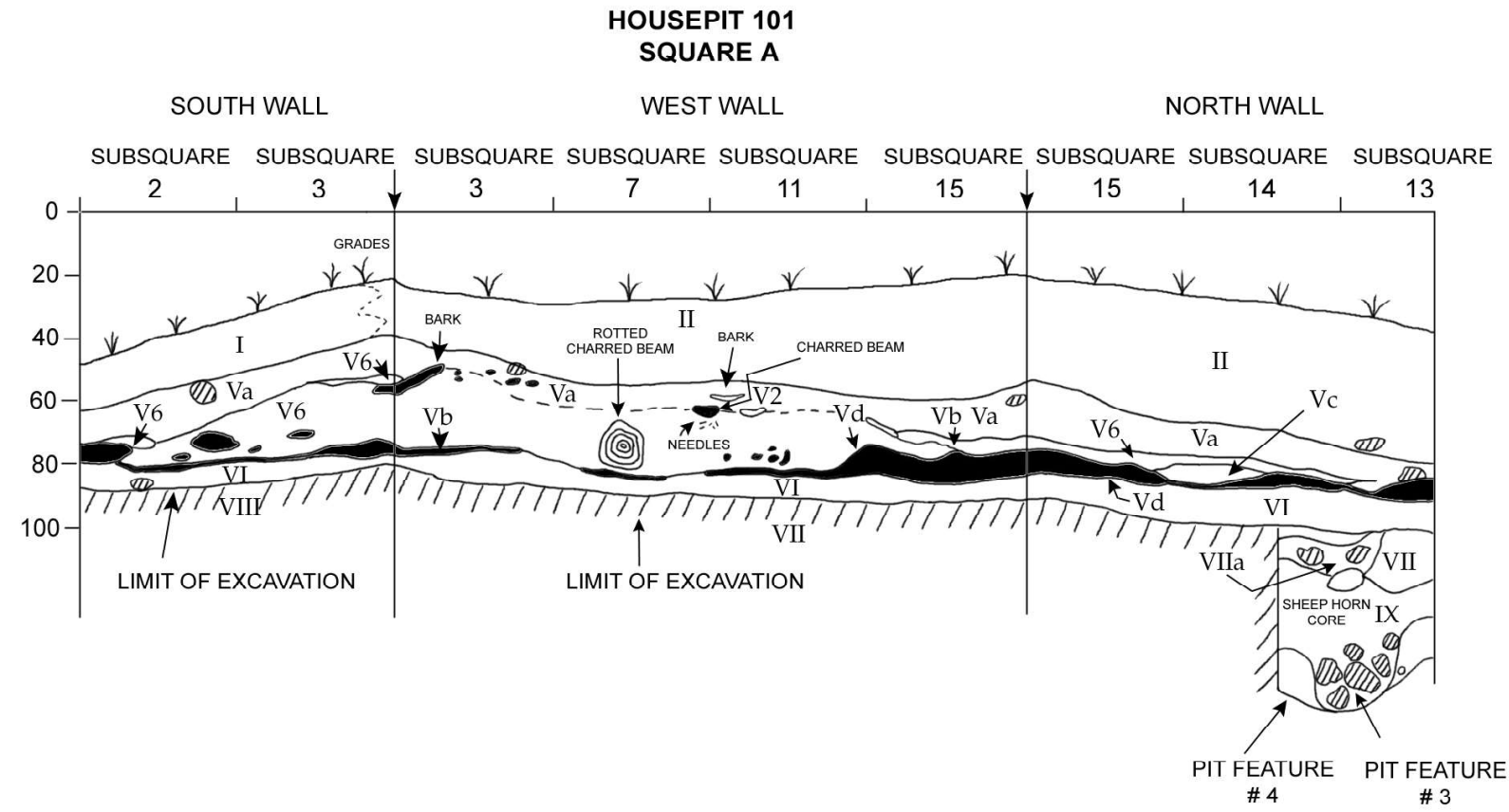
The second occupation (Stratum VII) is not very strongly represented, and appears to have been brief. Its relative age is uncertain. The recovery of two Kamloops side-notched projectile points from the uppermost occupation, represented by Stratum VI, indicates an affiliation with the Kamloops horizon (ca. 1,200–200 BP). Detailed excavations of this occupation indicated that fish (salmon) and mammals (probably deer) were consumed in relative abundance. Charred and rotted roof elements, one of which bears evidence of probable adze modification suggest a substantial roof structure such as that observed during the ethnographic period.

Figure Captions

Figure 1: Housepit 101 test trench west wall profile.

Figure 2: Housepit 101, Square A, Stratum VI floor and profile

Figure 1. Housepit 101 test trench west wall profile.



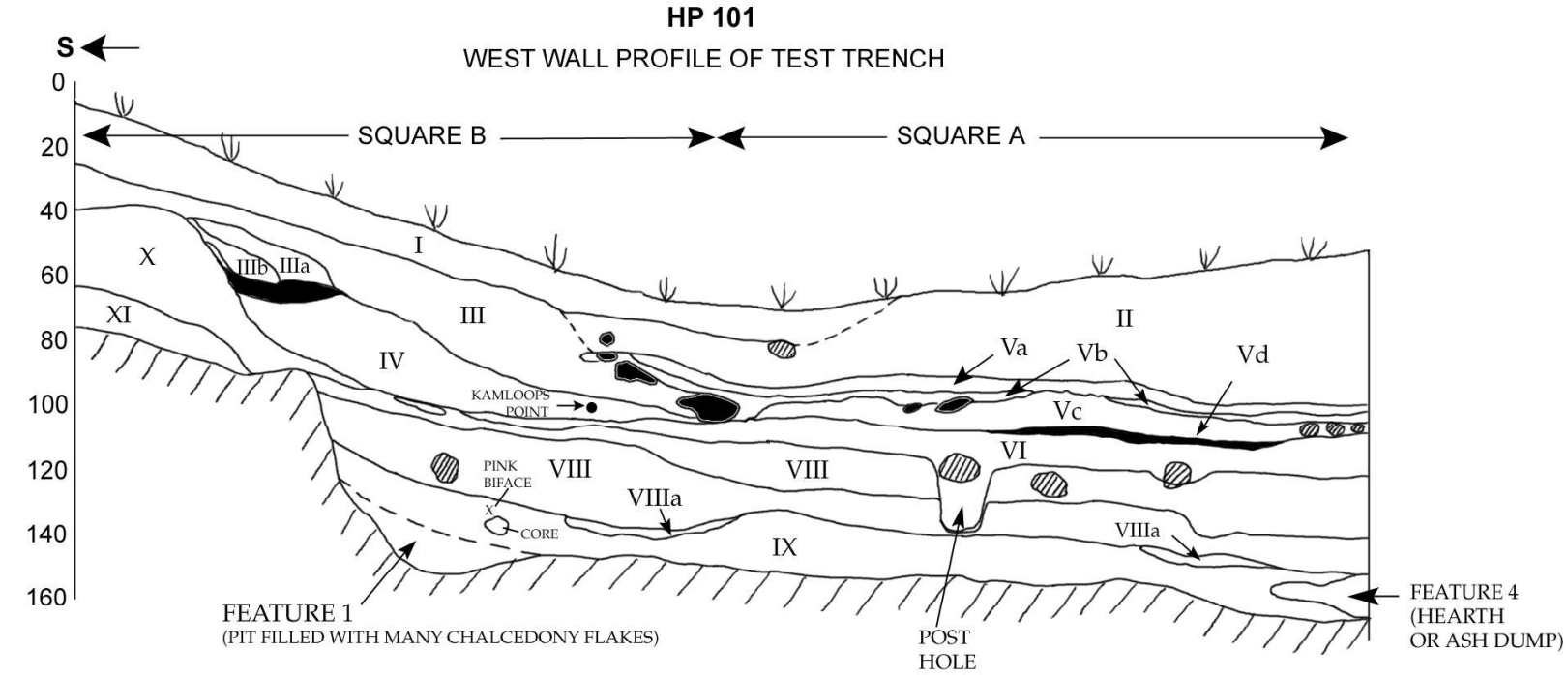
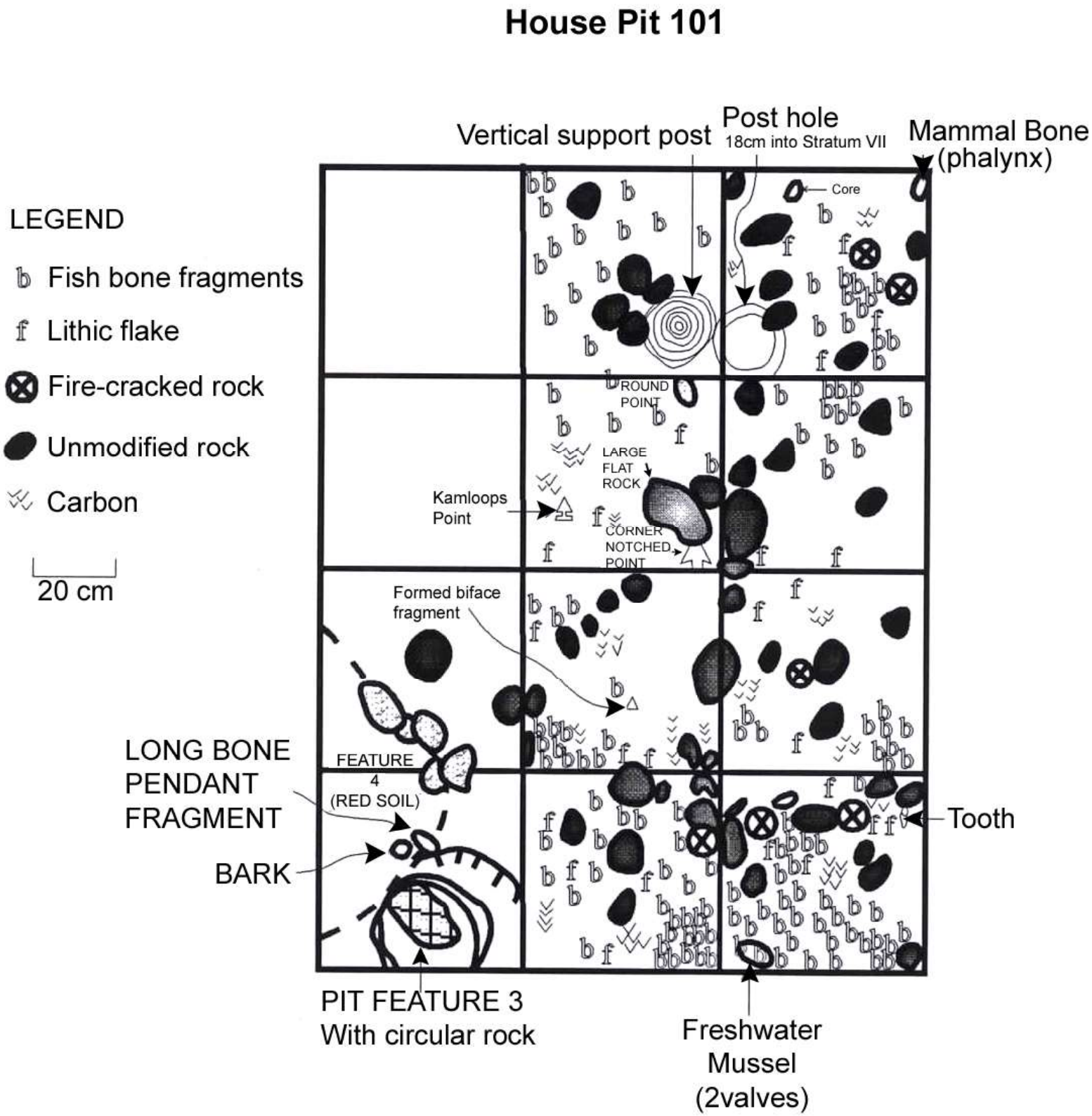


Figure 2. Housepit 101, Square A, Stratum VI floor and profile.



Excavations at Housepit 104

Brian Hayden

Housepit 104 was selected for testing and subsequent expanded excavation because of its unusual location on a small terrace remnant (Terrace 2) 40 m above the main part of the site (see Vol. III, Preface, **Figs. 1 and 2**). I suspected that one reason for the remote and isolated location of this and two other adjacent housepits (HP 105 and 106) was that they might have been used as special purpose structures such as shamanic lodges, women's seclusion structures, or secret society ritual and feasting structures. However, no such structures have ever been reported in the archaeological literature of the Plateau and ethnographers have not recorded the kinds of material culture associated with them. Thus, I had no definite expectations as to precisely how such special structures might differ from ordinary residences or how specialized structures might be recognized. However, I assumed that there should be some differences in the nature of food remains, stone tools, and perhaps features that would indicate unusual activities. A limited comparison of HP 104 remains with cases from other parts of the world that have been interpreted as ritual or feasting loci will be presented in the discussion part of this chapter.

Housepit 104 is a relatively small structure, measuring only about 7 m in diameter (**Fig. 1**). It is less than 10 m from HP 106 to the south and appears to have been occupied at the same time. Housepit 104 may have been re-roofed once or even twice with some minor architectural modifications, whereas HP 106 appears to have been roofed only once. Both structures are Protohistoric. The HP 104 floor was dated at 250 +/- 60 BP, while the HP 106 floor was dated to 220 +/- 70 BP. When it was realized

that these structures were not contemporaneous with the occupation of the core of Keatley Creek further excavations were suspended since it did not seem that these structures could appreciably contribute to the understanding of the social or political organization of the Classic Lillooet occupation of the site. These structures, are nevertheless of considerable importance since strong arguments can be advanced that they are, in fact, special ritual/feasting structures used in Protohistoric times, perhaps comparable to the specialized ritual compounds and structures of the New Guinea Highlands located in places remote from residential villages (Hampton 1999). If this is indeed the case, it would provide important new insights into Protohistoric sociopolitical organization on the Plateau.

Housepit 104 was tested in 1988 with a 50 cm wide trench in Squares A and B. More extensive excavations took place from 1994-1996. The original strata designations in Squares A and B were internally inconsistent (**Fig. 2**). Therefore, modified and simplified strata designations and descriptions were developed during the more extensive excavations. Every effort was made to conserve as much of the original stratigraphic system as possible.

Stratagraphic Descriptions

Stratum I: Stratum I (**Fig. 2**) is a typical surface loam, dark in color with low pebble and cobble frequencies (<10%).

Strata II and III: Both of these strata appear to be localized deposits relating to the Feature 1 hearth, either as fill or dumped material from the hearth. Both are rich in organics and bone, especially calcined bone. Stratum II is yellowish red (5 YR 4/6), while Stratum III grades from a light

gray ash (10 YR 7/2) to an almost black ash and charcoal enriched material extending almost to the surface.

Stratum IV: This stratum is unsorted glacial material with no cultural material.

Strata V and VI: These appear to be localized variations within the general roof deposits (Stratum VII), and have been subsumed under Stratum VII.

Stratum VII: This is roof deposit material. It is quite variable in places, ranging from unaltered redeposited till to dark gray (10 YR 4/1) or pale brown (10 YR 6/3) gravelly loams (up to 50% pebbles and 30% gravels) with pieces of burned charcoal (presumably from the burning of the roof). In the south portion of the roof that we sampled, there were a number of ashy deposits that looked like hearth cleaning dumps. Some areas of the roof are relatively rich in artifactual material including FCR, charcoal, flakes, and bones all mixed throughout. The fact that artifactual material is not restricted to the top of the roof deposits seems to indicate that the roof was replaced at least once. Detailed stratigraphy near the eastern walls in Square G indicate that there were at least 3 separate roof burning episodes.

Stratum VIII: This is identified as a floor deposit. It rests on sterile till and generally contains considerable amounts of bone, but few lithics (as might be expected of a Protohistoric occupation). It is generally a compact silty loam and is quite dark gray (10 YR 3/1) near the central hearth (Feature 1) but is underlain by a light tan silty floor in some places. These appear to be the remains of loessic material brought into the structure immediately after construction in order to render the floor softer. Traces of this loam flooring were observed in many places, but were especially obvious near the east wall in Square G where 2-3 cm of clean tan loam occurred between two

superimposed floor surfaces (**Fig. 2**). Pebbles tend to be infrequent (about 1-15% of the matrix). In some areas of the floor (notably Sq. A), charcoal twigs and small branches together with pine bark and bones were incorporated into floor deposits under charred roof beams and rested directly on sterile till. How and why these elements were incorporated into floor deposits is enigmatic. It is also worth noting that parts of the floor of Square A were littered with charcoal remains under collapsed roof beams as though there may have been some kind of simple furniture, planking, or wood construction in this area. Other areas were notable for their thin lenses of gray ash under floor deposits. A relatively thick layer of carbonized grass covered the floor deposits along the lower southern wall (**Fig. 3--**Sq. C, Ssq.'s 13, 14).

There were numerous dumps near the walls, perhaps located originally underneath benches. In some cases, these dumps were covered with fir needles and had rubified surfaces clearly indicating their association with the floor rather than roof deposits. These dumps varied in composition from almost pure organic/fine charcoal soft sterile deposits, to tan loams, to pebble dumps full of bones, birch bark, pine bark, fir needles, and lithics all with relatively random dips indicating their dumping contexts.

Stratum IX: This stratum appears to be a brown color variant of the floor deposits (Stratum VIII). At least in Square F, this deposit appeared to be floor dump material possibly accumulated or deposited under benches.

Features

Feature 1: Feature 1 (**Fig. 3 & 4**) can be described as an accumulation of pulverized charcoal and ash with much fish and mammal bone (over 260 unidentifiable mammal bone fragments all burned and mostly calcined)

associated with it. The feature is roughly circular and appears on the surface of the ground as a slight depression. The excavated portion was 105 cm across and 20 cm deep at the center. The shallow, surficial depression may be evidence of the subsidence of unconsolidated sediments, or the dissolution of ash contents over time, or more probably of an intrusive, post-collapse origin that was unassociated with the main occupation of the structure. The hearth is uncharacteristic of other hearths in the housepits at Keatley Creek in terms of its high ash content (perhaps a function of the ash having been leached out of the older housepit deposits), in terms of its high bone content with high proportions of calcined bones, and in terms of its shallow depth from the existing surface. Careful subsequent excavation of remaining portions of this hearth in 1995 seemed to indicate that dense concentrations of largely calcined bone actually cut through floor deposits (Stratum VIII), thus indicating a post-collapse intrusive origin for this feature. However, burned bones as well as ash and rubified floor deposits were also found in good floor deposit contexts concentrated in the vicinity of Feature 1, raising the possibility that a hearth feature was also present in that location on the floor during the occupation of the structure. Thus, it seems possible that the exact same location (the center of the house depression) was subsequently used after the structure collapsed for another hearth by a hunting party. This would be an unusual coincidence, but the extension of hearth remains almost to the surface and the surface depression of this hearth give the impression of possible post-collapse use. In any event, it seems probable that a hearth was in use at this location during the occupation. This is an unusual feature at the site and may relate to the special use status of this structure. Ethnographically, when women were secluded in special structures, they were prohibited from eating meat.

Therefore, this structure is unlikely to have served as a women's seclusion structure.

Feature 2: This pit feature was unusual in shape, location, and content. Only half or less of the feature was excavated (in Sq. A, Ssq.'s 13 and 14; in Sq. G, Ssq. 16), and it appeared to abut the eastern wall of the housepit in Square G. Feature 2 appears oblong (about 130 x 40 cm--**Fig. 5**) and only about 20 cm deep (**Fig. 2**). It was composed of two distinctive fill units, one containing a large slab of pine bark (26 x 6 cm). A long spatulate bone object with an "x" lightly incised was recovered from the bottom of the pit, while a broken lahal gaming bone was found in the topmost fill. These objects may indicate that the pit was used for the storage of various kinds of paraphernalia. There were no lithics, although 3 fish heads were recovered from the lower fill unit, so that some fish parts may have also been stored in the pit. The emphasis on fish heads is interesting and parallels similar occurrences in HP's 9 and 105—also suspected to have special ritual roles.

Feature 3: This is a shallow basin in Subsquares 13 and 14 of Square C that seems to have been used as a garbage dump prior to housepit abandonment (**Fig. 6**). Rock, some bone, and dirt seem to have been thrown in the depression and piled up against the wall to a height of about 10 cm above floor level. The fill was very loose and unconsolidated, and it contained very little cultural material (one flake, 64 bone fragments [including a deer manidble], and no FCR), although there was a dense concentration of fir needles in the northern half of the depression. The intended use of this depression is problematical.

Postholes and Structural Remains

There were 5 major postholes excavated in HP 104 and most of them contained the remains of a burned post in situ. This was unusual for housepits at Keatley Creek. In most cases, it was clear that the useful posts had been removed prior to burning the roof superstructure. Moreover, the positioning of three of these posts near the housepit walls is very unusual for such a small structure. It may be possible that extra reinforcing was used for this structure due to heavy use of the smoke hole entrance rather than a side entrance.

While there were considerable sections of charred beams from the burned superstructure recovered from the floor contact and lower roof deposits, not enough area of HP 104 was excavated to make a clear-cut architectural pattern of the roof apparent. Pine bark and some cottonwood bark was found covering and underlying roof beams in several instances which is consistent with the general architectural model developed in Volume I. As in HP 106, we also recovered fairly good evidence that split poles and probably planks were used as roofing elements. Because these were likely more labor intensive to produce than using simple poles, these architectural features may reflect unusual labor investments in structures that could be expected with the construction of elite secret society lodges and shrines.

It might also be noted that there appears to be a remnant of an earlier roof collapse event that fills in an unusual concavity in the east wall (**Fig. 3**). It seems possible that there may have been a side entrance at this location for the initial construction of HP 104, but this entry may have been filled in with roof collapse during later re-roofing events.

Lithics

Because HP 104 was occupied during the Protohistoric period when some metal tools were probably available, we might expect significant differences between its stone tool assemblage and those that preceded it. However, the distinctive aspects of the lithic assemblage in HP 104 cannot easily be explained by the influence of metal tools alone. Heffner (Vol. II, Chap. 12) has carried out an analysis of the lithics from HP 104, and the modified tools do not seem substantially different from those in other housepits although the paucity of chipped stone in general may be an indication of the special ritual use of the structure, or alternatively of the effect of metal tools that might have been available. Excavators also noted a strong emphasis on billet flake debitage in many squares.

What is most distinctive, however, is the very high frequency of sandstone "abraders." We recovered far more fragments of sandstone abraders in HP 104 than from any other housepit at Keatley Creek. We also recovered 3 quite unique artifacts of sandstone including one or two fragments and one nearly complete example of sandstone "saws" (Vol. II, Chap. 13, Fig. 6B) which are generally attributed to working nephrite, as well as a unique thick bifacial sandstone grinding stone or abrader (Vol. II, Chap. 13, Fig. 6V) which may also have been used to grind nephrite. The large example of a sandstone saw may be the most complete specimen from the Plateau. I suspect that many of the fragmentary sandstone "abraders" were actually parts of sandstone saws or objects used to abrade nephrite. The unusual concentration of these tools in HP 104 seems to indicate an unusual emphasis on nephrite working in this structure, or some other similar specialized manufacturing activity. Paradoxically, we have no

nephrite debitage or other remains from our excavations, and we can only assume that individuals were being unusually tidy in their cleanup of nephrite debitage or perhaps that they were working other materials, although it is difficult to image what else would have required the use of sandstone saws. Abraders, of course, could be used for the production of bone tools such as the spatula and gaming piece described below.

We also recovered a unique projectile point from the HP 104 roof deposits (possibly associated with the post-collapse use of the Feature 1 hearth) that does not resemble any previous style in the region. This more or less bipointed projectile may be an attempt to replicate metal style arrowheads (see Vol. I, Chap. 3, Fig. 1). Other standard style Kamloops points were also recovered from HP 104.

Fauna

The faunal remains from HP 104 have been described in detail by Kusmer (Vol. I, Chap. 10, Appendix I). However, it is worth emphasizing some of her general conclusions. It is especially notable that Kusmer found that HP 104 has a much higher density of bones, particularly on the floor (by a factor of 10) than most of the other housepits at Keatley Creek. Many of these bones are also significantly larger than those in other housepits and there are articulated leg segments of deer and a number of articulated salmon vertebrae or heads or ribs. This reflects the subjective impression that excavators had of deer bones (especially leg and foot elements) on the floor being more frequently whole or minimally reduced when compared to other housepits. Articulated segments indicate that the bone remains were not heavily disturbed after deposition, and thus that use of the structure may not have been constant.

Two quite unusual bone artifacts were also excavated from the pit fill of Feature 2. One is a broken lahal gaming piece (possibly ivory), and the other is an enigmatic bone spatula (Vol. III, Chap. 2, **Fig**. **9**). A delicate, flat bone awl was also recovered from the floor of HP 104 and two dog coprolites were recovered from the floor dumps in Square A. This, too, is an unusual occurrence in Keatley Creek housepits, perhaps reflecting either the keeping or consumption of dogs in HP 104.

Basketry

A unique fragment of carbonized coiled basket was recovered from the floor deposits of HP 104 in Square A (**Fig. 3**). It is apparently the only reported archaeological occurrence of coiled basketry from the Canadian Plateau. Small wrapping fragments from what was probably a coiled basket were also recovered from a dump along the eastern wall (Sq. G, Ssq. 12).

Discussion

Housepit 104 is unique in many respects. Its location on Terrace 2 is an unusual location. It is very isolated and hidden in a very confined area with natural earth embankments around it. The central hearth, thick with gray ash and calcined bone fragments is unique at the site. Its lithic and faunal assemblages are unusual. The unique occurrences of sandstone saws and abundant remains of sandstone "abraders" attest to some kind of specialized activity, while the density and size of faunal remains is quite exceptional when compared with other housepits at Keatley Creek. The bone artifacts are unusual and include a fragment of a gaming piece and an

enigmatic spatulate piece. Moreover, there is a unique fragment of coiled basketry, and it seems that the structure was burned with all of its roof support posts in place. The roof supports seem to be unusually near the walls. This is unusual when compared to all other excavated burned housepits at the site where posts were generally removed prior to burning the roof superstructure. There is also a unique deposit of burned grass lying against the inner southern wall of the structure.

Although we have only excavated about a fourth of the total floor of HP 104, there are already enough distinctive features to make it clear that the structure was the locus of special kinds of activities, especially when compared to the virtually contemporaneous remains recovered from the adjacent HP 106 structure where very little of anything was left. What might the specialized activities in HP 104 have been?

Given the copious faunal remains associated with the structure, it seems highly dubious that this structure was a women's seclusion lodge or any kind of a women's ritual lodge. On the other hand, one might assume that sandstone saws for manufacturing nephrite adzes would have been used by males, as would lahal gaming pieces. Moreover, the high density of animal bones has been used as an important criterion for identifying feasting or high status areas elsewhere in North America and the world. Emphasis on limb elements of deer as choice cuts has also been interpreted as evidence for high status or feasting contexts (Welch and Scarry 1995:405; Cleland 1965; Jackson and Scott 1995; Bogan 1983; Junker et al. 1994:348). Ritual/feasting locations have also been identified on the basis of their isolated locations (Byrd 1994:657; Blackburn 1976), the low density of modified artifacts associated with them (Byrd 1994:656), the intentional

burning of structures (Wilshusen 1986; Byrd 1994:657) and architectural plans that create central spaces lacking support posts.

Given some of these observations, what I would like to suggest is that the unusual aspects of HP 104 can be explained in a coherent fashion if one assumes that the structure was used for secret society rituals and/or feasting. First of all, the remote location is what one would expect of secret society ritual/feasting structures. As Wason (1994:150-1) notes, social inequality in communities is often reflected in restricted ritual spaces used by small subgroups of communities. The remote location of HP 104 and its small size all indicate that the users would have been a select group and access restricted. Blackburn (1976:236) notes that the Chumash ?antap elite secret society structure shrines were often located on "hill-tops, promontories, or in other remote spots in which sacrifices of money, seeds, or down were made or ceremonies were held." The location of HP's 104, 105, and 106 certainly conform to this locational description. Moreover, assuming that there might have been a guardian of ritual structures or secret society meeting places, it is worth noting that Tlingit shamans lived in separate houses with a shrine in the forest near the village (Oberg 1973:19). This may be a parallel situation to the archaeological remains of HP 104 and 106 at Keatley Creek where a shaman attached to the elites of a powerful corporate group might have acted as guardian (living in HP 104) for their secret society shrine (HP 106). Other arrangements of highly sacred structures housing sacred stones or other items adjacent to other structures used for feasting and food preparation in areas far removed from residential villages have been documented in the New Guinea Highlands (Hampton 1999). This provides another model for the use of HP 104.

Second, the high density of bone remains makes sense in terms of feasting, especially if remains were left under benches. The low level of bone reduction and the articulated sections of artiodactyl legs and salmon are also consistent with feasting contexts since there is generally more waste in feasting contexts (Wilson and Rathje 2001) and one might expect that feasting structures would be used episodically so that discarded articulated segments would be less likely to become dispersed from activities within the structure. On the other hand, the intensely burned and fragmented bone remains associated with the central hearth (Feature 1), may well be viewed as ritual sacrifices of food remains, not unlike some of the ritual sacrifices of the Chumash which were intentionally stirred to maximize the destruction of items placed into firepits. In fact, Maxwell (n.d.) interprets a highly burned deposit of bone in the Chumash area as a deposit of ritually burned remains.

Third, the occurrence of a lahal gaming piece and unusually valuable coiled basketry fragments in a small housepit such as HP 104 is unexpected since these are usually items associated with high status individuals. On the other hand, if the periodic users of HP 104 were members of an elite secret society, such occurrences would make sense. In particular, Croes (1977:359) has argued that coiled baskets were wealth items that could be cut up and the parts distributed as potlatch gifts. This may well account for the occurrence of the coiled basket fragment on the HP 104 floor.

Fourth, the intentional burning of HP 104 and 106 may reflect the ritual use of these structures. The covering of the floor with fine tan loess may also be an indicator of ritual structures and high status structures since Al Mackie (Personal communication) recorded that loess "clay" was spread over structure floors that were used for dancing in the Interior. The use of split pole roofing and planks may also have been an indicator of higher

status or ritual use, especially in such a small structure. The architecture of this structure is also unusual in terms of the substantial peripheral posts near the walls which have no counterpart in any of the other excavated or tested structures at Keatley Creek. These posts near the walls may have provided extra reinforcement for a roof that supported more foot traffic than normal. Ordinarily, one would expect a structure of this size to be entered by a side entrance (Vol. II, Chap. 15). However, smokehole entrances were probably the preferred mode of entry in ritual structures, just as they were in northeast Asia.

Fifth, the rather unusual position of a central hearth (as in HP 9 and 107) may be indicative of a ritual structure. In the Levant, Bryd (1994:656) noted that one of the distinctive features of ritual structures at Beidha was their central and rimmed hearths. At Keatley Creek, no other structures have centrally located hearths except those that have other indications of ritual uses (HP's 9,104, and 107), and of these HP's 9 and 107 are the only examples at the site to have rock rims.

Sixth, although we did not encounter any unusually large storage pits within this small structure (as we did in HP's 9, 105, and 107), there are at least 3-4 very large storage pits on Terrace 2, in close proximity to the structures on this small terrace remnant. Thus, if large cache pits were being used at secret society shrines or custodian houses in order to store food reserves and ritual paraphernalia or other resources of the secret societies, the outside cache pits on Terrace 2 may have been serving this function, perhaps with the more valuable items stored in inside pits such as Feature 2. On the other hand, there may still be a large storage pit in the unexcavated portion of HP 104.

Seventh, the paucity of chipped stone tools may reflect the predominant use of HP 104 as a ritual and feasting structure, rather than a structure where normal domestic maintenance work was carried out.

Eighth, there is an unusual abundance of fir needles associated with many parts of the floor in HP 104, as well as thick grass coverings along the south wall. These are additional unique features of this structure at Keatley Creek and seem more consistent with special ritual coverings of floors with fir boughs and the padding of seating areas for greater comfort to an extent not generally taken in normal domestic structures, especially small structures of the poor.

Finally, the unusual importance and size of sandstone abraders and saws in the structure may either represent the occupational specialization (nephrite working) of its principal resident, his slave, or of activities of secret society members used to "while away" down time during their meetings. In the more remote Maya Highlands, it is extremely common to find municipal officials spending large parts of their slow days engaged in some relatively simple craft activity such as basket or bag making with local sisal fibers. Something similar may account for the unusual concentration of sandstone abraders in HP 104. In the Near East, at Hallan Cemi, Rosenberg and Davis (1992) have noted that the "public" architecture is associated with the manufacturing of prestige items such as copper and obsidian items.

Given all these observations, as well as unusual finds such as the dog coprolites, especially in conjunction with the dramatically different assemblage recovered from contemporaneous HP 106 only a few meters away, I feel that there is strong reason to propose that HP 104 was either the residence of a ritual (shamanic) guardian who hosted post-ritual feasts, or that the structure was simply used for feasting after the most important

secret society rituals that were held in HP 106. Such an interpretation would be bolstered by the discovery of other similar pairs of structures with similar characteristics. In fact, HP 9 and 107 appear to closely parallel the situation of HP 104 and 106. However, examples from other large sites on the Plateau would provide much greater support for this interpretation if they could be found.

References

Blackburn, T.

1976 Ceremonial Integration and Aboriginal Interaction in Aboriginal California. In L. Bean and T. Blackburn (Eds*.) Native Californians: A Theoretical Perspective*, pp. 225-244. Ballena Press, Ramona, CA.

Bogan, A.

1983 Evidence for Faunal Resource Partitioning in Eastern North American Chiefdoms. In J. Clutton-Brock and C. Grigson (Eds.) *Animals and Archaeology*, pp. 305-325. BAR International Series 163.

Byrd, Brian

1994 Public and Private, Domestic and Corporate: the emergence of the Southwest Asian village. *American Antiquity* 59(4):639-666.

Cleland, C.

1965 Appendix 2: Analysis of the Faunal Remains of the Fatherland Site. In Robert Neitzel (Ed.) Archaeology of the Fatherland Site. *Anthropological Papers of the American Museum of Natural History* 51(1): 96-101.

Croes, Dale Ross

1977 Basketry from the Ozette Village Archaeological Site: A technological, functional, and comparative study. PhD. Thesis, Department of Anthropology, Washington State University, Pullman.

Hampton, O. W.

1999 *Culture of Stone: Sacred and Profane uses of Stone among the Dani*. Texas A&M University Press, College Station.

Jackson, H., and S. Scott

1995 The Faunal Record of the Southeastern Elite: The Implications of Economy, Social Relations, and Ideology. *Southeastern Archaeology* 14:103-119.

Junker, Laura, Karen Mudar, and Marla Schwaller

1994 Social Stratification, Household Wealth, and Competitive Feasting in 15th/16th Century Philippine Chiefdoms. *Research in Economic Anthropology* 15: 307-358.

Maxwell, David

N.d. Using Faunal Remains to Recognize and Interpret Prehistoric Ceremonial Deposits: An Example from San Nicolas Island, California. Report on File with Statistical Research, Inc., Burnaby, B.C.

Oberg, Kalervo

1973 *The Social Organization of the Tlingit Indians*. University of Washington Press, Seattle.

Rosenberg, Michael, and Michael Davis

1992 Hallan Cemi Tepesi, an early aceramic Neolithic site in eastern Anatolia. *Anatolica* 18:1-18.

Wason, Paul

1994 *The Archaeology of Rank*. Cambridge University Press, Cambridge.

Welch, Paul, and Margaret Scarry

1995 Status-related variation in foodways in the Moundville Chiefdom. *American Antiquity* 60(3):397-419.

Wilshusen, Richard

1986 The Relationship Between Abandonment Mode and Ritual Use in Pueblo I Anasazi Protokivas. *Journal of Field Archaeology* 13: 245-264.

Wilson, and Rathje

2001 Garbage and the Modern American Feast. In M. Dietler and B. Hayden (Eds.), *Feasts: Archaeological Perspectives on Food, Politics, and Power*. Smithsonian Institution Press, Washington, D.C.

Figures

Figure 1: Overall configuration of HP 104 indicating the location of excavation squares.

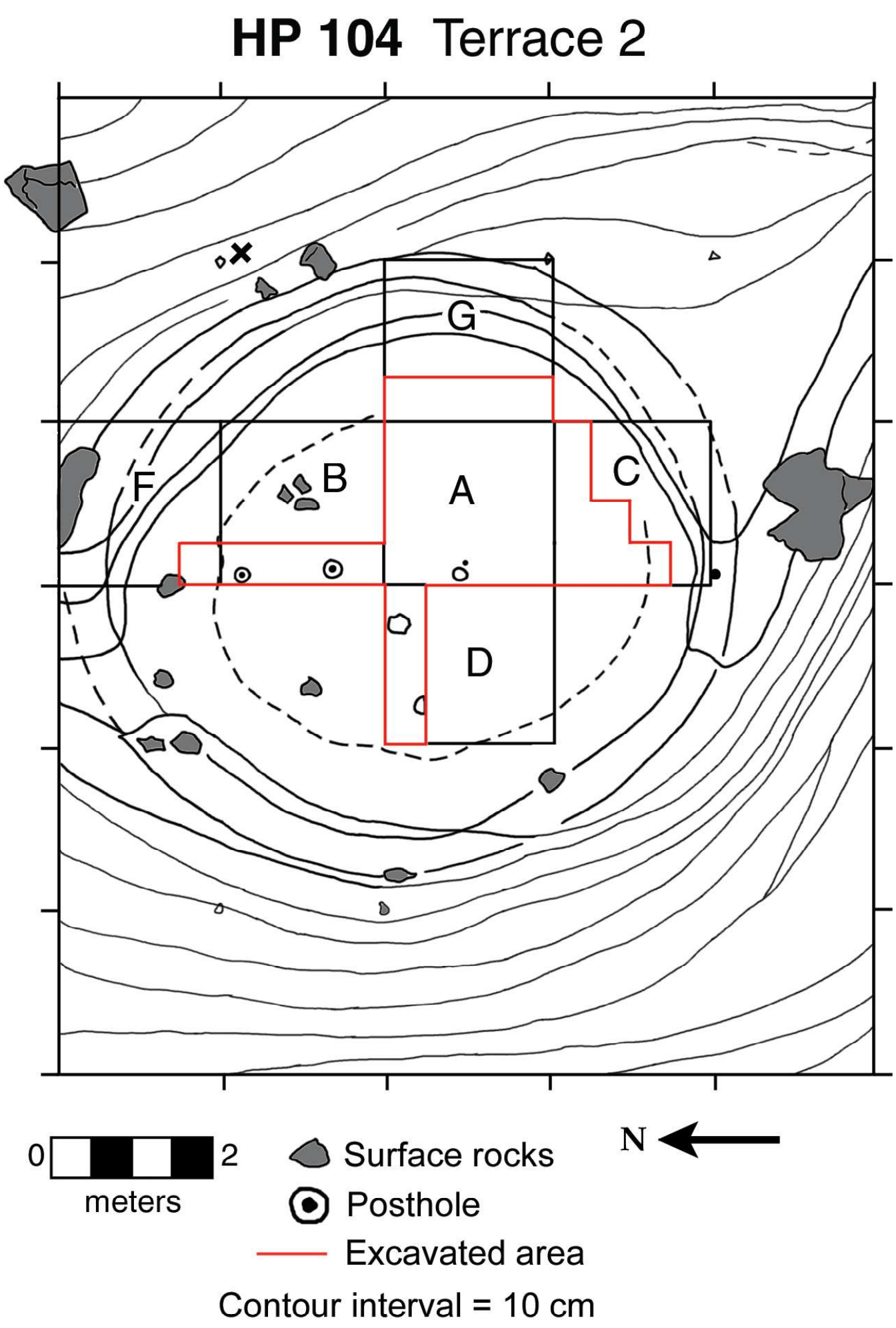
Figure 2: Stratigraphic sections of HP 104.

Figure 3: Floor plan of HP 104 with the east wall shown in detailed colouring, where there may have been an early side entrance which was later filled in.

Figure 4: Feature 1, a hearth in the center of the structure showing apparent intrusion from the surface.

Figure 5: feature 2, an oblong pit containing unusual bone artifacts, including one lahal bone fragment.

Figure 6: Feature 3, a shallow, rock and bone filled basin of unknown function.



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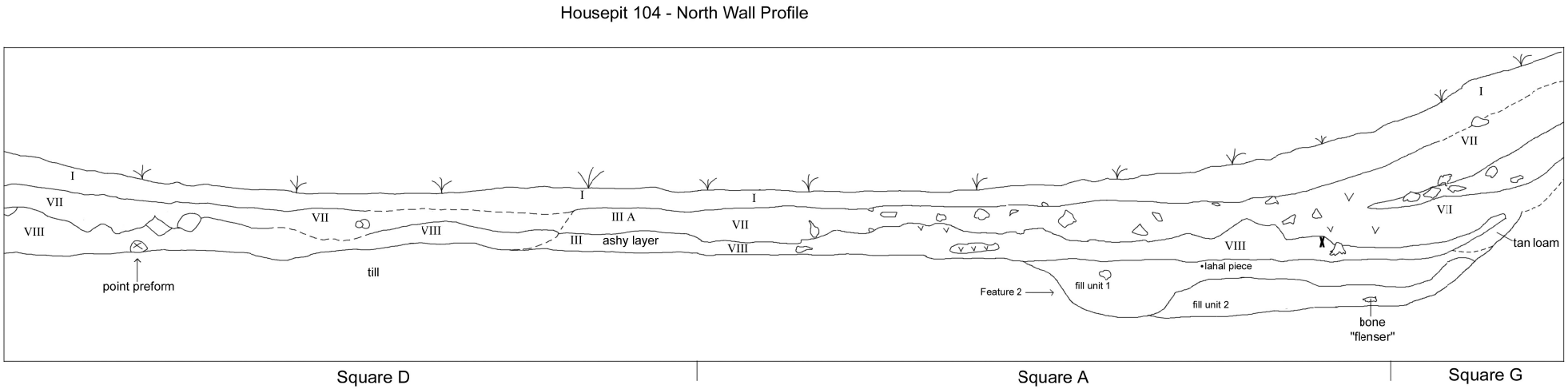

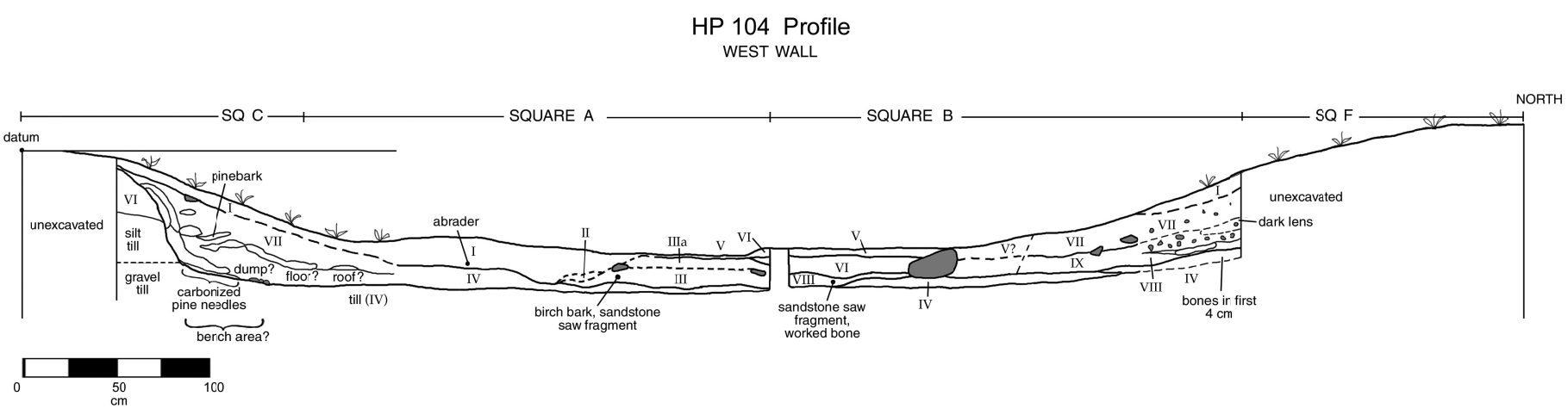

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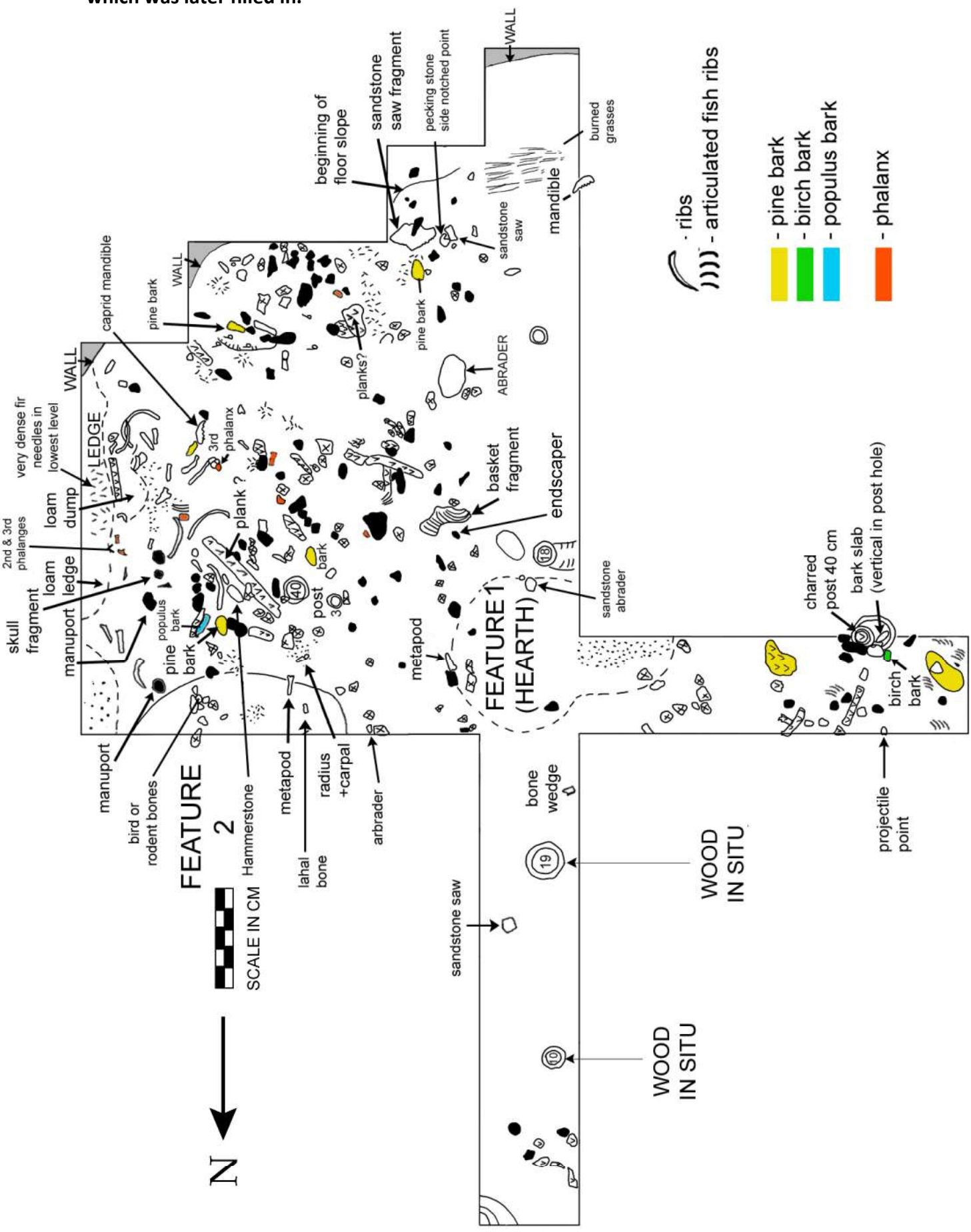

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Figure 5. feature 2, an oblong pit containing unusual bone artifacts, including one lahal bone fragment.

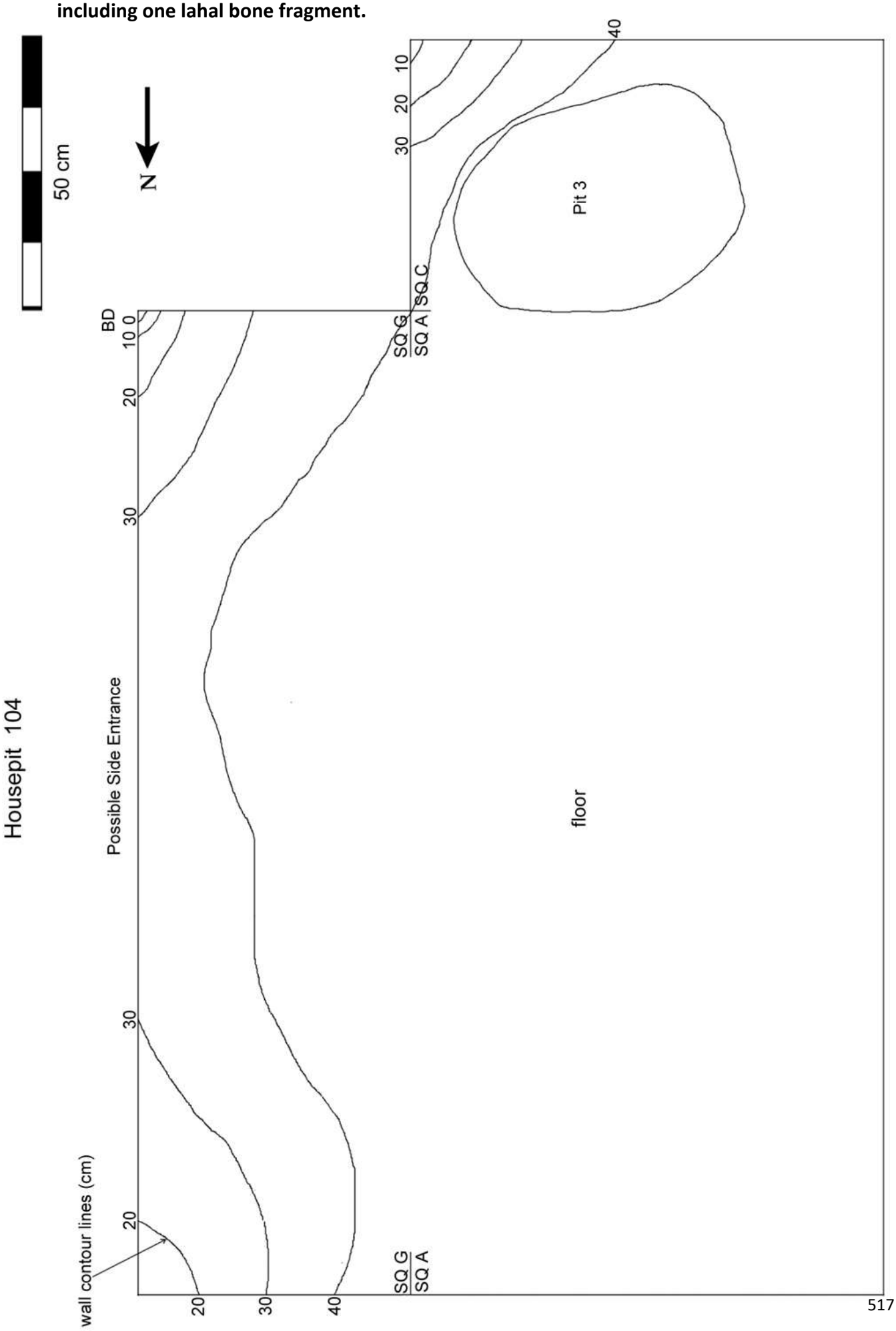
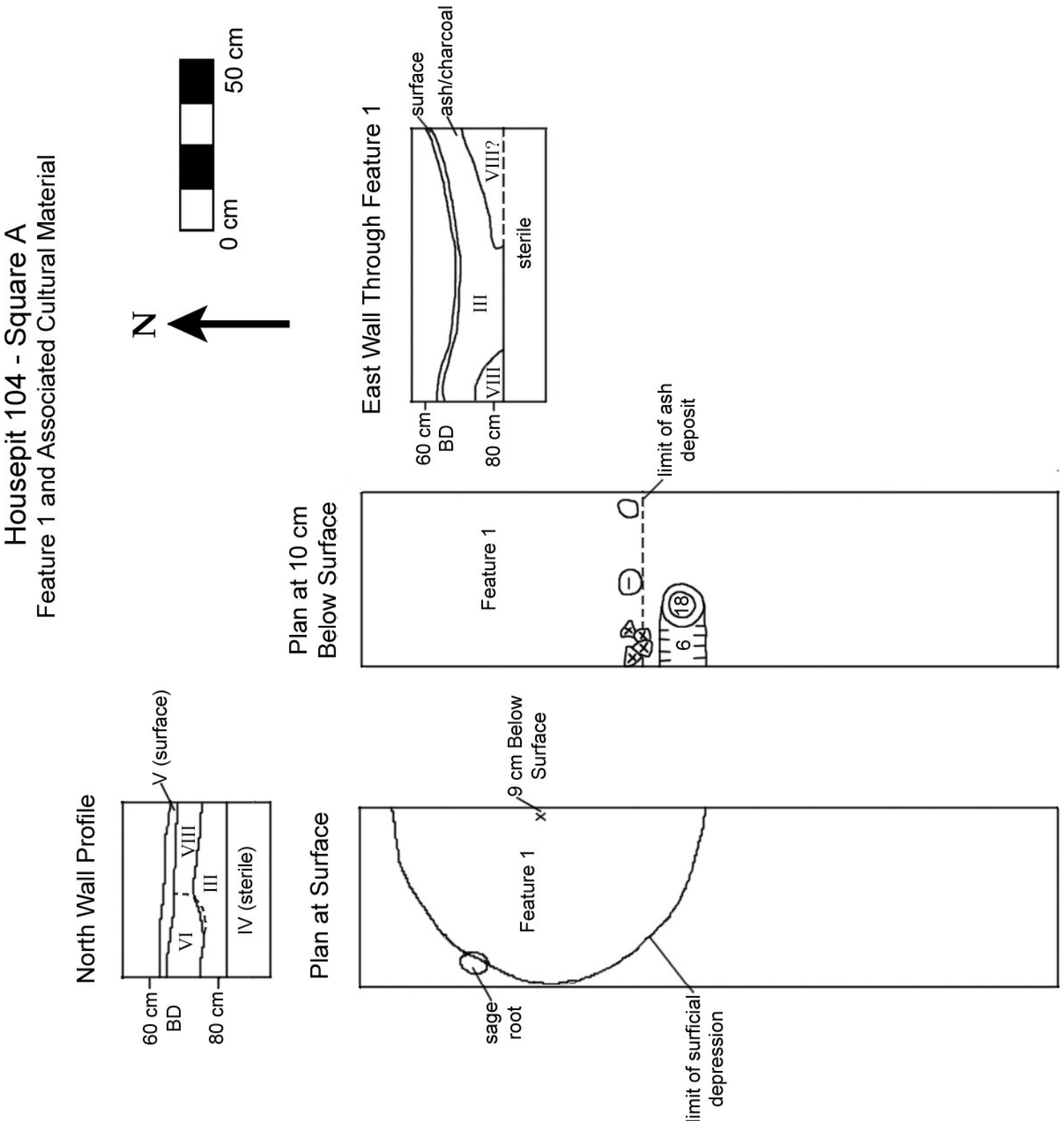
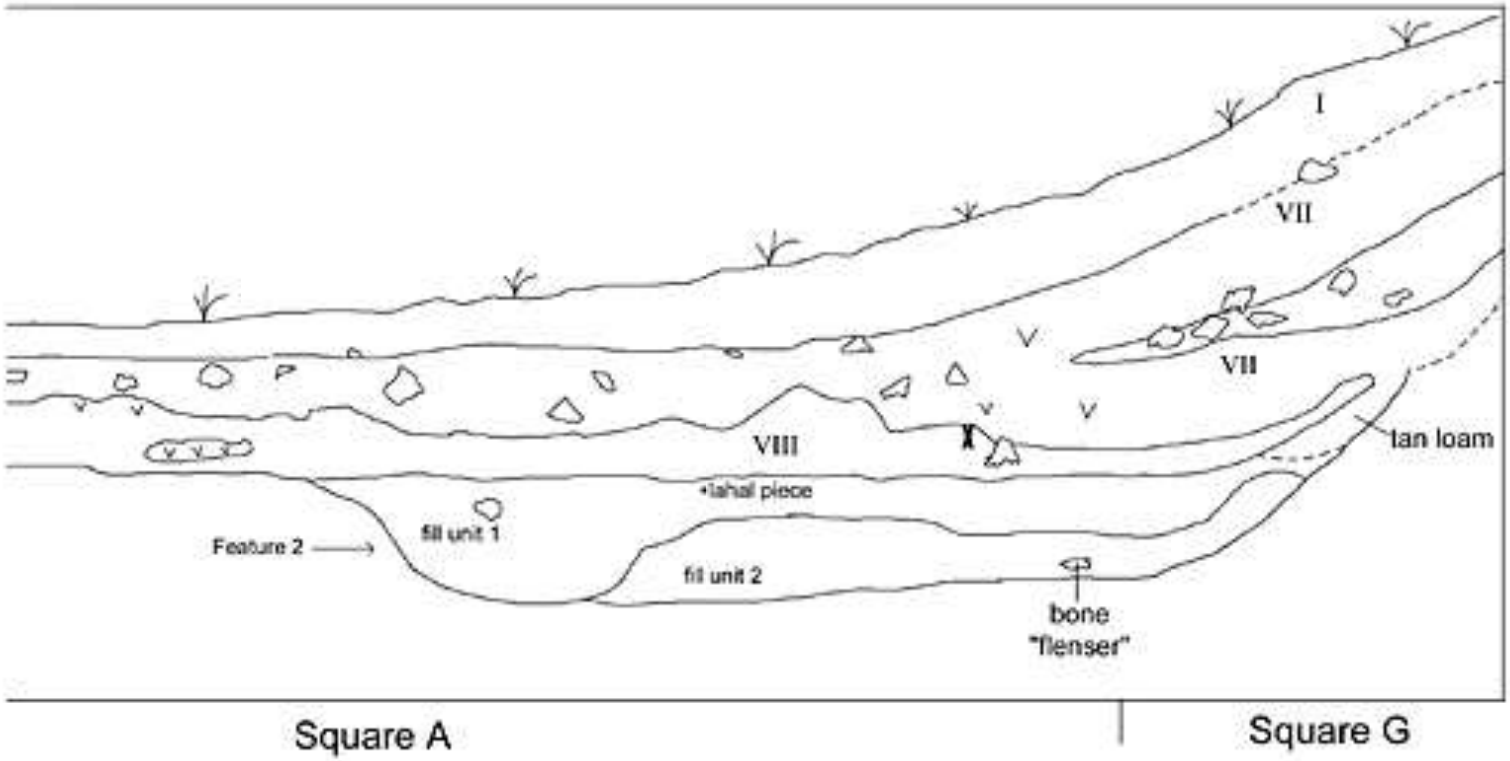


Figure 6. Feature 3, a shallow, rock and bone filled basin of unknown function.

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VII
VII
VIII
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fill unit 1
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Square A
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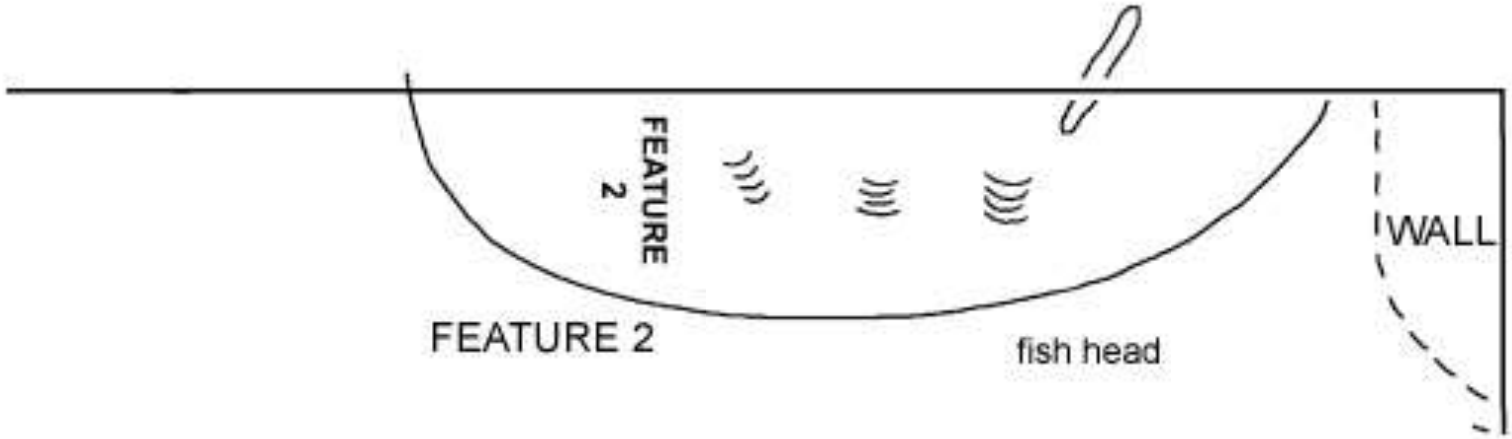
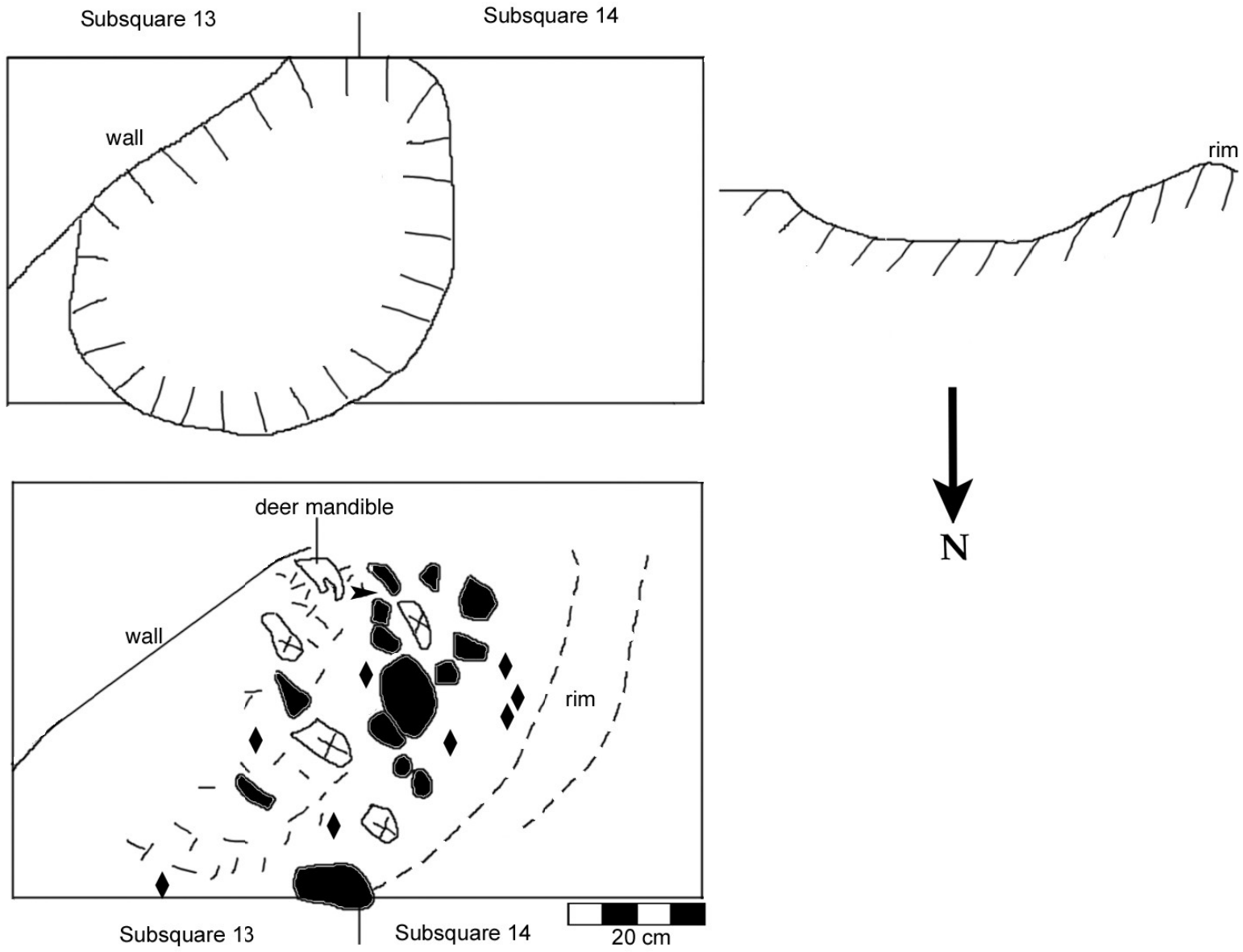

FEATURE 2
WALL
FEATURE 2
fish head

Housepit 104



Feature

Excavations at Housepit 105

Brian Hayden

Located on the highest terrace above the core of the site (Terrace 2), HP 105 was chosen for testing because it was the largest and deepest (1.6 m) of the three structures on Terrace 2 (This Volume, Preface, **Figs. 1 and 2**). The isolated and peripheral location high above the site, and the relatively secluded nature of the small terrace (sheltered by natural embankments on the south and west and the mountain slopes on the east), indicated that this, and the other two nearby smaller structures, may have been special purpose structures. This notion was reinforced by one of the older residents of Fountain Valley who told us that a great many "bones" had been found in the structure. Previous illicit excavations had considerably disturbed the center of the structure, and in planning the location of the test pits, we attempted to take advantage of this disturbance in order to maximize the area excavated. Our excavations produced a cache of 72 bone buttons (the largest and earliest prehistoric collection of such items in British Columbia) and other unusual bone artifacts, which seem to support the notion that this was a specialized structure.

A minimum of two occupation periods are documented for this structure. The earliest is represented by the central storage pit (Feature 1) where the remarkable series of bone buttons was recovered. This was dated to 2,170 ±60 BP and may be associated with some remnants of floor deposits such as strata III or IV (**Fig. 2**). Most of the earlier floor deposits appear to have been removed by subsequent remodeling and cleaning operations as represented by the last occupation floor (Stratum III), dated to 270 BP.

Whether any intervening occupations occurred is open to speculation. Because of its potentially specialized use, this may be one of the most important structures at the site. However, because of the prehistoric disturbance of early deposits, and the illicit excavations that have occurred over the last 50 years, the value of this structure for understanding the social, political, and economic organization at Keatley Creek remains problematical.

The structure is about 9.4 x 10.2 m in diameter and the southern edge is built into the natural embankment on the south edge of the terrace. A 0.5 by 4 meter test trench was opened up (Sq.'s A, and B) with Square C added in the center of the structure extending out almost to a full 2 m square in order to encompass the area of illicit excavation (**Fig. 1**).

Illegal excavation occurred at least twice in the past. A 1.5 m diameter, 45 cm deep circular depression existed near the center of the housepit, with soil heaps to the northeast and south. This had no vegetation growing on it, and may thus have been dug fairly recently. An older excavation left a 1.25 m diameter, 30 cm deep circular depression to the west-southwest of the larger one, with spoil piled to the north-northwest. A local informant related having visited the site nearly forty years ago, and having seen the remains of someone's digging in this housepit. There are mosses growing in this smaller illegal excavation, which in some measure corroborates the story. The informant also stated that a great deal of bone was unearthed at the time, and left scattered on the surface. Much bone was recovered from the floor context in HP 105, as detailed below, and many bones were recovered in 1988 from the illegal spoil cleared prior to excavation.

Stratigraphy:

Few observations were made by the excavators concerning the nature or the interpretations of the strata in this structure. What is available is summarized below. Some idea of the nature of these strata can be obtained by relating them to their stratigraphic representations in **Figure 2**. All Munsell colors were taken on dry sediments.

Stratum I

This deposit was a typical surficial alluvial and perhaps aeolian deposit of silts and sand with some admixture of gravels probably washed down from the higher levels of the interior rim of the structure. Humic accumulation typically contributes to the dark color. This stratum is described as loose, very dark grayish brown (10 YR 3/2) sandy silt with some coarse sand, small angular pebbles and occasional charcoal ash and FCR.

Stratum II

From the stratigraphic profile, this deposit appears to be roof collapse; it is generally dark or ashy colored. The field description appears to support this interpretation. This stratum is described as compact, very dark grayish brown (10 YR 4/2) sandy silt with 25% pebbles, FCR, and considerable charcoal. One broken Kamloops point was recovered from the middle of this stratum.

Stratum III

This deposit was interpreted as "unmistakably a living floor." It was quite compact, very dark gray (10 YR 3/1) silt with small patches of very compact clay containing much articulated fish and mammal bone, few

lithics, some charcoal, and charred wood in moderate amounts, but few FCR. All cultural material was lying horizontally in compacted floor sediments. The dark color is typical of charcoal-rich floor deposits. This stratum lies roughly horizontal, but does not appear to be distinguishable in most of Square A. It is clearly distinct in Square B. A broken Kamloops point was recovered from the top of this stratum.

Stratum IV

Only a thin lens of this stratum exists where it dips down and follows the depression probably created by subsidence of pit fill in Feature 1, the large storage pit. The upper and lateral extensions of Stratum IV have been truncated by cleaning operations associated with Stratum III. Stratum IV may therefore be the remains of an earlier floor, possibly the one associated with Feature 1. It is about the right thickness and has an appropriate horizontality and texture. It is described simply as moderately compact, dark grayish brown (10 YR 4/2) sandy silt with few pebbles, and some pockets of clayey silt. No cultural items were associated with this stratum in Square C, although one deer metapodial was recovered from Square B.

Strata V through X are all pit fill units of varying compositions, and should more appropriately be labeled as "Fill Units" of features rather than "strata;" however, I will follow the original designations. They can be described summarily as follows:

Stratum V

This is a compact, very dark grayish brown (10 YR 3/2) sandy silt with moderate amounts of pebbles and large fragments of mammal bone and large lithic debitage in Square A, but few items in Square C. This stratum

may have been deposited to level the floor after compaction and subsidence of the main fill of Feature 1. However, it seems that little time elapsed between the deposition of Strata IV, V, and VI since Kusmer found a number of bone refits from these strata (see Vol. I, Chap. 10). Stratum V, Square A differs in that it is a reddish brown color. An unusual cluster of vertically oriented large mammal bones also occurred in Stratum V.

Stratum VI

This is a compact, very dark grayish brown (10 YR 3/2) sandy silt with a high pebble content and some small cobbles. Bone and stone cultural remains are similar to Stratum V, although there were some locally very abundant pockets of lithics and bone material in Square C. Stratum VI, Square A differs in that it is a reddish brown color.

Stratum VII

This too, is a compact, grayish brown (10 YR 5/2) sandy silt with a high pebble content and occasional small cobbles. Few bones or lithics are associated with these deposits, and the latter are mainly pressure flakes.

Stratum VIII

This is a compact, dark grayish brown (10 YR 4/2) sandy silt with the same characteristics as Stratum VII.

Stratum IX

This stratum is a quite loose sandy silt with a very dark gray color (10 YR 3/1). It contains some charcoal, but few lithics. Stratum IX, Square A differs only in that it is a reddish brown color.

Stratum X

This is a compact, dark grayish brown (10 YR 4/2) silty sand containing at its base many bone buttons.

Stratum XI

This is unsorted, sterile glacial till. It is compact, light yellowish brown in color (10 YR 6/4).

Features and Postholes

There are only two features recorded in HP 105. One of these, Feature 2, is a hearth visible in the wall profile (**Fig. 2**) and almost certainly associated with the most recent floor (Stratum III). About 4-6 cm of fire-reddened soil underlies an ash lens about 60 cm in diameter. There are abundant salmon and bone remains just to the south of this hearth on the floor in Stratum III. Pieces of bone also occurred in the fire reddened sediments of this feature.

The second, and most substantial feature, Feature 1, is a large storage pit visible in the profiles (**Fig. 2**). After this feature was encountered in the original test trench, 9 subsquares of another square (Sq. C) were opened up adjacent to Square A in order to more fully explore this important feature, even though illicit excavators had previously disturbed most of the upper deposits in Square C. The mid-section of this pit is about 150 cm in diameter, while the top section slopes outward and joins the floor deposits in a gradual fashion spanning almost 3 meters. The original depth of this pit below floor surface must have been 80 cm or more. The sediment fill is described above as Strata V-X. Some of these strata had few cultural remains, while others had unusual concentrations of lithic items, and others

had concentrations of faunal remains, including fish (see stratigraphic descriptions above). There was a partial pavement of cobbles at the interface of Strata VII and VIII, near the bottom of the pit. Also of interest, is the fact that an intense fire burned on top of Strata IX at some point thereby fire-reddening these deposits to a depth of 2 cm and providing good carbon samples for dating. Charcoal from the pit has been dated at 2,170 BP, that is, from the Plateau Horizon period, which is consistent with the age estimate provided in the field by Michael Rousseau on the basis of the presence of bone buttons. About 72 bone buttons were found at the bottom of this pit, some overlying each other, but not in contact. At least two were in a vertical position. The distribution of all the buttons that were recorded *in situ* is shown in **Figure 3**. While pits of this size are usually assumed to have been for food storage, especially salmon, it seems clear that this pit was also (or perhaps exclusively) being used to store prestige or ritual objects. The distribution and concentration of bone buttons makes it seem unlikely that these objects were a cache of loose items. The fact that almost all of the buttons seem to have been oriented with their polished, convex sides facing up also indicates that this was not simply a cache of loose objects. It seems far more likely that these buttons were attached to some sort of garment or blanket, perhaps of buckskin. As far as I am aware, this is the earliest evidence that exists for the manufacture of button blankets which were ethnographically so well known on the Coast. Few faunal remains were recovered from this feature.

At a subsequent date, a small pit seems to have been excavated inside the pit fill of Feature 1. This smaller pit was 24 cm deep and about 20 cm in diameter. This pit does not appear to have been cut down through any of the floors, or at least not Stratum III, and therefore probably dates from the

earlier occupation period. A similar bowl-shaped pit about 30 cm deep seems to have been excavated into Stratum VI of the large storage pit. This contained some pine needles, salmon and mammal bones, and some lithics.

Only two postholes were identified with certainty, one located at the southeastern corner of Subsquare 7 of Square C. This was apparently associated with the most recent floor (Stratum III). This posthole was 14 cm in diameter and 14 cm deep. The other posthole was more substantial, being 34 cm deep and 10 cm in diameter. It was located in the northeast corner of Subsquare 10 of Square C, and appears to be from an earlier occupation.

Artifacts

Clearly the most interesting artifacts are the bone buttons from Feature 1 that have already been described (See This Volume, Chap. 2, **Fig. 10**). However, there are a number of other interesting finds as well. These include a tabular bone bead sawed at both ends, and a sharply pointed needle from Stratum I or II (Sq. C.). Another bone needle was recovered from the most recent floor (Stratum III). The most recent floor also contained many salmon head parts, fins, ribs, and several articulated backbone segments. Several mammal long bones also constitute unusual occurrences, including an articulated segment of distal deer limb, and a cluster of large broken ulna, tibia, and ribs stuck vertically into the floor. A very unusual pointed and perforated bone object (See This Volume, Chap. 2, **Fig. 10;** also Vol. II, Chap. 13, Fig. 3E) seems to have come from the upper levels of the large storage pit (Feature 1).

Lithic objects of importance include both Plateau and Kamloops point fragments from pothunters' backdirt piles, and an exhausted stemmed

biface from just above the large storage pit. Point types found *in situ* are shown in the profiles and floor plans (**Figs. 2 and 4**), and include one Kamloops point in the roof deposits, and one on the most recent floor (Stratum III). Few other lithics were associated with Stratum III.

Summary

There were at least two periods of occupation in HP 105, an earlier Plateau horizon occupation from which only the large storage pit feature (Feature 1) and small lenses of associated floor have been preserved; and a much later occupation from about 270 years ago. Both occupations are interesting, the earlier occupation because of its unusual bone buttons, pointed bone artifacts, and accompanying faunal and lithic assemblage. Especially when taken in conjunction with several Plateau period meat roasting pits that are adjacent to the structure (EHPE 5 and Feature 4 in HP 106 which included a ritual knife), a fairly strong argument can be made for specialized ritual and/or feasting use of HP 105 and the areas immediately adjacent to it during Plateau times.

The most recent occupation is also interesting since all three structures on Terrace 2 were occupied at this time and they vary enormously in their contents. Housepit 106 has almost no cultural remains associated with it. Housepit 104 is notable for its unusual concentration of sandstone abrading tools, including a very large and unusual sandstone saw, as well as the charred remains of a coiled basket, and substantial numbers of mammal bones. The most recent HP 105 floor is notable for its high density of salmon heads, fins, ribs, and backbones, as well as deer long bones pushed vertically into the floor. The only other bones pushed vertically into the floor deposits at the site come from HP 106. Elsewhere in the world, bones pushed

vertically into living surfaces are associated with ritual sanctuaries (Bégouën et al. 1993; Freeman and Echegaray 1981). Some other small structures are also notable for high densities of salmon fins, heads, and small bones (e.g., HP's 9 and 109). As yet, the significance of high concentrations of these types of salmon parts on occupation floors is not clear, but constitutes a distinct phenomenon associated with some small structures. Whether the structures on Terrace 2 around 270 BP constituted a small group of related families seeking the shelter and protection of a secluded location, or whether these structures constitute some sort of specialized ritual or feasting complex such as occur in New Guinea (Hampton 1999), cannot be resolved without more extensive excavation of these structures. However, the unusual density of bones, many of them articulated, seems to indicate a use other than normal residence where trampling would disarticulate bone segments and cleanup would ordinarily remove them from floor contexts or at least clear them off of the most used parts of the floor.

Figures

Figure 1: Approximate locations of excavation test units in HP 105.

Figure 2: Stratigraphic profiles for the east and west walls of Square A and B.

Figure 3: Locations of bone buttons at the bottom of Feature 1 recovered *in situ* from the initial test trench in Square A. Note the clustering and semicircular pattern of most of these buttons. Only a few additional buttons were recovered from the bottom of the rest of the feature excavated in Square C.

Figure 4: The floor plan of the most recent occupation (Stratum III) in Square B. Note the high density of salmon bones.

References

Bégouën, R., J. Clottes, J. P. Giraud, and F. Rouzaud.

1993 Os Plantés et Peintures Rupestres dans la Caverne d'Enlène. *Congrès National des Sociétés Historiques et Scientifiques* 118 (Pau): 283-306.

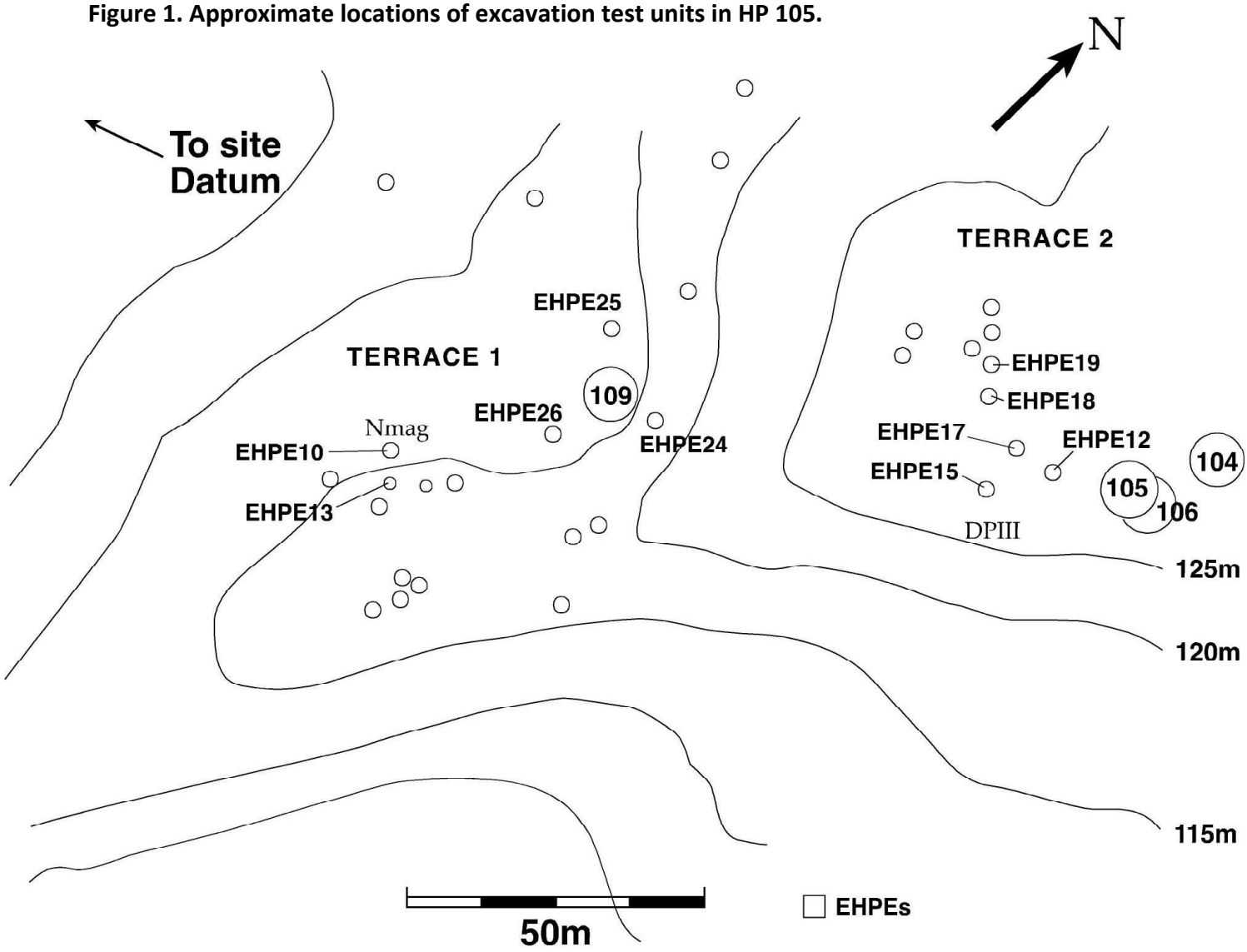
Freeman, L., and J. Gonzalez Echegaray

1981 El Juyu: A 14,000-year-old Sanctuary from Northern Spain. *History of Religions* 21:1-19.

Hampton, O. W.

1999 *Culture of Stone*. Texas A&M University Press, College Station.

Figure 1. Approximate locations of excavation test units in HP 105.



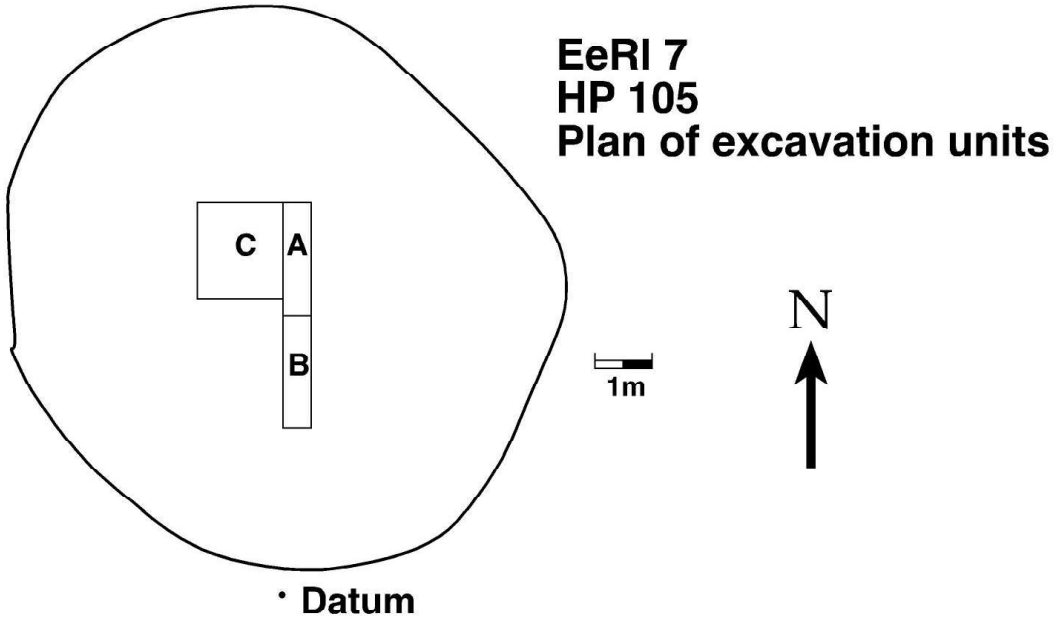
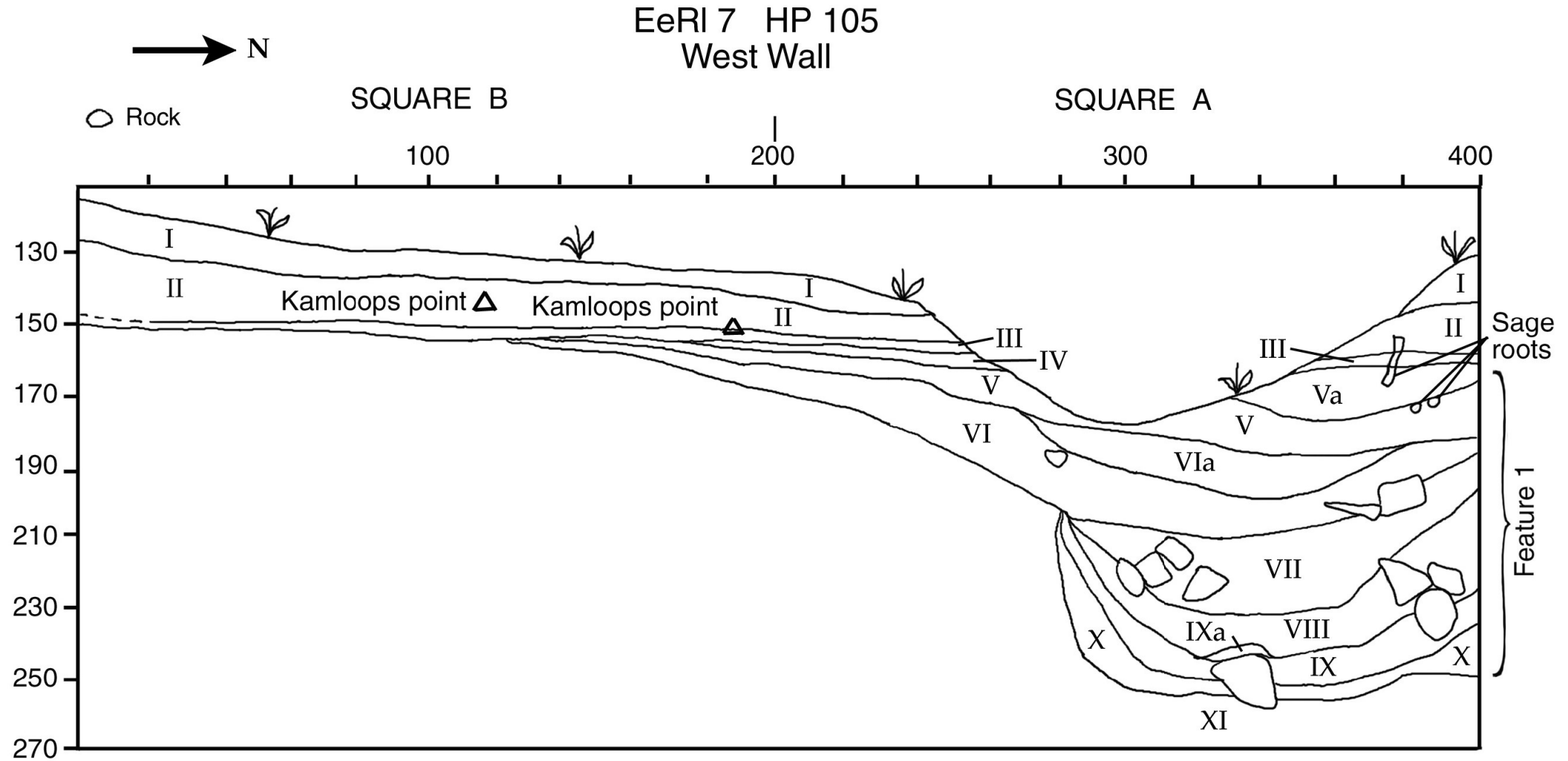


Figure 2. Stratigraphic profiles for the east and west walls of Square A and B.



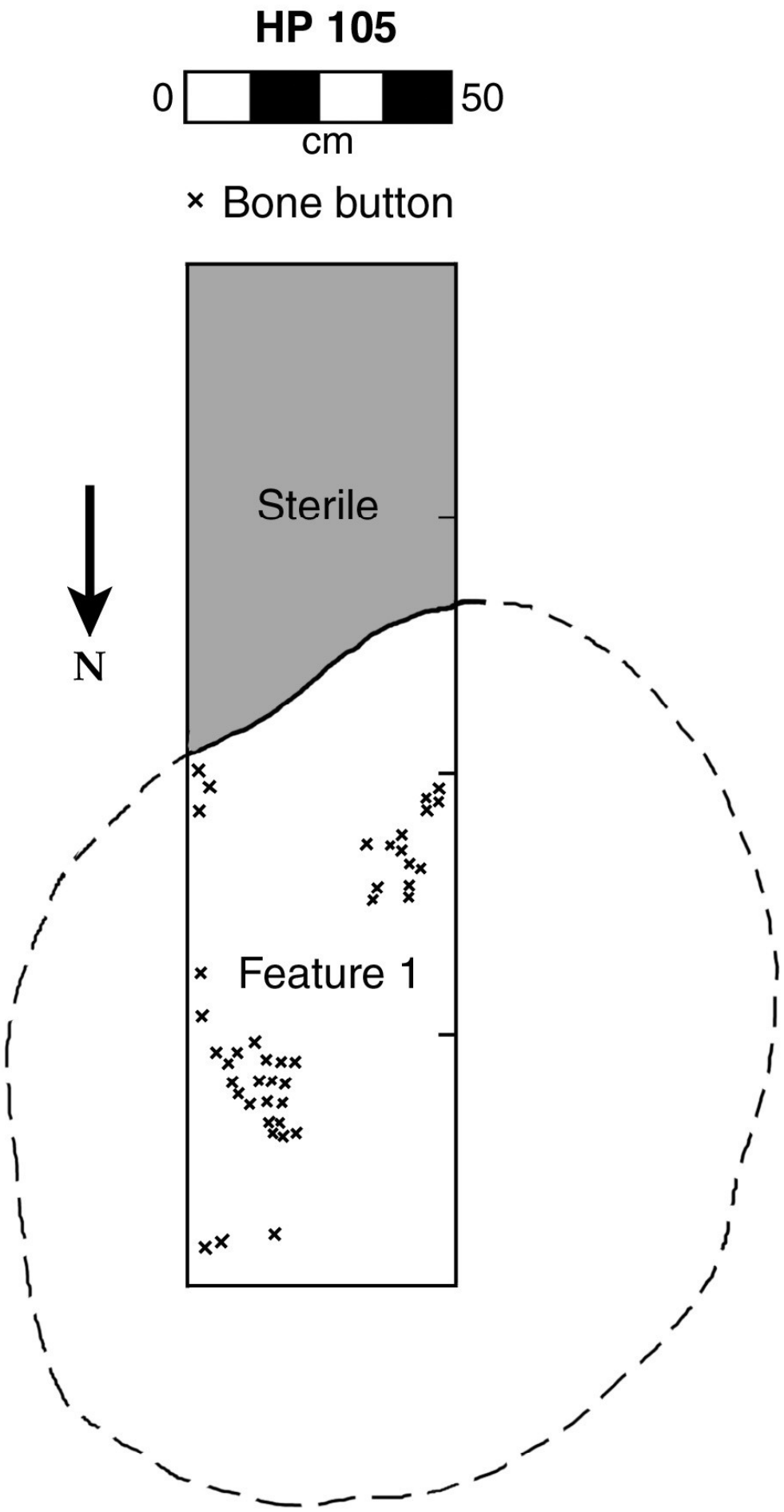


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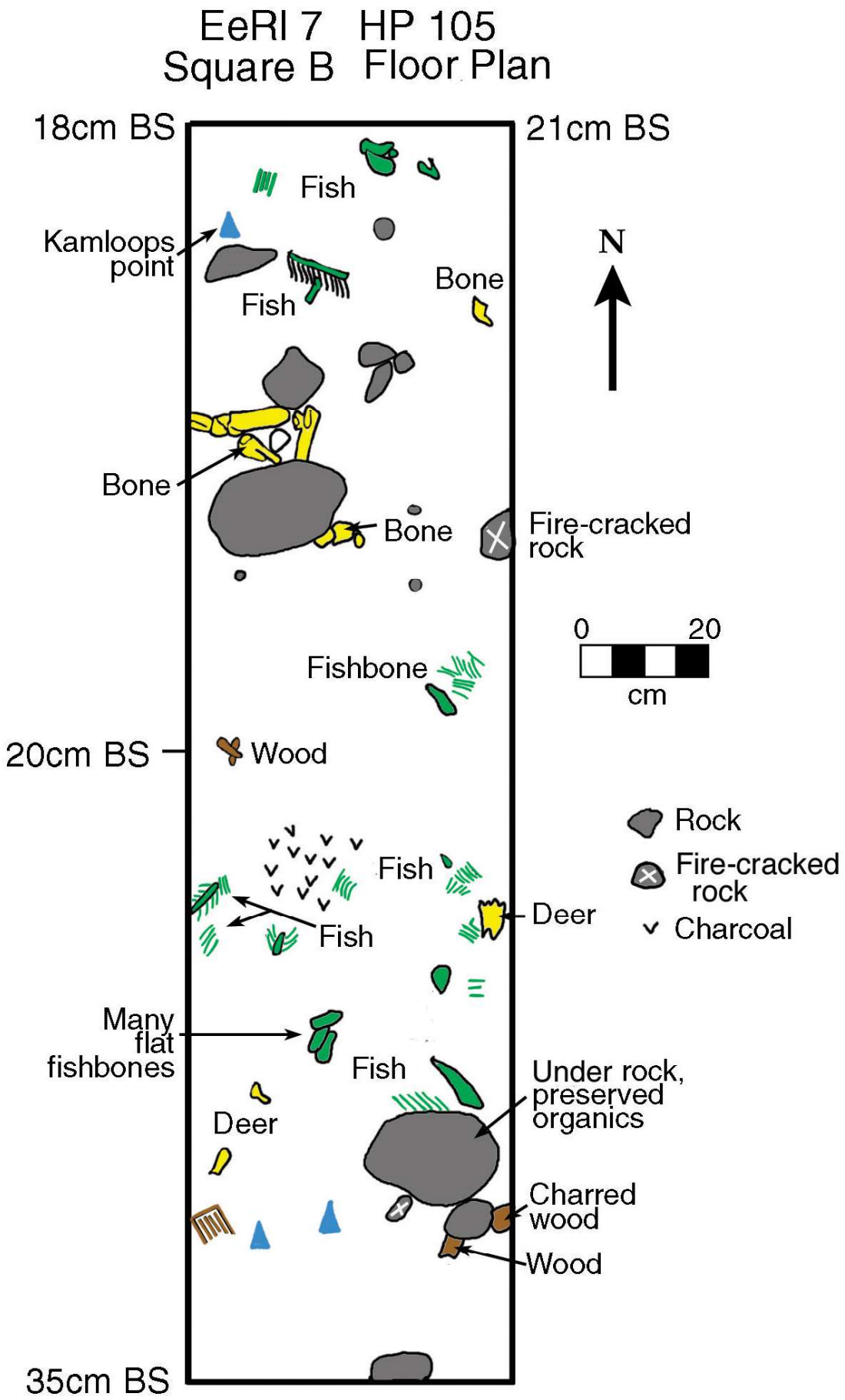
Figure 4. The floor plan of the most recent occupation (Stratum III) in Square B. Note the high density of salmon bones.



Excavations at Housepit 106

Brian Hayden

Housepit 106 was the centermost structure in a cluster of three depressions on the highest and smallest glacial terrace at Keatley Creek (This Volume, Preface, **Figs. 1 and 2**). The original dimensions of this structure are estimated to have been about 11 x 9 m from rim crest to rim crest, however the western rim of the structure has been destroyed by construction activity from HP 105. Despite this indication of sequential occupation of HP's 106 and 105, the last occupations of both structures appear contemporaneous (or even reversed in sequence) on the basis of radiocarbon dates (220 +/ 70 for HP 106, and 270 +/ 55 for HP 105). These two structures are also contemporaneous with HP 104. Characteristics that relate all three structures are their remote location high above the site in a very secluded natural feature with an abrupt mountain slope to the east as well as natural glacial embankments along the south and west edges of the terrace remnant, their contemporaneous age (except for HP 105 with an early and a late occupation), and their unusual assemblages.

Housepit 106 is also unusual in that a very large boulder forms part of the southern inside wall, while smaller boulders line the wall in the southeast and northeast. It also has an unusual angular plan shape and exhibits the most pervasive fire-reddening of sediments inside the structure of all the structures tested at Keatley Creek. In contrast to the very rich faunal and lithic assemblage in HP's 104 and 105, there was very little found in HP 106, with the exception of an unusual small meat roasting pit under the eastern rim of the structure. As discussed in more detail with HP 107,

scarce artifactual remains often characterize some types of ritual structures. The southern rims of both HP 105 and 106 were built into the natural embankment that forms the edge of the terrace overlooking the Keatley Creek ravine.

In order to determine if HP 106 had served any specialized functions, we excavated a 50 cm wide test trench from the boulder in the south rim, to the center of the housepit, as well as a perpendicular test trench from the center of the structure to the crest of the eastern rim (**Fig. 1**). There was no indication of illicit excavations having taken place in this structure prior to our investigations.

Stratigraphy: (Fig. 3)

Stratum I

This is the topmost stratum and, as in other structural depressions at the site, is represented by a fine, silty dark loam (5-10% gravel and pebbles) about 5 cm thick. This deposit thins out and becomes more pebbly towards the top of the rim deposits.

Stratum II

This deposit was difficult to interpret due to its extreme variability in color and texture. Stratigraphically, Stratum II seems like it should be composed of roof deposits that have collapsed down after housepit abandonment and burning. However, the intensely fire-reddened nature of the underlying deposit (Stratum III) in Square A, and the extremely localized fire-reddened character of Stratum II in Squares C and K, make the origins of the deposit somewhat enigmatic. In Square A, it seemed that the fire-

reddening was due to a very large, broad post-abandonment fire with some large wall boulders sliding down on top of the fire-reddened soils (Stratum III) near the walls after the burning events (**Fig. 3**) with Stratum II being deposited subsequently. Such a scenario seems incongruent with the interpretation of Stratum II and III as roof deposits. Perhaps we will have to consider the possibility of Stratum III (or part of it) as being a deposit of silt brought in to cover part of the floor before the roof collapsed. The red-brown-black patchy nature of the Stratum II/III fire-reddening in Square K may indicate that the fire-reddening had occurred prior to the excavation and subsequent deposition of soils from different locations. The nature and origin of the intensive fire-reddening will have to be determined by future excavations, since insufficient area was excavated to produce a definitive interpretation during our investigations. Stratum II deposits also varied considerably in pebble content, ranging from depleted pebbles (c. 10%) to c. 20-30% pebbles and cobbles. The texture was basically a loamy silt. This variability may reflect various locations that soil for the roof covering was obtain from, ranging from loessic deposits on Terrace II to more till-like material under the loess. A side-notched Kamloops point was recovered from Stratum II deposits in Square C.

Stratum III

This deposit is generally indistinguishable from Stratum II, except in Square B, and perhaps in other squares that are close to the inner walls, where it seems to have a more gravelly, roof-like character. In Square A, the top of Stratum III is a 10 cm thick band of very reddened silty clay soil indicating a fairly large and intense fire that took place (near the wall boulder) before the deposition of Stratum II. Clear lenses of charcoal occur

within it as well as at its base in some places. These seem to be from burned roof elements. Stratum III seems particularly distinctive in Subsquare 9 of Square A where a large boulder sits on top of Stratum III indicating that it is a distinct depositional event that has been rubified. The bottom Stratum III deposits are not as reddened and appear to represent typical roof gravel and silt deposits that occur more as distinct dumps than is usually the case.

Stratum IV

This is typical, very black loamy floor deposit with many charcoal fragments but few pebbles (<5%) in some places such as near the south wall, but varying to black/tan/reddened mottled gravelly loams with up to 30% pebbles near the center area of the structure. In some areas (e.g., Sq. A, Ssq. 2), it seems very clear that loessic silts have been brought in and deposited on the floor. Both the thin lenses (c. 3 cm maximum thickness) and the color and texture distinctiveness of the basic floor deposits near the walls attest to this practice. As in some other small housepits, there were mound-like occurrences of distinctive sediments associated with the floor near some of the walls in HP 106, notably in Squares H and K. Some of these dumps are typically highly organic and "punky" while others are composed of tan silts. I interpret these as "wall dumps" probably placed under benches. However, why they were placed there and what they consisted of, or what their origins were remains problematical.

Stratum V

This deposit appears to be a loessic loam that accumulated over Feature 4 (see below and **Figs. 3 and 5**) and was stable long enough for a slight dark organic discoloration to develop in its upper 5 cm. A number of

well-preserved bones were found in the top of this deposit. The excavation of HP 106 subsequently cut through Stratum V. As is typical of surface loesses at the site, pebbles and cobbles are under 10%.

Stratum VI

This stratum is essentially rim material composed of redeposited till, overlying Stratum V on top of the structure walls. There is little discoloration or artifact occurrence in this stratum.

Features:

Feature 1

This feature appears to be a meat roasting pit about 60 cm in diameter that was dug about 20 cm into the surface of the roof deposits. It is clearly a post-collapse feature. Highly fragmented bone is concentrated at about 10 cm below surface and is in some places clearly overlain by pine bark slabs. A deer and a medium sized mammal seem to be represented in the bone remains, but there are no fish remains, few lithics, and only about 20 fire-cracked rocks. There appears to be a loose arrangement of rocks around the roasting pit. This feature must date to the Protohistoric or perhaps even Historic Period.

Feature 2

The thick and intensely fire-reddened sediments of Stratum III in Squares A and B were initially thought to represent a major hearth. However, subsequent excavation indicated that burning associated with this event may have spread over a considerable portion of the collapsed interior

of HP 106, or that there may have been a series of fires over the Stratum III surface creating palimpsests of fire-reddening. The most intense reddening seems to occur in Squares A and B immediately in front of the large boulder in the south interior wall of HP 106 (**Fig. 3**). The intensely fire-reddened sediments extend underneath a second boulder, indicating that it was probably moved or slid to its present location after the intense fires had burned in this location. Little cultural material was associated with the reddened deposits. The extent and intensity of these fires is unique at Keatley Creek, and their interpretation, like their stratigraphic position and significance is problematical. Given the evidence for widespread burning in Stratum III and II, it is perhaps questionable as to whether this occurrence should be properly termed a "feature."

Feature 3

This is a pit feature approximately 50 cm in diameter and 27 cm deep. It has a curious location, beginning right underneath the edge of a boulder in Stratum II on the east, and is situated right beneath a large surface boulder in the wall to the south (**Fig. 4**). This pit was also clearly cut through the intensely rubified deposits of Stratum III in Square A that underlay these boulders. Thus, it is not a pit associated with the original occupation floor, but was excavated after the roof had collapsed, after the intense fire had burned on Stratum III, and after the boulder in Stratum II came to rest in its present position. The position of this feature in relation to the very large boulder in the south wall seems significant, however, it is not clear what that significance was. The fill of this feature was very punky, similar to post-mold, as though it was filled with organic material that had decayed. Charcoal occurred in the bottom and cobbles with large pebbles

filled the southern half of the bottom of this pit (**Fig. 4**). It is difficult to interpret the nature of this pit, but its unusual character and placement may be related to ritual activities, as is the case with several other features on Terrace 2.

Feature 4

In extending our test trench from the center of HP 106 to the eastern rim, I encountered the partial remains of a roasting pit under the eastern rim in Square K. The roasting pit was overlain by loess in which some organic soil development had occurred (manifested as slight darkening in the upper 5 cm of the deposit, referred to as Stratum V) before being buried by rim material from HP 106 in the form of redeposited till (Stratum VI). Prehistorically, the excavation of the floor for HP 106 had cut into part of the roasting pit, and thus part of the roasting pit was exposed in the wall of HP 106 (**Fig. 5**). It is clear that this roasting pit (Feature 4) clearly antedates the construction of HP 106, perhaps by some considerable time given the slight soil development on the sediments overlying this feature.

The bottom of the feature consisted of dark, re-deposited, charcoal-rich sediments with some large cobbles having been thrown in the top fill. As is typical of meat roasting pits, the charcoal-rich bottom layer contained significant numbers of artiodactyl bones (ribs, radius-ulna, astragalus, phalanges, metapodials, thin bone) and significant kinds of lithic tools. A small generic biface was recovered near the pit wall at 85 cm BD, while a completely unique and very finely made crescent-shaped, or sickle shaped, biface was excavated from the very bottom and center of the roasting pit, lying almost perfectly horizontally, as though it had been placed there on purpose as an offering (**Fig. 5**; see also Vol. II, Chap 13, Fig. 5; Vol. III, Chap

1, Fig. 5**)**. We have not had the resources to date this feature. It probably dates from a period prior to the Kamloops Horizon.

Artifacts

The pre-housepit occurrence of the very unusual crescent-shaped biface just mentioned is completely unique in Northwest prehistory. Given this uniqueness and the unusual nature of Terrace 2 remains and geomorphology, it seems appropriate to suggest that this biface may well have had a ritual significance, especially since it seems to have been an offering. Other than this, the HP 106 floor is remarkable for its paucity of any types of artifacts, faunal or lithic. This makes the few items that do occur in these deposits all the more remarkable given their unusual nature. Aside from the crescent-shaped biface, one well-retouched scraper was found in Stratum II, while debitage flakes occurred sporadically also. Faunal material was sparse but included a number of deer elements and salmon bones plus a remarkable antler wedge that was found buried vertically close to a post hole. A small slit trench almost 20 cm deep had been dug into the till under the floor of Subsquare 5 in Square B and the antler wedge deliberately stuck into this hole (**Fig. 3**). The hole was seemingly dug expressly to bury the antler wedge. The top seems to have been exposed when the structure was burned, since the top of the antler is burned. This is yet another possible indication of ritual behavior.

Construction

Some burned roof beams associated with pine bark and conifer needles occurred in various places within our test trenches indicating that

this structure should provide good architectural information if excavated more extensively. One of the two major post holes that were excavated contained the burned remains of a post with several rocks wedged around its base and in the sides of the post hole as packing. The other post hole contained only dirt.

From the carbonized remains of roof elements on the floor/roof contact, it seemed apparent that many of the roof elements were actually split poles or planks. The recurrent thinness of the charred remains together with their width indicated that some of the roofing elements had been split or planked. This procedure was not noted in earlier housepit remains at the site, indicating that this splitting or planking roofing technique may have been developed late in the Kamloops Horizon. This may also represent a labor intensive roofing technique that was only used for special or high status structures. Conifer needles occur frequently in the floor deposits of HP 104 and 106, especially near the walls and overlying bark laying on burned beams. Extensive coverings of fir boughs on large parts of floors may have also been a status or ritual characteristic of these structures.

Summary and Conclusions

Housepit 106 is certainly one of the most unusual structures that were tested or excavated at Keatley Creek. It was situated on Terrace 2, a remote and secluded location high above the main part of the site. Other unusual structures and features occurred on Terrace 2 (HP's 104 and 105, as well as Feature 4 of HP 106). There was very little artifactual material associated with the structure except for an antler wedge buried vertically in the floor. In contrast, the contemporaneous occupations of HP's 104 and 105 contained abundant faunal and/or lithic remains. The housepit depression

of HP 106 may have been intensively burned after abandonment and roof-collapse which would make the interpretation of Stratum II as roof deposit problematical. The intensely reddened parts of the Stratum III silt deposits may have been placed on the floor and fired before the roof collapsed, but further excavation is necessary to determine this.

Under the rim of HP 106, a very unique crescent-shaped biface was left in the bottom of a roasting pit dug into the loess surface well before the construction of HP 106. There are other occurrences of bifaces having been deposited in the bottom of meat roasting pits on the Plateau. Rousseau et al. (1991) describe an instance of two bifaces at the bottom of a meat roasting pit at Oregon Jack Creek dating to 3,000 BP, and Peacock (In Press) excavated a similar occurrence near Kamloops. Thus, there is a pattern to this occurrence, and this type of behavior is difficult to interpret in terms other than those of ritual.

Similarly, the occurrence of bones placed vertically in living floors is an unusual type of behavior. At Keatley Creek (and perhaps for the entire Plateau), the only other occurrence of such behavior was in HP 105, where long bone pieces were thrust vertically into and through the occupation floor (See HP 105). Similar occurrences from other complex hunter/gatherers are documented from elsewhere in the world. These occurrences were particularly notable in the Salle du Fond in the Grotte d'Enlene in southern France where their unusual frequency (60 cases) was clearly associated with ritual contexts and behaviors (Begouen et al. 1993). In the Spanish Upper Paleolithic deposits of El Juyo, Freeman and Echegaray (1981:6) also found antler segments placed vertically in a deposit they identified as a ritual offering. These observations lend support to the idea that the vertically placed bone and antler pieces in HP's 105 and 106 may

also have had some kind of ritual significance. The paucity of artifactual material in HP 106 also seems consistent with its use as a ritual meeting place. Elsewhere in the world, structures that are interpreted as ritual in nature are almost devoid of artifactual remains or food remains (Flannery 1976:334-5; Muir 1999:79-81; personal communication; B Hayden, Fieldnotes from Laos), or alternatively, they may be filled with unusual amounts of feasting debris and broken or lost prestige items from the performances that accompany feasts. However, frequently, the most holy places have no feasting remains. Feasting often takes place in adjacent areas or structures. Housepit 106 also provides some of the clearest evidence for the covering of structure floors with layers of fine silts. Grant Keddie (personal communication) reported similar silt floor coverings being used in the Interior for special dance structures in order to provide more comfortable floors (Vol. II, Chap. 1, p. 21). It is certainly an extra effort to cover floors in this fashion and one might expect such a special feature only in high status or ritual structures, which seems to be the case at Keatley Creek.

Thus, while the excavation of HP 106 has been limited, I feel there are reasonable grounds for arguing that it may well have been a specialized ritual structure, placed in a remote location during Proto-historic times, but continuing a long tradition of using the Terrace 2 natural enclosure as a sacred space, much like the remote sacred enclosures used by transegalitarian communities in the Highlands of New Guinea (Hampton 1999).

References

Bégouen, R., J. Clottes, J.-P. Giraud, and F. Rouzaud.

1993 Os Plantés et Peintures Rupestres dans la Caverne d'Enlène. *Congrès National des Sociétés Historiques et Scientifiques* 118 (Pau): 283-306.

Flannery, Kent

1976 Contextual Analysis of Ritual Paraphernalia from Formative Oaxaca. In K. Flannery (Ed.) *The Early Mesoamerican Village*, pp. 333-345. Academic Press, New York.

Freeman, L., and J. Gonzalez Echegaray

1981 El Juyu: A 14,000-year-old Sanctuary from Northern Spain. *History of Religions* 21:1-19.

Hampton, O.W.

1999 *Culture of Stone.* Texas A&M University Press, College Station.

Muir, Robert

1999 *Zooarchaeology of Sand Canyon Pueblo, Colorado.* Ph.D. Dissertation, Archaeology Department, Simon Fraser University, Burnaby, B.C.

Peacock, Sandra

In press Perusing the Pits: The Evidence for Prehistoric Geophyte Processing on the Canadian Plateau. In S. Mason and J. Hather (Eds.) *The Archeobotany of Temperate Hunter-Gatherers.* Institute of Archaeology Occasional Publications, London.

Rousseau, Mike, R. Muir, D. Alexander, J. Breffit, S. Woods, K. Berry, and T. van Gaalen.

1991 Results of the 1989 Archaeological Investigations Conducted in the Oregon Jack Creek Locality, Thompson River Region, South-Central British Columbia. Permit No. 1989-76. Report on File at the Archaeology Branch, Ministry of Small Business, Tourism and Culture, Victoria, B.C.

Figures

Figure 1. The surface plan of HP 106 showing its relationship to HP 105 (to the left) and the designation of excavation squares. Large rocks occurring on the surface are also indicated.

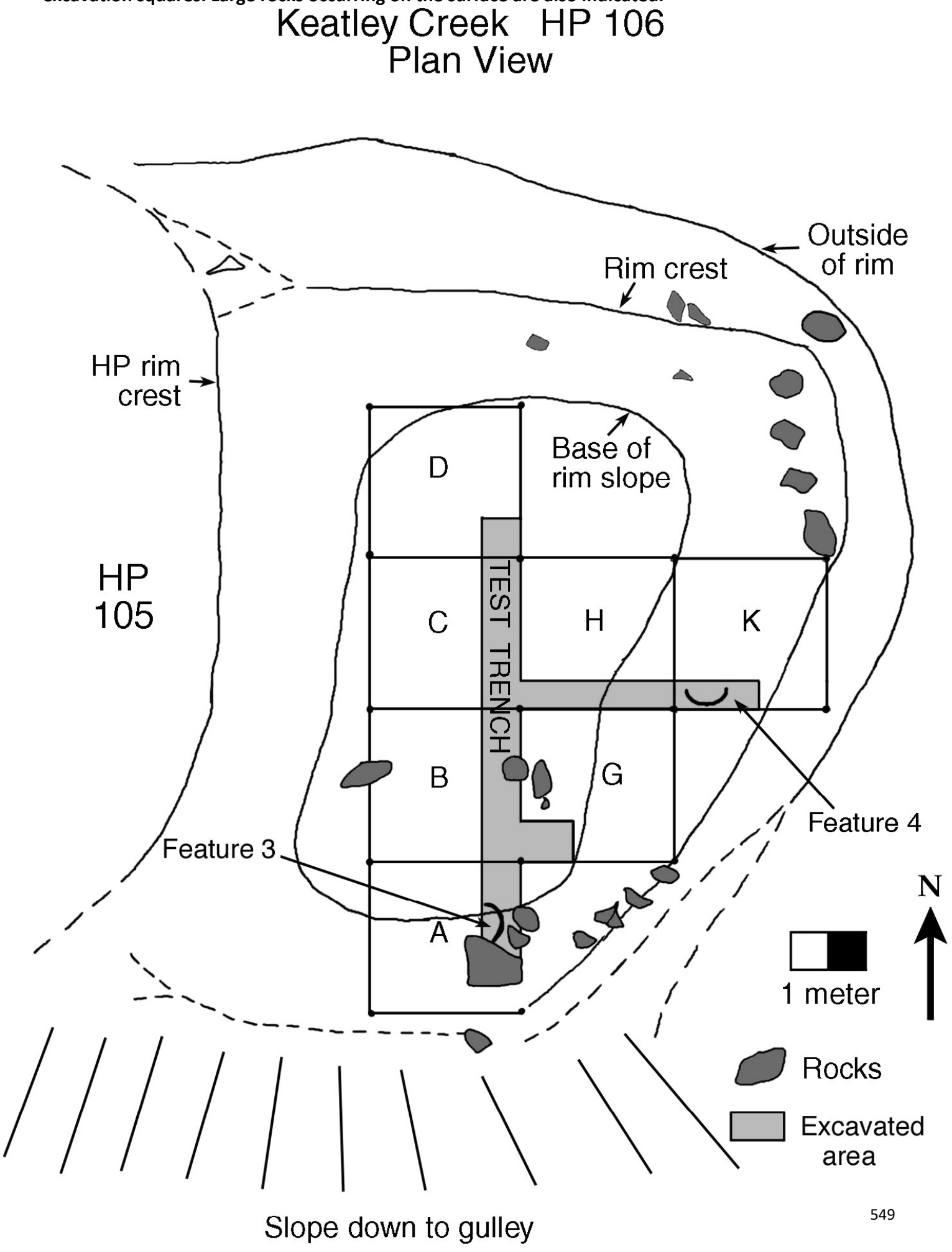


Figure 2. Floor plan of the test trench excavations in HP 106.

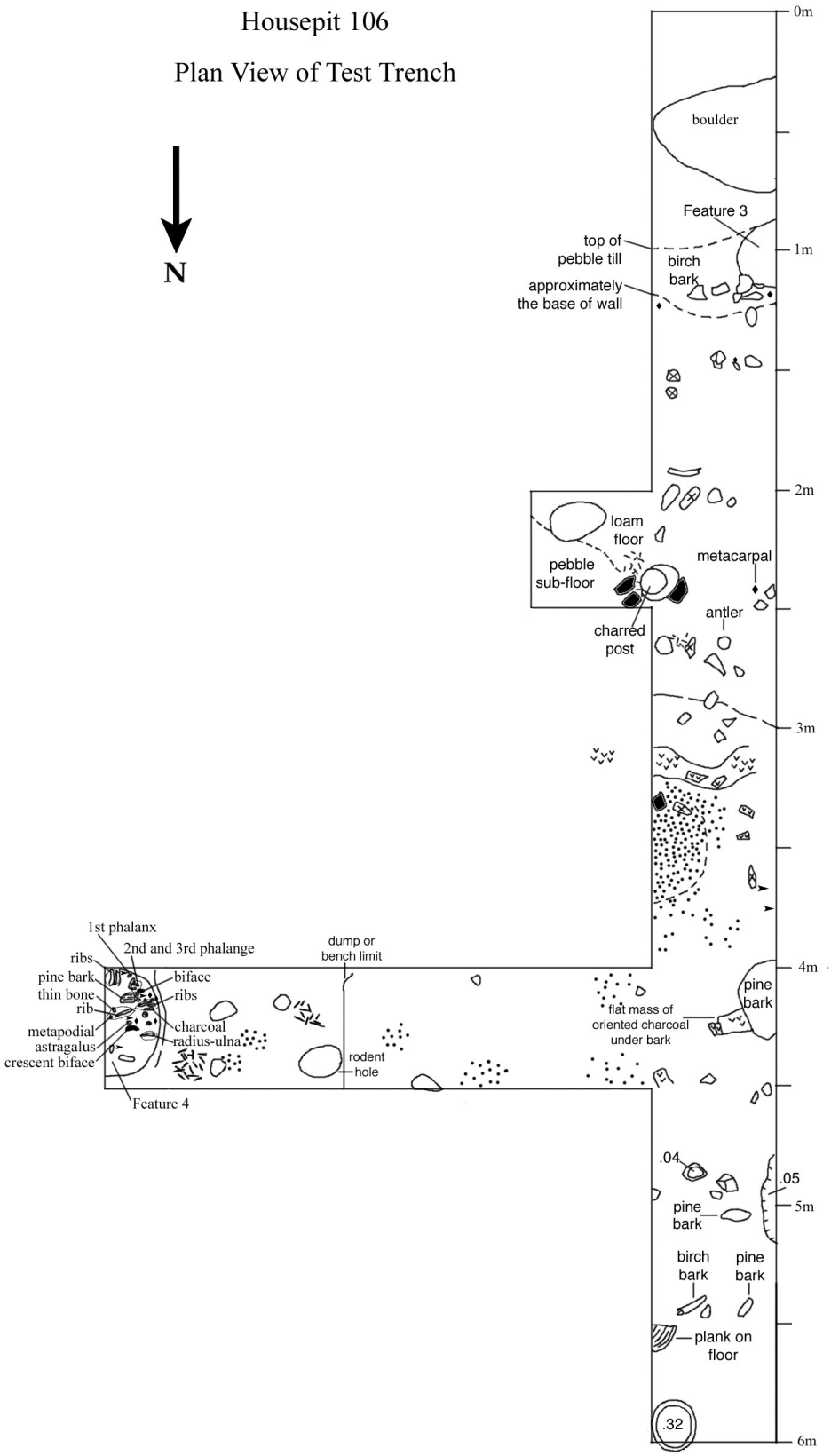


Figure 3. Stratigraphic cross-sections of the test trench strata in HP 106.

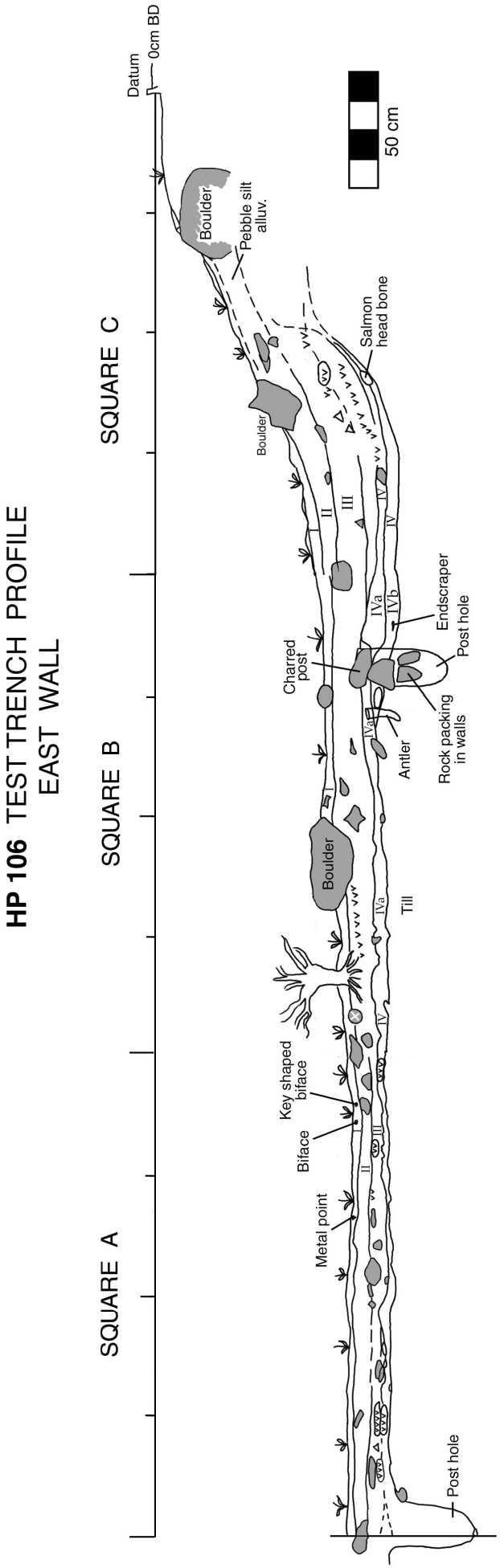
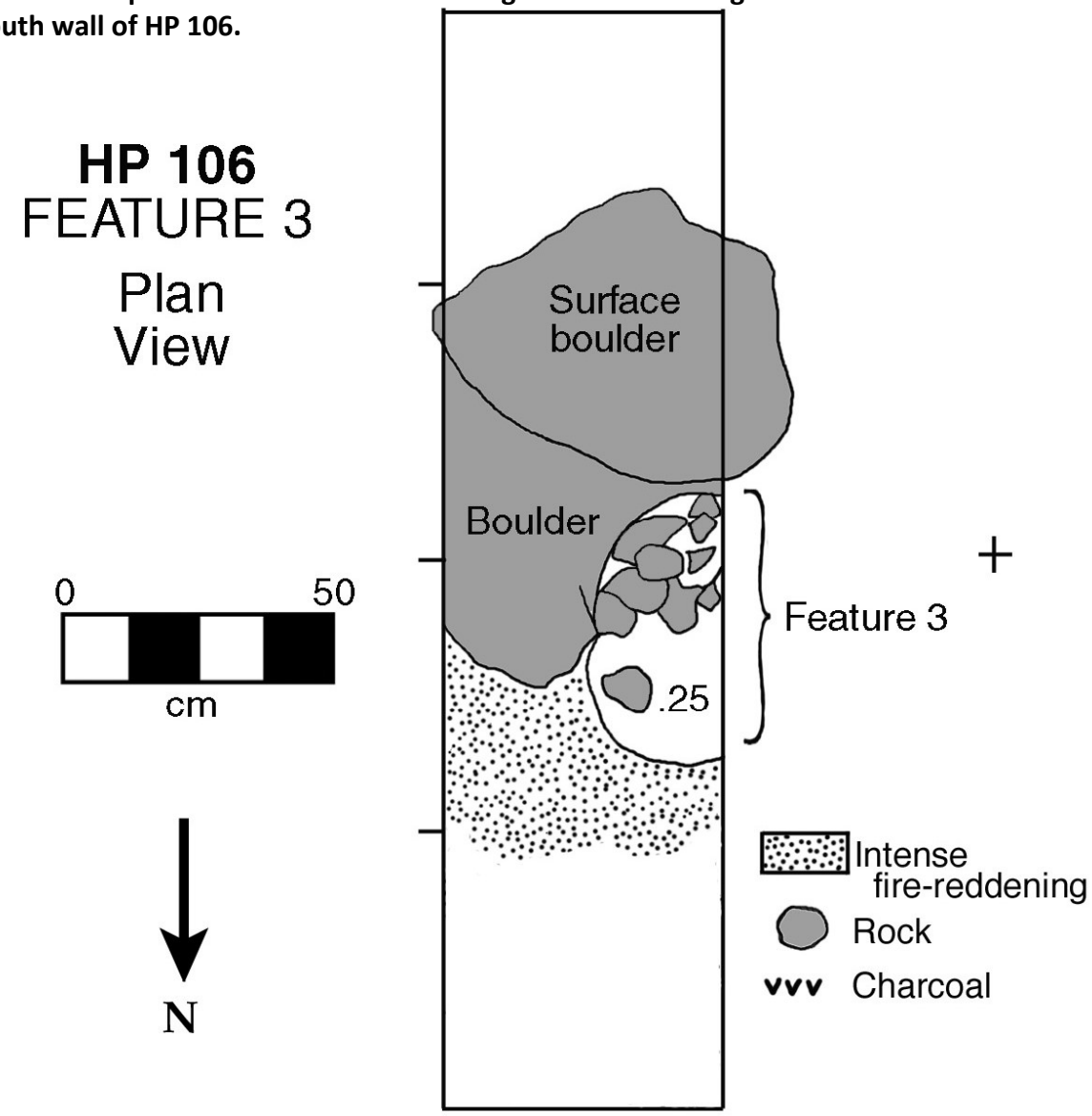


Figure 4. Feature 3 in Square A situated under the large boulder forming part of the south wall of HP 106.



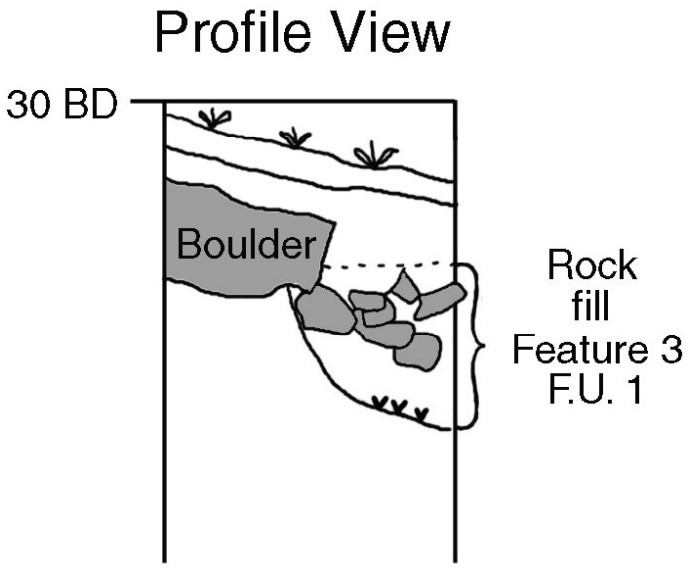
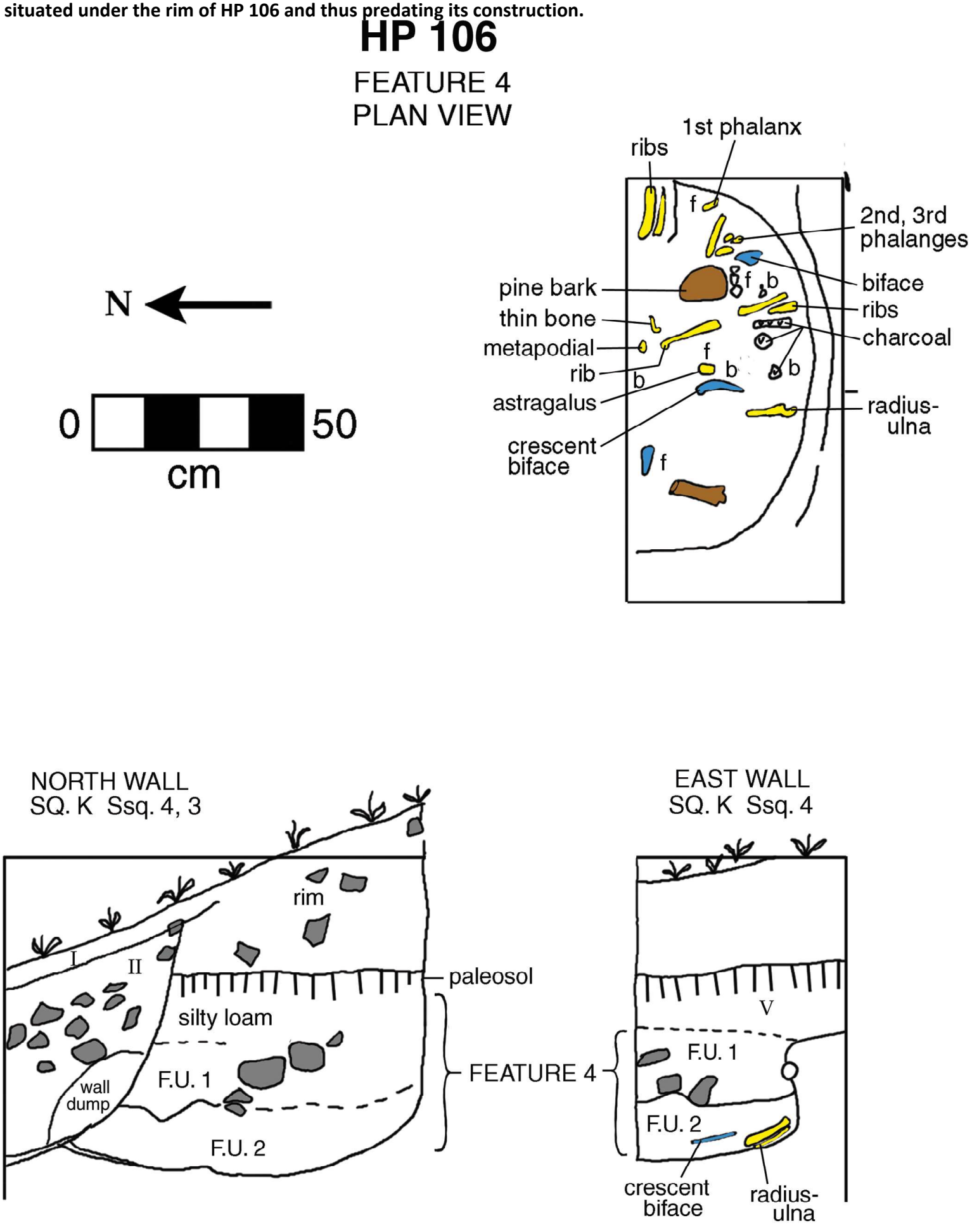


Figure 5. Feature 4 in Square K showing both plan view and the crosssection of this meat roasting pit situated under the rim of HP 106 and thus predating its construction.



Test Excavations of Housepit 107

Brian Hayden

Housepit 107 is a relatively small (8 m in diameter) structure located on the main terrace south of Keatley Creek, that is, on the opposite bank from the main part of the site (Vol. III, Preface, Fig. 1). The structure was tested in 1989. In 1999, the test excavation was expanded to determine whether the structure might have served any special function in relation to its relatively remote location and its very close proximity to HP 9 (15 m to the west) which is thought to have been the residence of a shaman or similarly specialized person. Specifically, I considered the possibility that HP 107 might have been used for ritual or secret society meetings and or feasting. While several excavated features in HP 107 seem consistent with such an interpretation, the paucity of artifacts and faunal remains make it difficult to advance such interpretations with confidence. The lithic assemblage is notable for its lack of retouched flake tools and its high proportion of billet or pressure flakes as well as 3 Plateau point preforms or points.

Excavators in 1989 thought that they had reached a floor level and sterile till in their 50 cm wide test trench in Squares A and B. However, after locating the plastic-lined walls of the original test trench, the subsequent investigations in 1999 failed to relocate anything resembling floor deposits either in the profiles of Squares A or B, or in the extended test trench in Square E (**Fig. 1**). In excavating under the bottom plastic lining, through what was called "sterile" soil in 1989, I continued to note some discoloration and soon exposed an extremely well-defined rock lined hearth with very well defined floor deposits on either side about 10-15 cm below the level

where the 1989 excavations stopped. While the floor deposits were easy to define to the south of this hearth, they became indistinct and difficult to define to the north. Because of time constraints and the very minimal amount of artifactual material in this structure, I decided not to continue searching for the rather elusive floor to the north of the main hearth (i.e., in Sq. A and the north part of Sq. B). In all of the housepits investigated at Keatley Creek, there are only two that had rock-lined hearths. These were HP 9 and HP 107. Thus, the presence of this feature and other distinctive similarities indicate that the two structures, only 15 m from each other, were closely linked in more than simply spatial terms.

Excavators in 1989 thought that there might be a poorly defined hearth on their "floor" in the southern half of Square B as represented by a circular depression with small cobbles, dark staining and scattered charcoal. Given the scant evidence of artifact deposition, and probably structure use, from the main floor, it is always possible that the 1989 excavators encountered an even less used and briefer occupation that occurred either during the collapse of the roof or from a briefly re-roofed structure. If there was an upper floor, it appears to be very difficult to identify and most likely represents a very ephemeral use of the structure.

Stratigraphy (Fig. 2)

Stratum I: This is a moderately loose, light gray brown (10 YR 5/3) sandy silt with about 10% granules, 2% pebbles, and 1 % cobbles. This stratum is fairly homogenous and represents post-abandonment colluvial and aeolian infilling of the depression.

Stratum II: In 1989, the original excavators thought that they had reached floor deposits which they labeled Stratum III. However, the more

recent excavations indicated that their Stratum III was simply a continuation of roof deposits and could not be distinguished from Stratum II. I have therefore subsumed the 1989 Stratum III under Stratum II and refer to the originally defined Stratum II as Stratum II A, while I refer to the originally defined Stratum III as Stratum II B.

Stratum II A is a moderately compact, medium gray brown (10 YR 4/2) sandy silt with about 15% granules, 5-30% pebbles, and 1-5% cobbles. There is some slight darker color gradation from north to south. This stratum represents predominantly roof fill although some slopewash deposits are also evident in its upper aspect. Recovered cultural materials include: a medium-sized corner-notched Plateau horizon projectile point from the very bottom of the stratum in Square B, a chalcedony biface fragment (also from Sq. B, about 25 flakes, and one mammal bone. Charred ponderosa pine bark and partially charred wood at the bottom of the stratum represent burned roof materials. In Square E, Stratum II strongly resembles till with no cultural material occurring in it.

Stratum II B is a fairly compact dark gray brown (10 YR 4/1) sandy silt with about 10% granules, 15% pebbles, and 20% cobbles. In 1989, this stratum was most evident in Square B and was excavated from 40-45 cm BS. Recovered cultural materials were sparse and included eight flakes, a salmon bone, and sparse scattered charcoal. A possible hearth feature (Feature 1) was thought to exist in the southern half of Square B (**Figs. 2 and 4**). It was approximately circular in plan with a saucer-shaped cross-section. It measured about 90 cm in diameter by 15 cm deep. A concentration of small cobbles, some fire-cracked, together with scattered charcoal and dark-stained sediments characterized the area of the feature.

Stratum III: This is clearly identifiable as a floor. It is a dark gray fine silty loam near the hearth with about 30% pebbles in local areas and even what appear to have been a pebble pavement and a pile of pebbles or pebble-rich dump almost like a column about 20 cm high situated on the floor in Square E Subsquare 9 (**Fig. 3**). Towards the north part of the housepit, this floor becomes much less distinctive in color and texture and is very difficult to identify. From the central hearth to the south wall and also for about a meter north of the central hearth, the floor deposits consisted of a very fine silty loam lacking any significant pebble or gravel content (**Fig. 2**). This reposed directly on the till substrate and was capped by distinctively darker floor loams with somewhat higher pebble and gravel contents that constituted the typical Stratum III deposits described above. There can be little doubt that a substantial amount of loess was brought into the structure to cover large sections of the floor immediately following its initial construction. These light colored bottom loams were generally devoid of cultural material.

Stratum IV: This stratum is a loose, light yellow brown (10 YR 5/4) sandy silt with about 5% granules, 5% pebbles, and 10% cobbles. It was encountered in the northern end of Sq. A and represents rim spoil consisting of redeposited till related to the initial construction of the house. This stratum was culturally sterile although a few bits of scattered charcoal and about six flakes were recovered at the edge of the stratum where it interfaced with Stratum II.

Features

Feature 1: This was a possible hearth (**Fig. 4**) described by the 1989 excavators. It is described above in the discussion of Stratum IIB.

Feature 2: This is a large storage pit. In fact, for a small structure, this feature constitutes an unusually large interior storage pit (**Fig. 5**). It is clearly associated with the bottom floor of the structure. It is over 1 m in diameter and 75 cm deep. Similar sized storage pits have only been found in the largest housepits at Keatley Creek and in small structures suspected of serving ritual or feasting functions (e.g., HP's 9, 105, and 109--Vol. III, Chaps. 7, 10.14, and 10.18). Of particular note is the fact that HP 9 is immediately adjacent to HP 107. In neither HP 9 nor HP 107, were there any remains at the bottom of the storage pits, except that in HP 107 a pile of cobbles with a few boulders had been thrown into the bottom of the pit before it was filled (**Fig. 5**). Part of a sheep horn core, two freshwater bivalve shell fragments, some bone fragments, a few flakes, and a bipolar core or biface fragment were found in the pit fill.

Feature 3: This feature consists of large cobbles forming a circle about 90 cm in diameter situated almost in the exact center of HP 107 (**Figs. 2 and 3**). There were 3 distinct layers of fill within the rock circle, each about 5 cm in thickness. The uppermost fill unit (FU 1) consisted of a very pebble rich (40%) soil that contained no cultural material and no FCR. Under that, there was a yellow loamy fill (FU 2) which was also sterile. At the bottom was a very black loam (FU 3) which contained a few flakes and one small piece of charcoal. Solid, compact yellow till lay immediately beneath FU 3, and there was a very minimal amount of fire-reddening of the surface of this till. Moreover, the very distinctive black FU 3 deposit continued underneath the circle of rocks that formed Feature 3, and extended several decimeters beyond the rock circle as a distinctively colored deposit. It gradually graded into fine loams that appear to have been used as flooring to cover the original till surface.

Although initially, it seemed clear that this was a hearth, the precise nature of this feature is somewhat enigmatic. Prior to the construction of the cobble ring, it appears that the general area of floor under and immediately surrounding the ring of rocks was used as some sort of hearth, producing a very rich black deposit (perhaps resembling Feature I higher in the stratigraphic sequence). However, the fires made in this area do not appear to have been particularly intense or frequent because there is very little fire-reddening of the underlying till. Why there should be so little charcoal but such dark discoloration of sediments is a bit puzzling. Either after the initial use of fires in this space, or perhaps after the space had ceased being used for fires, a ring of stones was arranged around the center of the space, perhaps some being pushed into the FU 3 deposits. However, there appears to be no fire-reddening of these rocks, nor any significant buildup of ash or other deposits inside the ring of rocks. Thus, either no further fires were lit inside the ring of rocks, or any fires that were lit were few and of minimal duration. Instead, shortly after the ring of rocks was set in place, a layer of yellow loam was spread out within the ring, but not outside it, and finally the ring was filled to the top with a pebble-rich deposit. It is rather enigmatic why people would take the trouble to create a ring of rocks but not use it as a fire pit, and fill it up with sterile soil shortly after creating it.

Discussion and Summary

Housepit 107 is certainly one of the more unusual structures that we examined at Keatley Creek. It is small in size but has an unusually large storage pit (Feature 2). It has what appears to be a rock lined fire pit (Feature 3) with no clear evidence that it was ever used as a fire pit after the

rock lining had been put in place. It also has one of the clearest occurrences of a floor that was intentionally covered with loess that had been brought in for that purpose. These are characteristics that make this structure distinctive at Keatley Creek, but they are also characteristics shared with the structure only 15 m away, HP 9 (except that the rock lined hearth in HP 9 was intensively used). Based on diagnostic artifacts found in them, both structures appear to have been occupied during the same period (the Plateau horizon) and the commonality of the above distinctive features makes it seem almost certain that the users of both structures were in contact with each other. However, the differences are also important, notably that there are abundant food (especially fish) remains, bone artifacts, prestige items, and lithic items in HP 9 during all periods of occupation whereas HP 107 is remarkable for its paucity of any kind of cultural material. From all the test excavations in HP 107, the floor deposits yielded only 12 salmon bones and one mammal bone fragment. The much thicker roof deposits (including the possible ephemeral floor) only included 52 salmon remains, 2 squirrel bones, 8 mammal bone fragments, a deer phalanx and metapodial, and a bird bone.

It is always possible that HP 9 and HP 107 were occupied successively by the same family, perhaps HP 107 only being used for a very short period either due to a death or for other reasons. However, the minimal use of the hearth, its intentional filling, and the general lack of evidence for frequent or prolonged use of HP 107 inclines me to view the other alternative with more favor. That is, I think it is more likely that HP 107 was, in fact, used as a specialized structure for occasional meetings of a ritual or secret society, and that the residents of HP 9 (if there were permanent residents) were possibly the custodians, and probably some of the leading cult members, of

this group. Secret societies tend to characterize the more developed types of complex hunter/gatherers (Owens and Hayden 1997), and they are typically created by elites in order to further their political and social control within communities. While such societies are often technically "open" to a wide range of people from varying socioeconomic statuses, there is usually a pronounced hierarchy in these societies. The highest and most costly positions in this hierarchy are generally reserved for rich and politically powerful elites. It appears to be only the highest ranking members that are admitted to the most secret ritual sanctuaries to commune with powerful spirits, whether in caves or special structures. Typically, too, these societies control significant labor and resources (largely drawn from aspiring members) in order to conduct their rituals and other activities. Costuming alone generally involves the use of exotic and precious skins, feathers, and decorations. Rituals undoubtedly required similarly rare paraphernalia.

During the winter, HP 107 may have been used for the most secretive aspects of secret society rituals from which normal people would have been excluded (probably including wives and children or other helpers of high ranking members). Once the secretive ritual and political business of the highest ranking members had been concluded in their special ritual structure (HP 107), they might adjourn to the nearby residence of the ritual custodian in HP 9, where his family and the assistants of other cult member families could have a warm fire and feast waiting. Such a scenario makes logical sense and would account for some of the major unusual features of both of these structures. For instance, the very large storage pits would make sense in terms of resource and ritual paraphernalia storage places for secret society feasting, rituals, and pooled finances. This scenario would also explain the similarities in hearths between the two structures and the low level of use of

the HP 107 hearths. It would also explain the dramatic differences in food remains at the two housepits, and perhaps explain the unusual emphasis on fins and heads in HP 9 as components of soups or other specialized kinds of feasting foods. Small titbits of fish or meat might be taken into the special ritual structure by some individuals as snacks, but no formal meals were probably consumed there.

This scenario would also be consistent with the unusual number and diversity of prestige items found in HP 9 (see Vol. II, Chaps. 7, and 13), especially if most of the participants in feasts were from elite families in the community who participated in secret societies. The number and diversity of the prestige items in HP 9 is very unusual for such a small structure; while the size of these structures is consistent with their use by a small, very select number of high ranking secret society members. Such a scenario is also consistent with the tentative indicators of shamanic material remains found in HP 9 and with the unusual remote location of these structures. Such a scenario would also explain why special efforts were undertaken to cover the floor of HP 107 (and to a lesser extent HP 9) with fine loess, for Grant Keddie (personal communication) recorded oral histories from the Interior that related the covering of structure floors with "clay" for special dancing lodges (Vol II, Chap 1, p. 21).

Finally, such a scenario is also consistent with a very similar occurrence of apparently specialized structures on Terrace 2: HP's 104, 105, and 106. Although these structures are Protohistoric in date, they share some striking similarities with HP's 9 and 107. Like the Plateau horizon special structures south of the creek (HP's 9 and 107), the Terrace 2 structures are situated in a remote part of the Keatley Creek site. Although the Terrace 2 structures have not been fully excavated, they are all relatively small and we know that

at least one of them (HP 105) had an unusually large storage pit. From this storage pit there came clear evidence of the storage of some prestige (probably ritual) paraphernalia--notably what was probably a button blanket--see Vol. II, Chap.13, Fig. 3A). Most striking, however, is the near proximity of these structures to each other and the dramatic differences in artifact contents which resembles the differences found between HP's 9 and 107. Specifically, HP 105 has an unusually high density of animal bones, fish remains (once again, especially fins and head parts), and other artifacts, whereas the structure immediately to its east (HP 106) is almost devoid of any cultural material at all. On the other hand, there are several indications of ritual behavior in both of these structures (HP's 105 and 106). In both of them there were long bones or antler thrust vertically and completely into the floors (see Vol. III, Chaps. 10.14 and 10.15). Impressionistically it also seems that both lithic assemblages were dominated by pressure and billet flake debitage indicating primarily men's participation in the activities in these structures. There were also indications of unusually intense and large fires associated with HP 106, but there is little evidence that the structure was used either very frequently or for a very prolonged period of time.

While it is unfortunate that more material remains were not associated with HP's 106 and 107 so that we might be able to confirm their use as special structures used for rituals or secret society meetings on the basis of positive evidence rather than inferences from broader patterns (including the lack of artifacts), I feel that there are enough peculiarities, enough indications, and enough distinctive patterns in the data to warrant a cautiously tentative interpretation of these structures as ritual or secret society structures that conform to a basic pattern among the largest complex Interior Plateau villages established at least during the Plateau horizon, if

not before, and persisting at least up until the Protohistoric period. That pattern consists of a pair of specialized ritual structures. One (to the east?) used for the most secret rituals and meetings of the highest ranking members of the cult or secret society; the other structure (to the west?) being used for feasting after the secret rituals. The feasting structure was probably open to lesser ranking cult or secret society members, including wives, and younger family members who prepared and participated in the feasting.

A similar pattern of special ritual structures reserved for the most important members of the communities also seems to have existed on the Coast, although it is not clear from ethnographic accounts where any feasting associated with these cult structures may have taken place. On the Plateau, the auxiliary feasting structures may have been the residences of secret society shamans or priests and their families, and either one or both of each pair of structures may have been used for the storage of pooled society food resources, wealth, and ritual paraphernalia. Alternatively, all structures may have been uninhabited except for ritual feasting events. The substantial lithic remains in some of these structures (e.g., HP 9) appear more consistent with the idea of permanent residents while the often still-articulated vertebrae of fish and mammal bones (in HP's 104 and 105) would seem to indicate a more episodic use rather than a constant presence. Considerably more excavation will be necessary in order to determine if this constitutes a genuine pattern or if it is only a fortuitous coincidence of remains and observations at Keatley Creek.

References

Owens, D'Ann, and Brian Hayden

1997 Prehistoric Rites of Passage: A Comparative Study of Transegalitarian Hunter-Gatherers. *Journal of Anthropological Archaeology* 16:121-161.

Figures:

Figure 1: Plan view of HP 107 showing the designation of excavation squares and the area excavated.

Figure 2: Cross sections of the east wall of the test trench excavated in 1999 (above) and the west wall of the test trench excavated in 1987 (below).

Figure 3: The plan of objects found on or in the floor deposits (Stratum III) of the test trench in Squares B and E (1999 excavations).

Figure 4: Plan of the possible hearth (Feature 1) identified in the 1987 excavations.

Figure 5: Plan and cross section of Feature 2, the large storage pit adjoining the south wall of HP 107.

Figure 1. Plan view of HP 107 showing the designation of excavation squares and the area excavated.

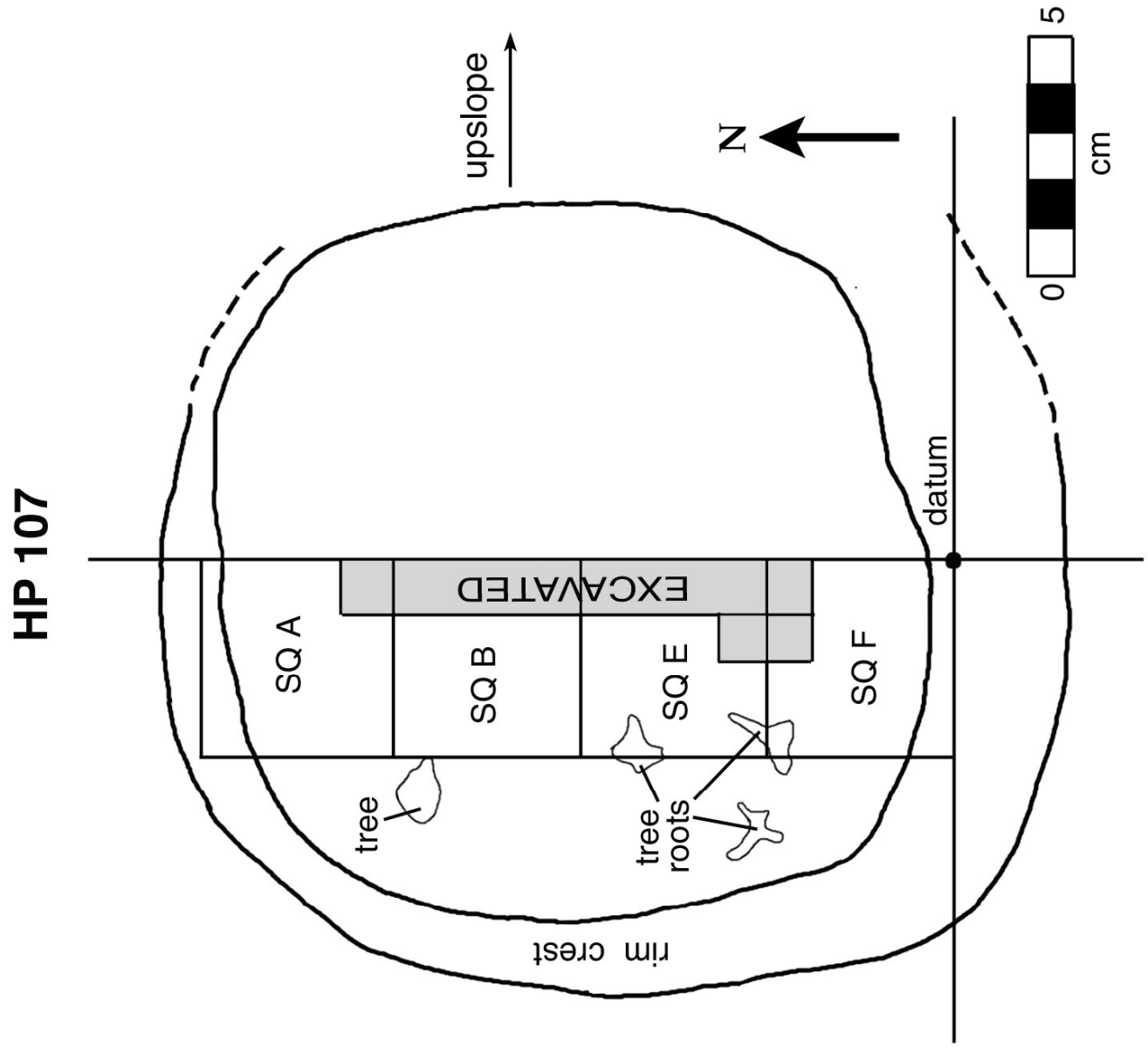
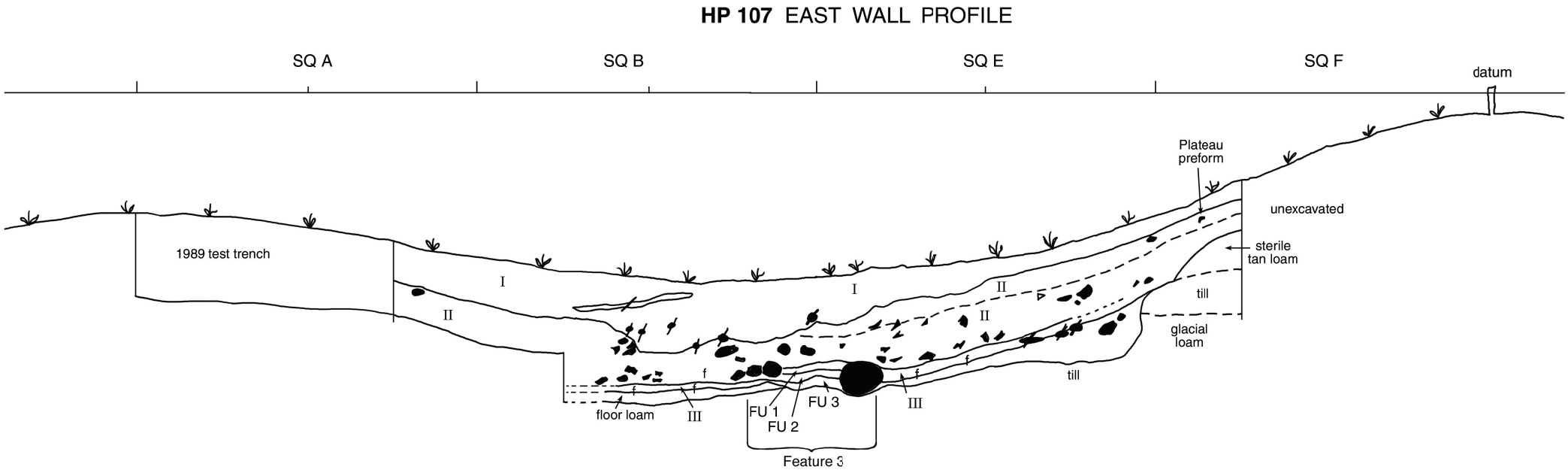


Figure 2. Cross sections of the east wall of the test trench excavated in 1999 (above) and the west wall of the test trench excavated in 1987 (below).



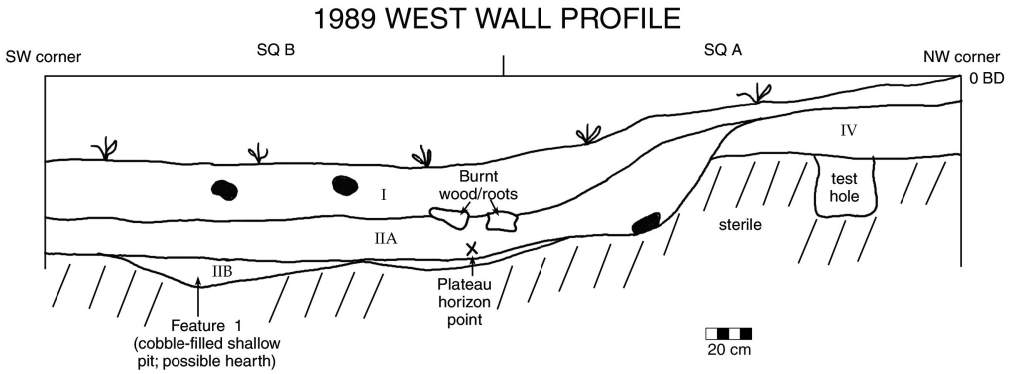


Figure 3. The plan of objects found on or in the floor deposits (Stratum III) of the test trench in Squares B and E (1999 excavations). HP 107

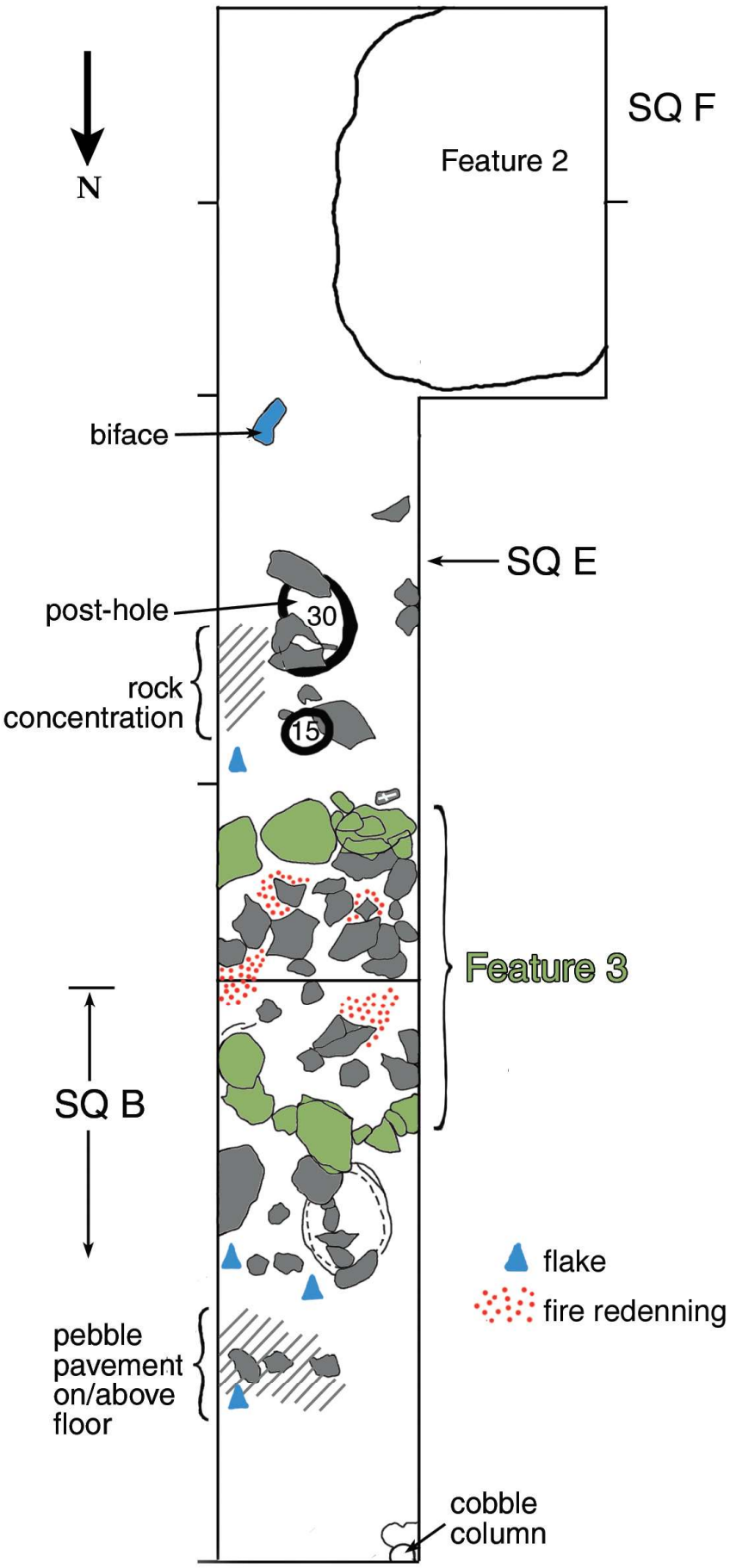


Figure 4. Plan of the possible hearth (Feature 1) identified in the 1987 excavations.

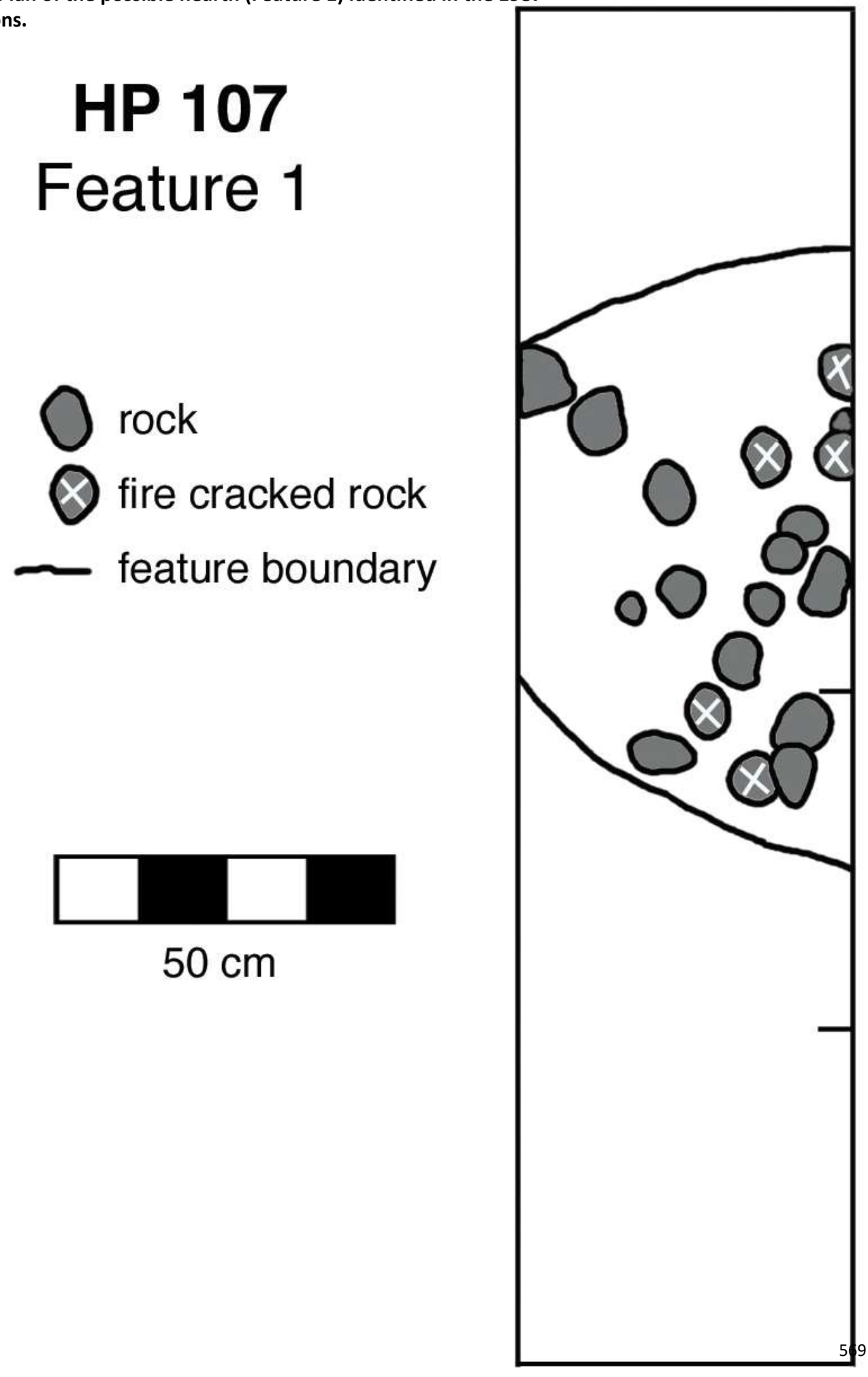
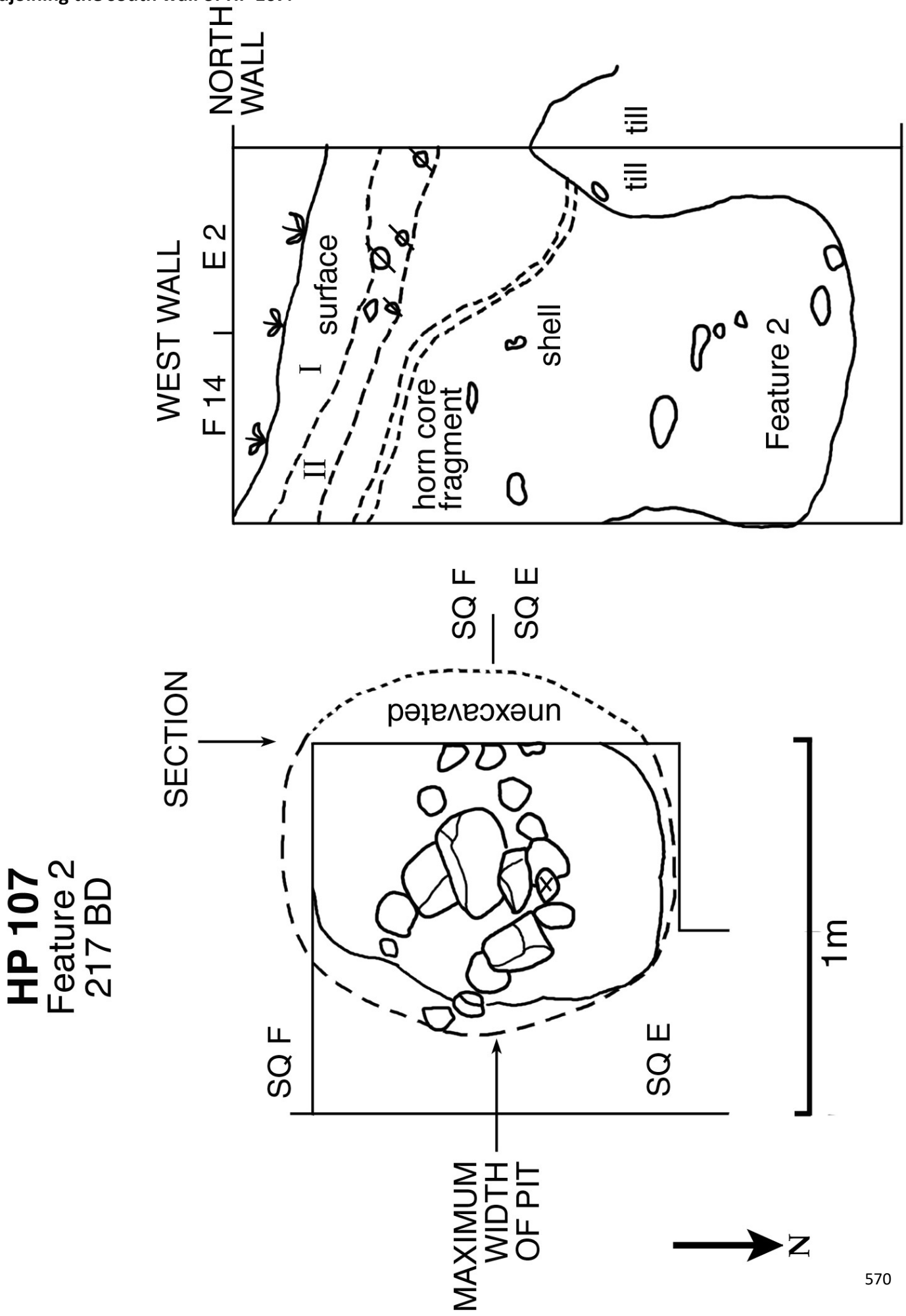


Figure 5. Plan and cross section of Feature 2, the large storage pit adjoining the south wall of HP 107.



Housepit 108 Excavation Results

Mike K. Rousseau

Housepit Location and Description

Housepit 108 is located on the south side of Keatley Creek on the uppermost terrace about 50 m southwest of HP 9 and 107 (Vol. III, Preface, **Fig. 1**). Housepit 108 measures ca. 6.5 m north-south by 6.5 m east-west, and its surficial rim to basin depth is about 1.0 m. Surficially, the house depression is circular in plan, and has a bowl-shaped cross-section with fairly steep walls. It is situated on relatively horizontal terrain, and it has a well-pronounced lipped rim surrounding the entire house. A slight break in the rim exists along the northeast aspect of the rim which possibly represents a side entrance. A pot hunter's hole, about 0.75 m in diameter, is evident near the western edge of the house.

Test Trench Excavation Results

Two test excavation units measuring 2.0 m north-south by 0.5 m east-west were dug into the southern half of the housepit. The northern unit was designated Square A and the southern one Square B. Together they formed a test trench 4.0 m north-south by 0.5 m east-west that extended from the center of the house to its southern rim (**Fig. 1**). Only one occupation episode was identified. The average depth of cultural deposits within the house extended to about 40 cm below surface (BS), and five distinct strata were identified (**Fig. 1**).

Stratum I

Stratum I is a moderately compact, medium gray brown (10 YR 4/2) sandy silt with about 5% granules, 5% pebbles, and 1% cobbles. It was encountered throughout both excavation squares between about 0 and 8 cm BS, and it represents post- occupational fluvial and aeolian sediment infilling. Recovered cultural materials were sparse, consisting of a total of six small flakes and three small fire cracked rocks (FCR).

Stratum II

Stratum II is a moderately compact, medium gray black sandy silt (10 YR 3/3) with 20% granules, 20% pebbles, 10% cobbles, and 2% small boulders. It was encountered in both excavation squares, and its thickness varies between about 8 cm and 25–30 cm BS. It represents a mixture of roof deposits and slopewash sediments. A few flakes and four pieces of FCR were recovered, the latter probably relate to a central hearth (Feature 1) associated with Stratum III below.

Stratum III

Stratum III is a fairly compact, medium gray brown (10 YR 5/4) sandy silt with 20% granules, 30% pebbles, 10% cobbles and 10% small boulders. It extended from about 25–30 cm to 40 cm BS in both excavation squares, and represents house floor deposits (**Fig. 1**). Recovered cultural materials include: a bipolar core fragment; an unformed unifacial flake tool; about 50 flakes; several fish (salmon) and mammal bone fragments; two beaver tooth fragments; a few definite pieces of FCR, and; and some scattered charcoal. The relative thickness of the floor deposits and moderate amount of cultural materials suggest that the occupation of the house may have been

moderately brief (i.e., perhaps only a couple of years). The thickness of the floor may also be due to sediments filtering through a poorly constructed roof.

A central hearth (Feature 1) was identified in the central portion of Square A between about 25 cm and 35 cm BS. It was indicated by fire-reddened matrix mottled with dark gray brown sandy silt and some scattered charcoal. It is basin-shaped in cross-section, and is estimated to measure about 60 cm in diameter and extends about 10 cm into the upper part of Stratum III. That it occupies only the upper part of Stratum III *may* indicate that it was constructed during the latter part of the house occupation episode(s). Several flakes, some FCR, and the uniface were associated with this hearth feature.

Stratum IV

Stratum IV is a compact, light gray brown sandy silt (10 YR 5/3) with 10% granules, 10% pebbles, and 10% cobbles. It was encountered only within the southern end of Square B between about 5 cm and 32 cm BS. It represents redeposited till and rim-spoil deposits associated with the construction and occupation of the house. Only three flakes were recovered from this stratum.

Stratum V

Stratum V is a loose, light brown silt (10 YR 5/4) with about 5% pebbles. It represents a culturally sterile aeolian paleosol at the edge of the house.

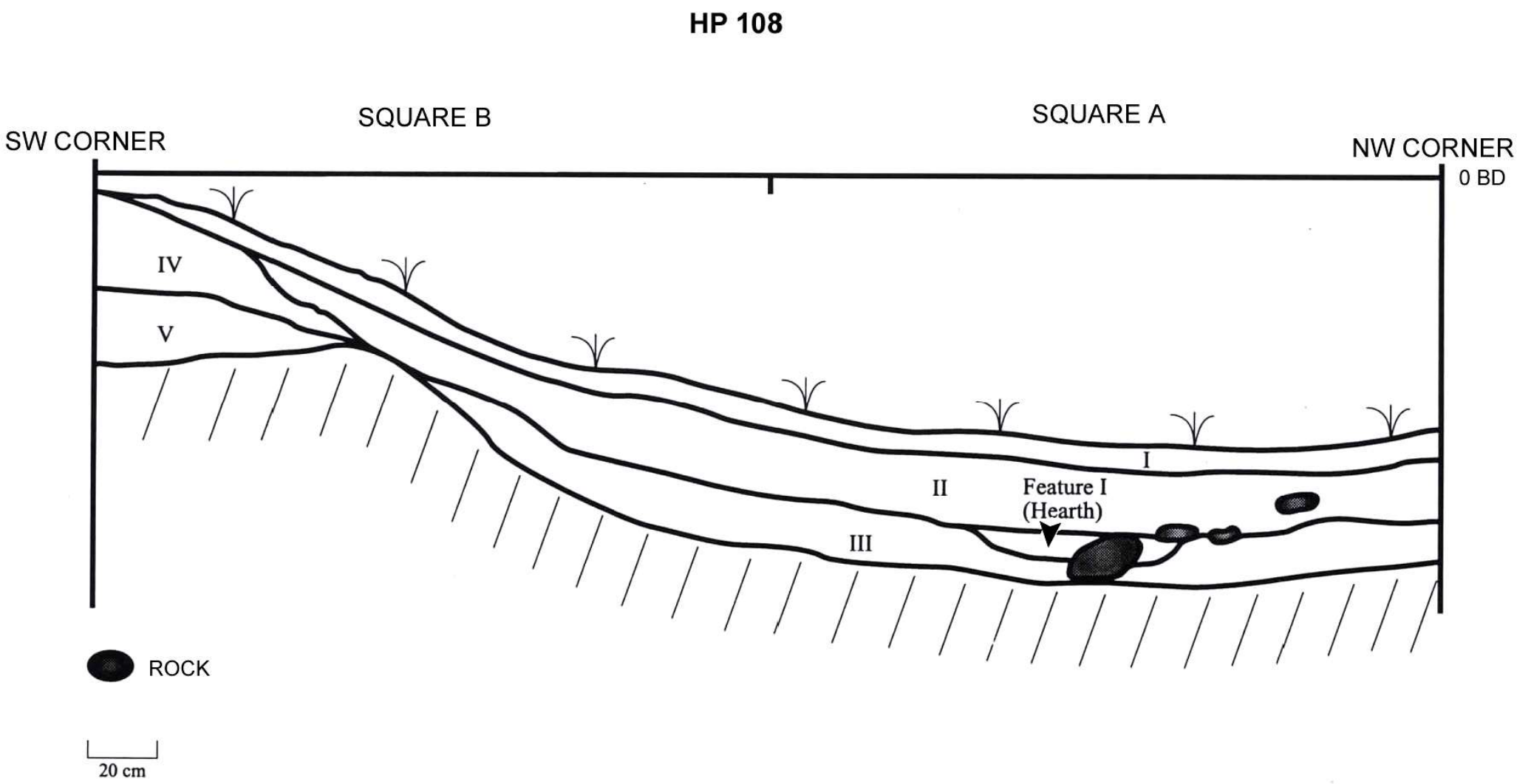
Excavation Summary and Conclusions

Test trench excavations within HP 108 revealed that this dwelling contained a single occupation horizon which may represent use of the house for only a few years. The central hearth (Feature 1) is unusual in that it contains several small boulders. No temporally diagnostic artifacts were recovered from the excavated portions of the housepit, however, based on the small size and shape of the house, it may date to the Plateau horizon, but this remains to be shown. Because of its unknown age affiliation, and relative paucity of artifactual data, it was not subjected to further detailed investigations.

Figures

Figure 1: Housepit 108 west wall profile

Figure 1. Housepit 108 west wall profile



Excavations in Housepit 109

Brian Hayden

Housepit 109 is the only housepit structure on the first moraine terrace overlooking the core of the Keatley Creek site to the east (Vol. III, Preface, **Fig. 1**). It is a medium sized housepit 9 m in diameter **(Fig. 1)**. Because of its unusual location and because of several unusual aspects encountered during the test trenching of this structure in 1989, I decided to extend excavations inside the housepit in 1998. The goal of the extended excavations was to determine if HP 109 was a special function structure or simply a normal residence. The unusual aspects of the deposits noted in the 1989 testing operation were:

1) the occurrence of a dog sacrum and vertebrae wrapped in birch bark associated with the upper floor;
2) an unusually deep cultural fill (over 75 cm of fill) under the upper floor seeming to represent a single intentional fill episode; and
3) the reporting of a dense lens of ochre at the bottom of the test excavations.

Moreover the 1989 testing operation never did reach the bottom of the cultural fill in HP 109 so that we had no information on the nature of the bottommost deposits. All of these aspects were unique at the site. I reasoned that if the structure was a special function structure, it should exhibit non-typical lithic and/or faunal assemblages and perhaps have non-typical features or even fragments of prestige objects or special function objects. After the 1998 excavations, the results were still ambiguous but intriguing. Carbonized roof beams laying on the upper floor were dated to

220 +/- 50 BP. This is exactly contemporaneous with HP 106 and very close in date to occupations in both HP 104 and 105, all on the second terrace above HP 109.

Stratigraphy (Fig. 2)

Stratum I: This is a moderately compact, medium dark brown (10 YR 3/1) sandy silt with <10% pebbles and 20-40% granules (**Fig. 2**). It is a typical surface colluvium inside housepit depressions derived from the roof surface and soil formation processes. This surface thickens at the juncture of the roof and wall, but thins and becomes more pebbly and gravelly as one ascends the wall slope.

Stratum II: This deposit is composed of roof collapse material and is a moderately compact black (10 YR 3/2) sandy silt with about 10-20% pebbles. The roof is relatively thin throughout Squares A and B and is absent from Square C. The thinness of these roof deposits and their absence above much of the upper floor implies that this housepit depression may have been last used as a mat lodge with a thin earthen embankment around the roof edges, probably for a fairly short time period. Charred, semicharred, and uncharred roof beams occurred in the bottom of this stratum, often resting directly on the Stratum III floor. In some cases, bark slabs lay over the roof beams, and mold seemed to be actively growing on uncharred sections of beams, indicating a relatively recent construction and collapse of the structure.

Stratum III: This is a floor deposit composed of moderately compact gray black (10 YR 3/2) sandy silt with 10-25% pebbles. It is highly organic and there are many exotic lithic materials in the floor and its associated pit features (e.g., Feature 1). There were abundant lithic and faunal remains

associated with the floor seeming to reflect an intense occupation over a short time period as indicated by the thin roof and probably temporary structure erected within the basin of an earlier collapsed structure. There was an enigmatic charcoal-filled depression below the floor of Subsquare 2 of Square B.

Stratum IV: This stratum seems to represent both cultural and sterile fill material that was intentionally dumped into an unusually deep housepit depression. I refer to it as "construction fill." It is a mottled gray/black and yellow brown (10 YR 4/1 and 10 YR 5/4) sandy silt with up to 60% pebbles. Substantial numbers of lithics (almost all exotic cherts and chalcedonies) were associated with this stratum in localized pockets while other zones of this fill were almost sterile, lacking even FCR. Occasional faunal remains including fish, large fragments of deer bones, shellfish fragments plus indications of hearths may represent temporary fires built for work feasts or work snacks. There were several examples of veritable lithic "dumps" of exotic material debitage with flakes piled on top of each other. These probably were generated by lithic production activities adjacent to the housepit being filled in and simply represent the discard of waste material to help fill in the old depression.

Stratum V: This deposit also represents material intentionally dumped into the HP 109 depression in order to raise the floor level to the height of the upper floor. The extended excavations of 1998 failed to identify a clear distinction between Stratum IV and V deposits, and thus, Stratum V has been subsumed under the Stratum IV heading. In 1989, a concentration of red ochre powder was reported near the bottom of this fill deposit (at 100 cm BS) in the southwest corner of the Square B test trench, however, it now appears that this was more likely an intensely fire-reddened deposit. As in

Stratum IV, lithics occur in locally variable concentrations and are almost entirely exotic cherts and chalcedonies.

Stratum Va was defined as a light colored (10 YR 6/4) sterile lens of dumped material within Stratum V.

Stratum VI: is a curious deposit of brown (10 YR 6/6) loam resembling aeolian loessic deposits with few pebbles that usually overly sterile till in offsite areas. However, in this case, the loam which is up to 20 cm thick, lies over the distinctive lower floor deposit (Stratum VII). Since there is no roof deposit, or any other kind of deposit between this loam and the floor, it seems most likely that this loam was brought into the structure by the lower floor occupants and was used to raise the level of the floor (possibly to counteract water seepage?) and provide a soft and dry floor cover. An intentional covering of the floor is also indicated by the occurrence of a large flake found resting on a rock laying on the bottom of this deposit and by the occurrence of relatively abundant fish remains in Subsquares 6 and 10 of Square B. An early date for this deposit is indicated by the predominance of trachydacite flakes and caliche evaporite deposits on the bottom of many flakes and rocks. There appears to be no roof deposit or slope colluvium covering any of the lower floor deposits which seems curious given the long interval that is implied between the abandonment of the lower floor and the construction infilling of the depression in preparation for the upper floor occupation. A Shuswap style point (Vol. I, Chap. 3, Fig. 6) was found in a deposit that may have either been construction fill (Stratum IV) or early floor fill (Stratum VI).

Stratum VII: This constitutes the lower floor of HP 109 and rests directly upon sterile till in some areas, but is underlain by lenses of till-like material and an additional black lens in some places. In some areas this floor

was very distinctive, while in other cases there seems to be no appreciable floor accumulation or deposit and the material used to fill the original house depression (Stratum IV and V) seems to rest directly on sterile till. Where it was easily identifiable, the lower floor was more silty and loamy than the construction fill (Stratum IV) or the underlying till and appears to have been composed of soil that was largely brought in. In Subsquare 11 of Square B, there was a clear deposit of clean silt under the floor and some was banked up against the wall indicating that special flooring soil had indeed been brought in and deposited on top of the till surface. The floor varied in color from black to brown. Trachydacite dominated the lithic assemblage and many flakes and pebbles had caliche evaporite deposits on their undersides. Fish remains were the most common faunal element in the floor deposits.

Stratum X: This was sterile till which contained up to 60% pebbles in some areas.

Features

Feature 1989-1: This was recorded as a very shallow depression in the center of the test trench in Square A. Excavators had difficulty determining if this depression was simply a local dip in the floor (Stratum III) since its fill is similar to floor deposits, or if it was an intentional excavation. This still seems unclear.

Feature 1989-2: This feature consisted of relatively deep rubified sediments beneath the floor (Stratum III) in the south end of the test trench in Square B (**Fig. 3**). Reddening extended about 10 cm into the underlying deposit (Stratum IV) which is a depth consistent with an intensely used hearth.

Feature 1989-3: This is another shallow depression in the upper floor (Stratum III) filled with floor-like sediments and seemed to be lined in places with birch bark with a mat of burned fir needles beneath the bark. Some fish ribs and ochre occurred in the fill. This feature also occurs in the south portion of the test trench in Square B and, according to field notes, would seem to occupy the same position as Feature 2. Excavators again had difficulty determining if this was simply a localized dip (8 cm deep) in the floor deposits or an intentionally excavated depression.

Feature 1998-1: This is an unusual hearth-like feature since it occurs at the very bottom of the fill (Stratum IV) and extends through the loam fill (Stratum VI) covering the bottom floor. The remaining rubification was only 1-2 cm thick (the upper portion having been removed in 1989), but it is extremely intense and may have been mistaken for ochre powder by excavators in 1989 when they encountered the upper portion of this feature. It is unclear if this was a fire set in the lower portions of Stratum IV (in which case it would have had to be a work fire lit during the infilling of the housepit depression with Stratum IV deposits), or whether this feature represents a fire lit on the surface of the loam (Stratum VI) after it was deposited over the lower floor when the earlier structure was still in use.

Feature 1998-2: This is another hearth that clearly occurs within the construction fill represented by Stratum IV. It is situated in Subsquare 15 of Square B and can be seen in the stratigraphic profiles (**Fig. 2**) 26 cm below the upper floor and 50 cm above the lower floor. There are a number of faunal remains associated with it including several broken deer long bones, one piece of antler, one rabbit-like scapula. The upper part of this deposit is dark black, while fire-reddening extends to a depth of about 9 cm. It seems

that this may have been a work feast hearth for preparing meals for workers filling in the housepit depression.

Feature 1998-3: This was originally thought to be a pit depression dug into the upper floor (Stratum III) and construction fill (Stratum IV). It had a distinctive basin shape and some color differences with the surrounding Stratum IV matrix in Subsquares 12 and 16 of Square B. However, the shape was unusual and boundaries were not always clear cut. Moreover, the exotic chert artifacts in the fill of this "feature" were exactly the same as those in the rest of Stratum IV. It became apparent that this was more likely simply a fortuitous basin shape created by the infilling of the older house depression with construction fill originating from different colored deposits. This seems the most likely interpretation at present.

Feature 1998-4: This was one of the most difficult to define features encountered at Keatley Creek. It is a large storage pit about 80 cm deep dug down from the upper floor (Stratum III) through all of the Stratum IV, VI, and VII deposits, stopping at sterile till. The outline of this pit is very clear where it cut through the west wall of the earlier house both in section and in plan view (**Figs. 2 and 4**), however, the boundary of the east side of the pit with Stratum IV is very indistinct. The existence of this pit is supported by the concave nature of the fill units visible in stratigraphic sections in the center of the pit (**Fig. 2**) and by the complete absence of any lower floor deposits immediately under the inferrable boundaries of the pit. It is also a size and shape that is consistent with other large storage pits that have been excavated in small structures apparently used for rituals. Interestingly, as in other large storage pits (notably some of those in HP 7--see Vol. I, Chap. 10, Appendix 3), a deer scapula was left in the pit in an almost vertical position against the pit wall (**Fig. 2**). Such scapula may have been used for

excavating the large amount of dirt needed to be removed from these pits and to fill them. An earlier storage pit may have existed to the east of Feature 1998-4, however, this is even less certain.

Artifacts:

Lithic artifacts from HP 109 pose some of the most interesting problems at Keatley Creek. The chipped stone associated with the upper floor (Stratum III) and the construction fill (Stratum IV) is almost exclusively made from exotic cherts and chalcedonies. This is the complete reversal of the pattern in virtually every other housepit at the site where vitreous trachydacites characteristically make up 80-95% of the assemblages. The predominance of cherts at HP 109 is even more enigmatic since almost none of the chipped stone in the construction fill appears to have been used or modified, and it occurs very abundantly in local pockets sometimes as piles of flakes touching each other. Clearly, these must have been thrown into the construction fill as a coherent dump of flakes probably produced by someone flintknapping adjacent to the fill activities very possibly for the production of bifaces which may have been used as gifts to workers since the scale of production seems so large. One hesitates to invoke ritual explanations yet again for such an unusual occurrence, however the occurrence of so much exotic raw material is extremely enigmatic and practical explanations do not come easily to mind unless there was a major shift in access to raw materials that accompanied the Protohistoric period. This seems possible. For instance, during a brief period after the horse was introduced and before metal became commonly available, the horse may have enabled individuals to travel farther to obtain better quality lithic materials thus completely changing the character of early Protohistoric raw

material procurement and use. Horse remains were recovered from a cache pit at the southern end of the site in association with Kamloops points, thus indicating that horses were present in Protohistoric times (see the description of EHPE 21 in Vol. III, Chap. 11.22). The analysis of lithic materials recovered from the 1989 test trench is reported by Spafford (Vol. II, Chap. 14). Of note is the unusually high percentage of bifaces, probably indicating male dominated activities. A floor plan of artifacts recovered from the upper floor is presented in **Fig. 5**.

The lithic assemblage associated with the lower, earlier floor (Stratum VII; see also **Fig. 4**) was remarkable in terms of its paucity. The few flakes and modified artifacts that did occur there were all almost entirely vitreous trachydacite. Since the 1989 excavations stopped before reaching the lower floor, these have not been analyzed in detail, but field observations noted the prevalence of both pressure flakes and bipolar flakes/cores. If detailed analysis supports the field observations, this would constitute a very unusual composition of modified lithic artifacts compared with virtually all other floor assemblages at the site. A sandstone abrader or saw was found on the floor and there were an unusual number of large cobbles and boulders on the floor. There was also an unusually smooth round cobble in the southeast corner of Square B, reminiscent of some of the special cobbles venerated by New Guinea Highlanders in their sanctuaries (Hampton 1999).

There were also some unusual faunal remains associated with the upper floor (Stratum III). In particular, the sacrum and a few articulating lower lumbar vertebrae of a dog together with some salmon bones were found covered with a thick layer of fir needles with the sacrum wrapped in birch bark under a rock in Square B (**Fig. 5 and 6**). These appear to represent the remains of a meal and constitute the best evidence that we

have for the consumption of canids at Keatley Creek. There were 33 canid bones from the floor (including the sacrum and several lumbar vertebrae already mentioned) recovered in 1989. In 1998, many more salmon bones were recovered from the floor in some places forming "carpets" of small fin and rib elements. These have not yet been analyzed in detail.

It is interesting to note that both the upper and lower floors contained bird bones, although these have not yet been identified to species.

Discussion

There are certainly a number of odd aspects to HP 109. It is the only substantial structure on Terrace 1 which overlooks the core of the site (Vol. III, Preface, **Fig. 1**). There is a very small, insubstantial and enigmatic structure only a few meters to the south (EHPE 26, Vol. III, Chap. 11.27), and there is some sort of roasting pit immediately to the east (EHPE 24, Vol. III, Chap. 11.25) as well as a series of cache pits somewhat farther away on the terrace that may or may not be associated with HP 109. It is certainly interesting that one of these cache pits (EHPE 10; Vol. III, Chap. 11.12) that we tested was notable for the large number of deer or elk bones left in it which seems to indicate stored feasting foods (Romanoff 1992). Thus, HP 109 has a unique location and unusual associations with other features.

There are two occupations represented in HP 109. The lower, undated floor lacked any significant charcoal but seems to be associated with a Shuswap point. The deposits appear quite old due to caliche evaporite deposits on the undersides of many artifacts and rocks, and the

occupation may be contemporaneous with the use of the roasting pit only a few meters to the east. The lower occupation is remarkable among all the structures at Keatley Creek for its extraordinary depth, especially for such a small structure. The lower floor was covered with loams and sands brought in which may indicate a ritual or high status structure. There are few lithic remains, most of which appear to be atypical of normal residential assemblages, and there are a moderate number of faunal remains, mostly fish but including a probable bird wing bone. The occurrence of numerous large cobbles and a boulder on the floor is also unusual as was the occurrence of a particularly round and smooth cobble near the wall. There are no deposits that seem to represent an earth covered roof over the bottom occupation, nor are there are any carbonized beams indicating that the structure was burned as was usually the case at Keatley Creek. The lack of an earth covered roof is consistent with other interpretations of the earlier structures at the site (Vol. I, Chap. 17). If this was the case, it may well be that the earlier structures were not intentionally burned either since burning may have only been employed to facilitate the removal of earth for re-roofing events.

The upper floor also has its enigmatic aspects. This occupation was dated to 220 +/- 50 BP which is exactly contemporaneous with HP 106 on Terrace 2, immediately above HP 109, and is essentially contemporaneous with the occupation of HP 104 and 105, also situated on Terrace 2. It seems clear that whoever decided to occupy HP 109 in the Protohistoric period put in a great deal of effort to fill in a pre-existing housepit with about 75 cm of "construction fill" before establishing a new, and apparently not very substantial structure, given the thinness of deposits that can be interpreted as roof covering soil. One wonders why a new, less labor-demanding

housepit excavation was not undertaken, or even more shallow housepit depressions re-occupied. The people who went to great effort to fill in HP 109 used a very unusual suite of lithic raw materials that differed dramatically from those previously used at the site, and they manufactured more bifaces than at other structures. A bird bone was also associated with the upper floor as were very high densities of salmon ribs and fin elements. Bird bones may be related to ritual work, depending upon species, while dense concentrations of fin and rib elements also characterized several other structures suspected of having specialized ritual functions (e.g., HP's 9, 104, and 105). Also, like some of these other suspected ritual structures, HP 109 seems unusual in having a very large storage pit associated with its relatively small size. In the cases of the smaller structures such as HP's 9 and 107, the large pits seem clearly out of proportion to the number of probable residents in the structure, and it is hypothesized that the large interior storage pits may have been for the storage of secret society food resources, wealth, and ritual paraphernalia.

One other unique feature of the upper floor of HP 109 are the clear indications of using canids for food. In Simon Fraser's journals, dogs seem to have been used as delicacies and were consumed primarily at feasts. This is consistent with the special role of dog consumption in other traditional societies in the world (see Vol. II, Chap. 10; see also Swartz 1997).

All in all, there are enough indicators of specialized or unusual activities and contexts associated with HP 109 that we may tentatively propose that it may have been a special function structure used for feasting or ritual. However, a better assessment of this proposition would be possible if the entire structure could be excavated, an undertaking for which we lacked sufficient resources. It is unfortunate that so few artifacts

occurred on the lower floor, since a larger sample of artifacts could potentially reveal more about the nature of the activities in this early structure and how it was integrated into the rest of the community at Keatley Creek.

References

Hampton, O.W.

1999 *Culture of Stone*. Texas A & M University Press, College Station.

Romanoff, Steven

1992 The Cultural Ecology of Hunting and Potlatches Among the Lillooet Indians. In B. Hayden (Ed.), *A Complex Culture of the British Columbia Plateau*, pp. 470-505. University of British Columbia Press, Vancouver.

Schwartz, Marion

1997 *A History of Dogs in the Early Americas.* Yale University Press, New Haven.

Figure Captions

Figure 1: A schematic plan of HP 109 showing the location of excavated squares.

Figure 2: Stratigraphic profiles (A) of the original test trench; (B) of the east, south, and west walls of Square B (excavated in 1998) in HP 109.

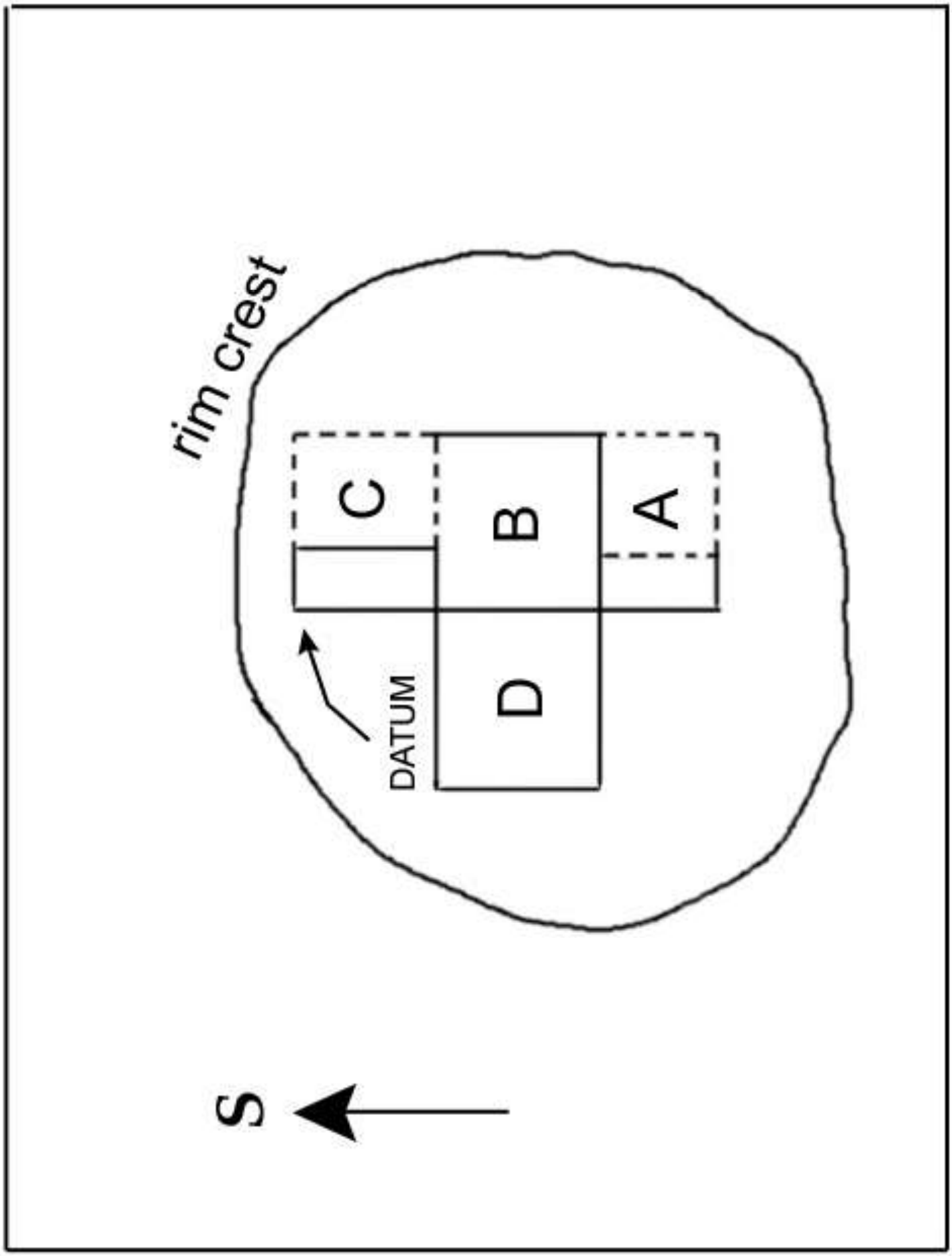
Figure 3: Plan view of Feature 1989-2.

Figure 4: Plan view of the lower floor (Stratum VII) of HP 109.

Figure 5: Plan view of the upper floor (Stratum III) of HP 109.

Figure 6: Plan view of the canid sacrum and vertebrae found wrapped in fir needles and birch bark on the upper floor (Stratum III) of Squares B and D.

Figure 1. A schematic plan of HP 109 showing the location of excavated squares.



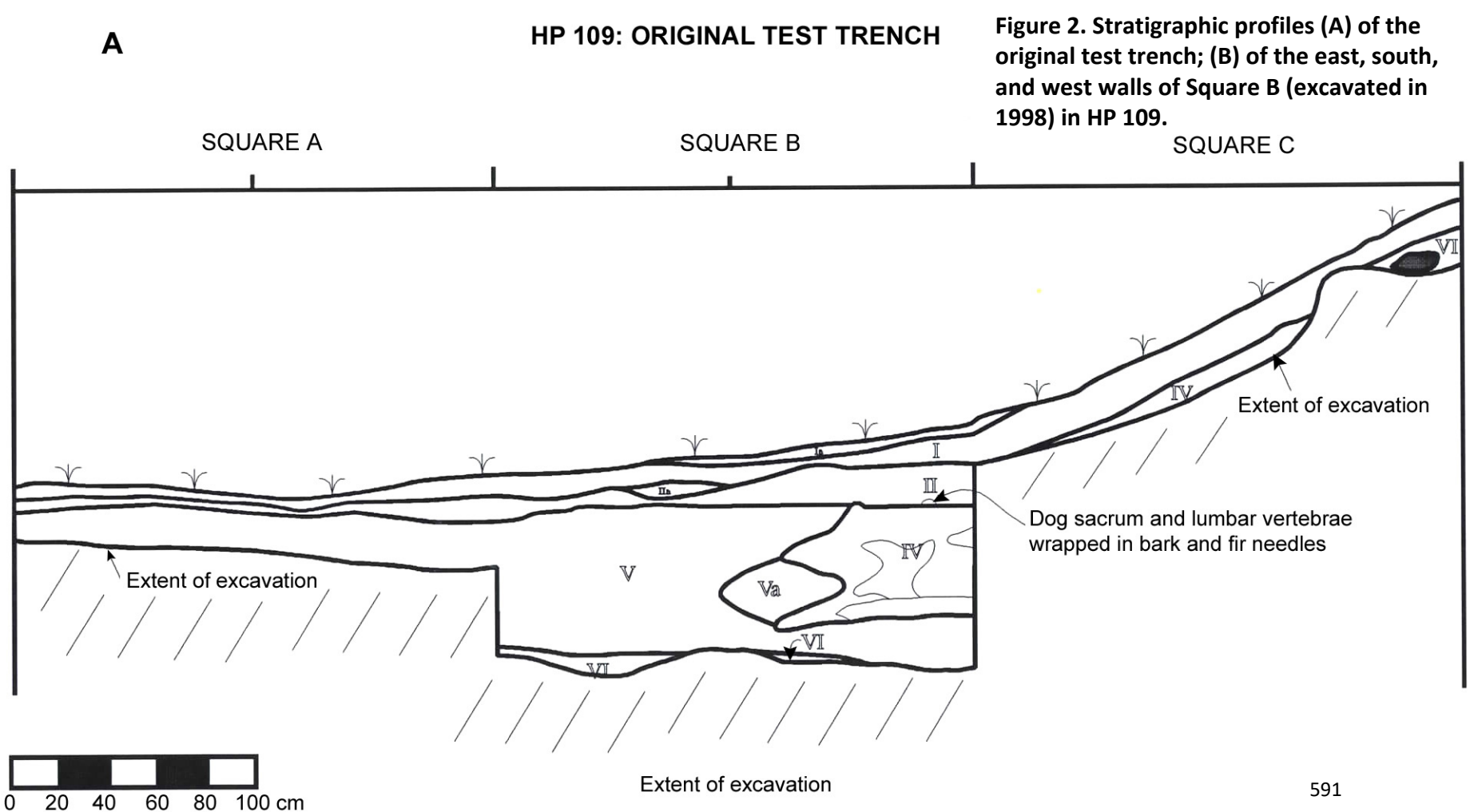


Figure 2. Stratigraphic profiles (A) of the original test trench; (B) of the east, south, and west walls of Square B (excavated in 1998) in HP 109.

Figure 3. Plan view of Feature 1989-2.

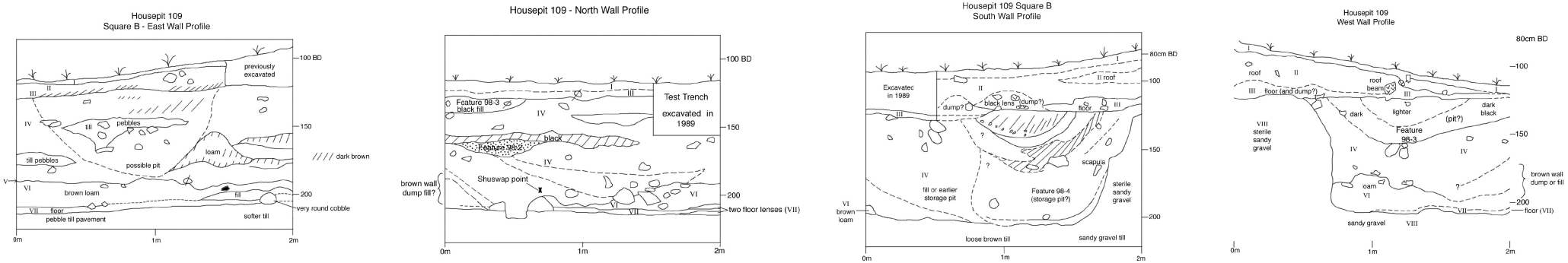
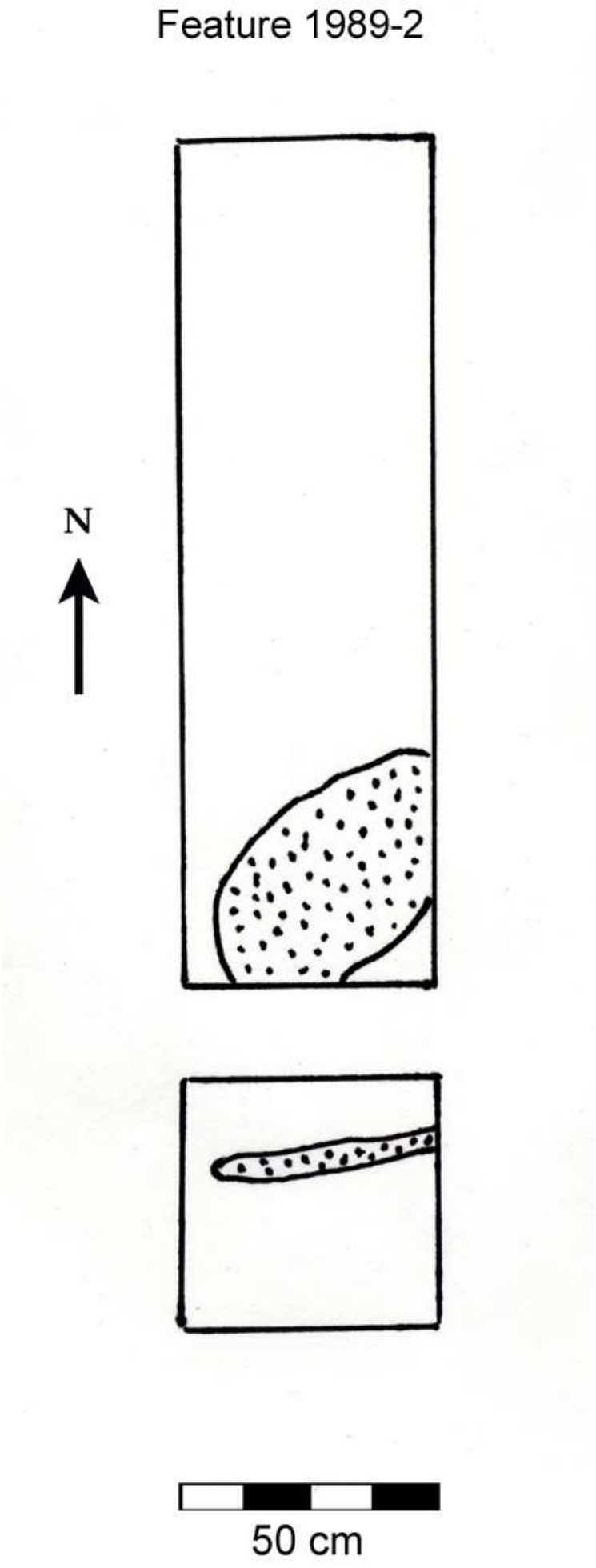


Figure 4. Plan view of the lower floor (Stratum VII) of HP 109.



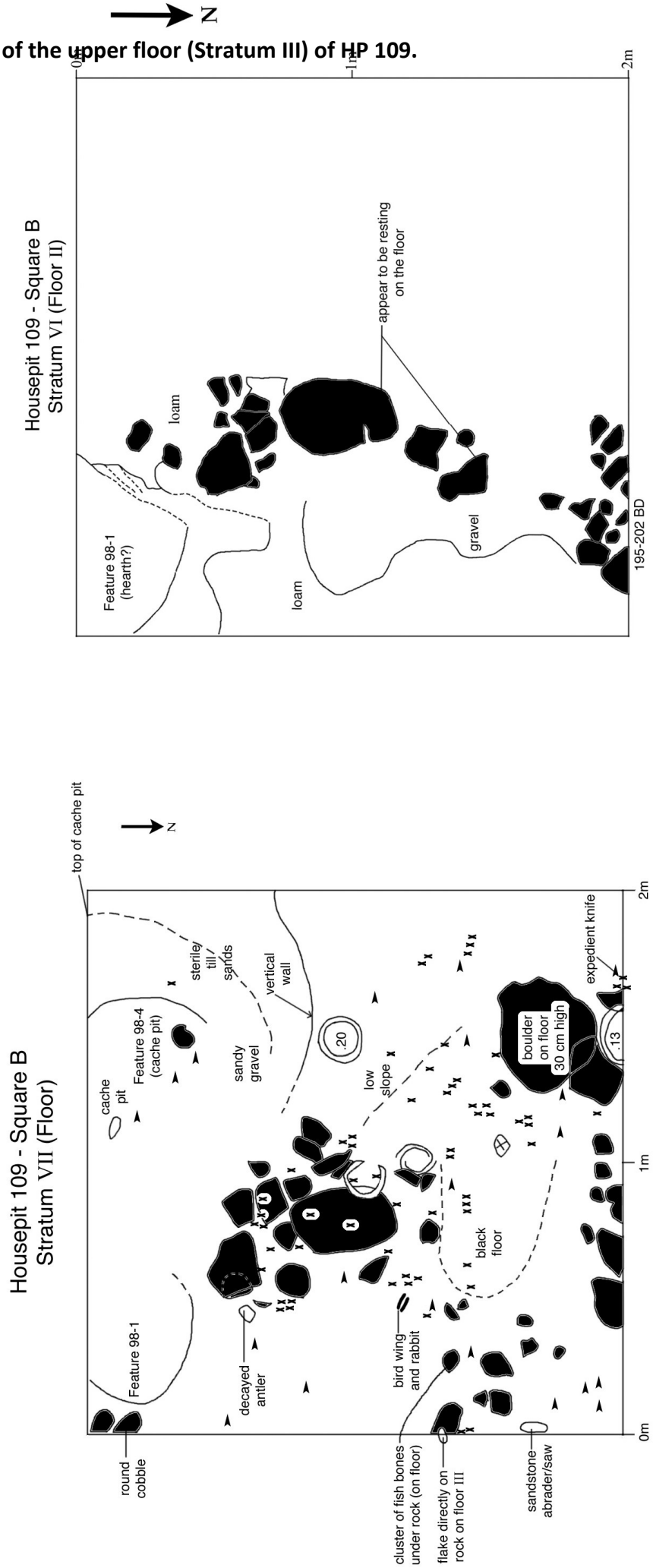
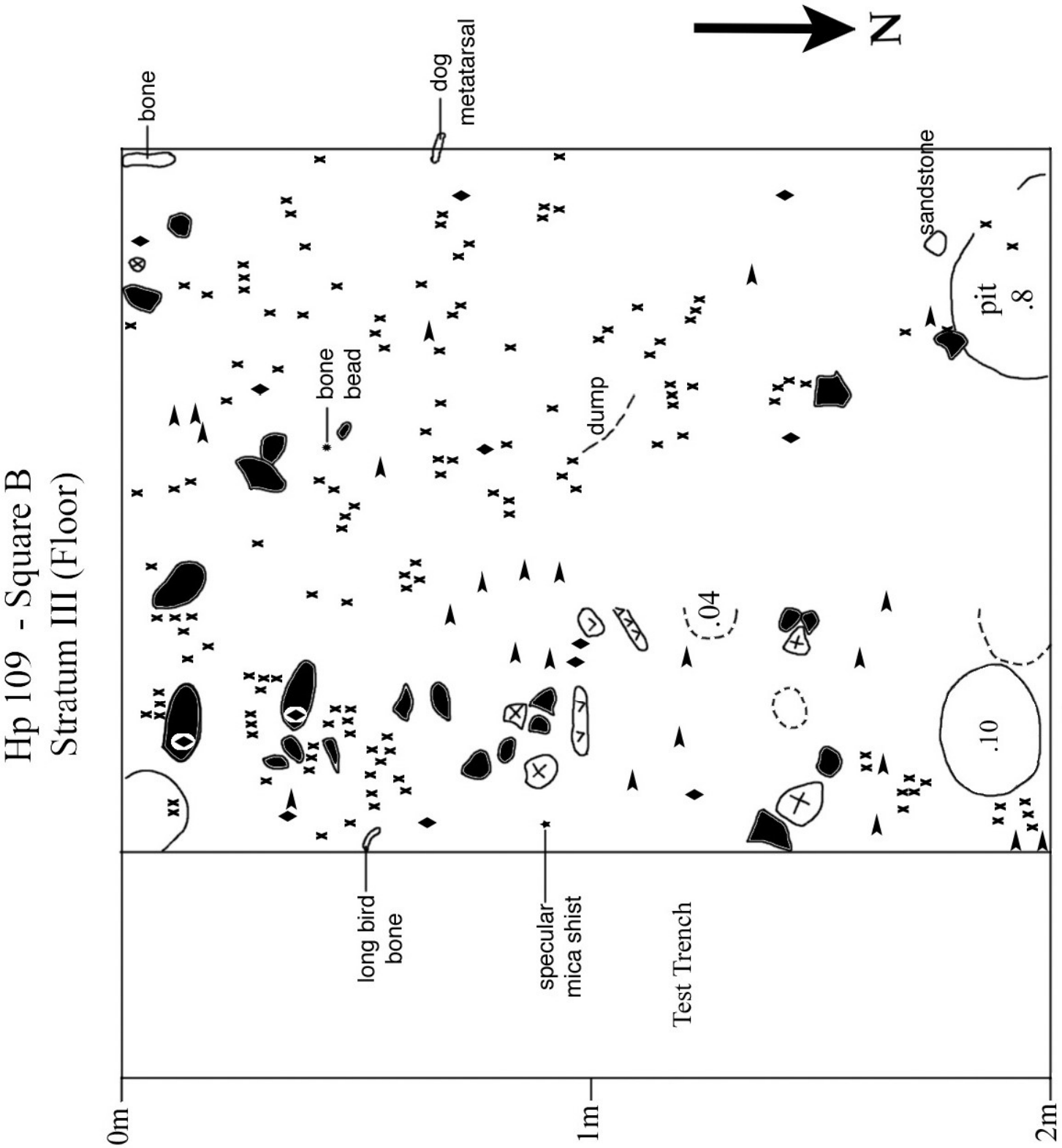
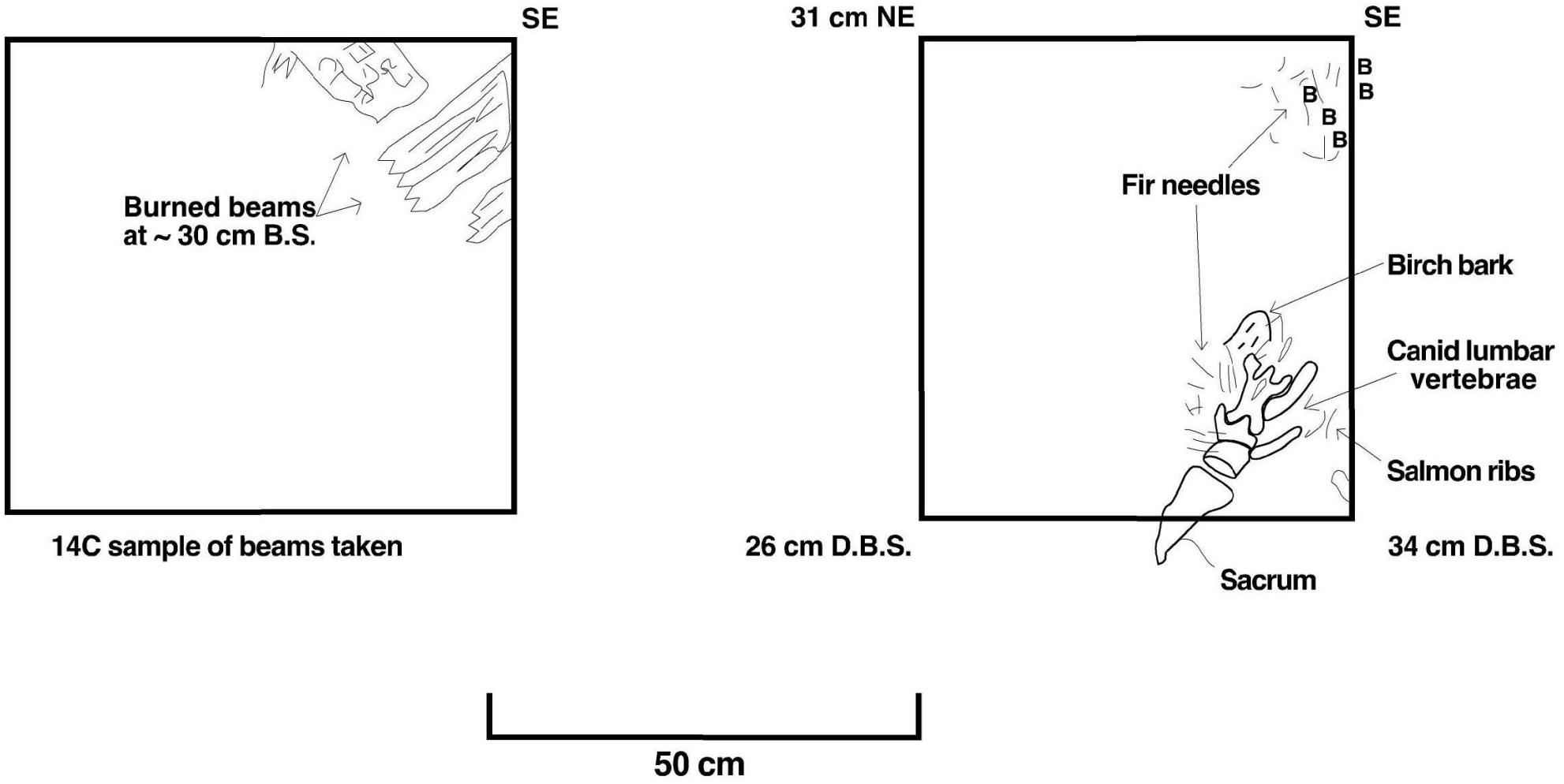


Figure 5. Plan view of the upper floor (Stratum III) of HP 109.

Figure 6. Plan view of the canid sacrum and vertebrae found wrapped in fir needles and birch bark on the upper floor (Stratum III) of Squares B and D.




SE
Burned beams
at ~ 30 cm B.S.
14C sample of beams taken
31 cm NE
SE
B
B
B
B
B
Fir needles
Birch bark
Canid lumbar
vertebrae
Salmon ribs
Sacrum
26 cm D.B.S.
34 cm D.B.S.
50 cm

Housepit 110 Excavation Results

Mike K. Rousseau

Housepit Location and Description

Housepit 110 is located on the south side of Keatley Creek on the lowest terrace on the edge of a small promontory overlooking the creek bed (Vol. III, Preface, **Fig. 1**). Housepit 110 measures approximately 6 m north-south by 5.5 m east-west, and its surficial rim to basin depth is about 0.75 m. Surficially, the house depression is circular in plan, and has a saucer-shaped cross-section with gently sloping walls. It is situated on slightly sloping terrain, and has slight lipping along the western sections of its rim. Evidence for pot hunting was not observed.

Test Trench Excavation Results

Two test excavation units measuring 2.0 m north-south by 0.5 m east-west were dug into the southern half of the housepit. The northern unit was designated Square A and the southern one Square B. Together they formed a test trench 4.0 m north-south by 0.5 m east-west that extended from the center of the house to its southern rim (**Fig. 1**). Although the stratigraphy represented in this housepit is fairly complex, at least four occupation episodes (three relate to the house structure, the fourth is a probable post-abandonment open encampment over the depression area) have been provisionally identified. The average depth of cultural deposits within the house extended to about 40 cm below surface (BS), and six distinct strata were identified (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I is a moderately compact, medium gray brown (10 YR 3/2) sandy silt with 10% granules and 15% pebbles. It occupies the upper 8 cm of both excavation squares and represents a mixture of post-occupational aeolian and slopewash deposits with what appears to be materials related to a non-house use (i.e., an open encampment) within the house depression and possibly some materials related to underlying Strata II and III. Recovered cultural materials were surprisingly dense for an uppermost stratum, and include about 60 lithic waste flakes; a white chalcedony drill bit from Square B; and several pieces of partially burnt and calcined mammal bone.

A possible, small, short-term hearth (no feature number) was identified in the northwest corner of Square A at a depth of about 5–6 cm BS. The horizontal extent of this possible feature is not known, as only the southeastern section of it was exposed. It was indicated by a thin lens (1 cm thick) of fire-reddened matrix associated with four pieces of calcined bone, five flakes, and five rocks which roughly surrounded it. It may have been a small cooking fire associated with the non-house open occupation represented in this stratum.

Stratum II

Stratum II is a fairly compact, light gray brown (10 YR 3/3) sandy silt with 20% granules, 30% pebbles, and 10% cobbles. This stratum was represented throughout Square B and only the very southern end of Square A between about 8 cm and 15 cm BS. It is interpreted to represent a very thin roof deposit associated with the most recent (third?) major occupation

horizon associated with the house. Recovered cultural materials include: a large basally-notched Plateau projectile point at 85 cm north, 8 cm east, 12 cm BS; a scraper at 143 cm north, 6 cm east, 10 cm BS; approximately 150 lithic waste flakes of various materials; and about 100 mammal bone fragments (10% burnt).

Stratum III

Stratum III is a fairly compact, dark gray brown (10 YR 3/1) sandy silt with about 10% granules, 10% cobbles, and 10% pebbles. It occupies both excavation squares and lay between about 15 cm and 30 cm BS in Square B, and from 8 to 25 cm BS in Square A. It represents floor deposits associated with the most recent (third?) major occupation episode within the housepit deposits. A large quantity of cultural materials was recovered from this stratum, most of which were recovered from between about 20–30 cm BS. They include: two medium sized Plateau horizon projectile points; the medial section of a medium-sized triangular biface which is also probably a portion of a Plateau horizon point; a drill made from a resharpened Plateau horizon point; a unifacial graving tool; a large convex-edged endscraper; three bone tools; about 500 lithic waste flakes; hundreds of pieces of fragmented mammal bone; several pieces of fire cracked rock (FCR), and; some scattered charcoal. No features were identified.

Of interest is a resharpened "early Nesikep" period projectile point that was recovered from Square B at 45 cm north, 43 cm east, and 30 cm BS. This point style is currently believed to date to between about 7,000 and 6,000 BP (Stryd and Rousseau 1996). This point is clearly out of temporal context, and at least two explanations for its presence within this Plateau horizon context

can be offered: (1) it was picked up from another site and brought into the house during the Plateau horizon, or; (2) there is an early Nesikep period component located in the area of the pithouse which was intersected during the construction of the house and became incorporated within Stratum III. Of the two scenerios, the first seems more probable.

Stratum IV

Stratum IV is a moderately compact, light gray brown (10 YR 3/3) sandy silt with about 5% granules, 10% pebbles, and 5% cobbles. It was encountered in both excavation squares, and lay between about 25–33 cm BS in Square A, and from about 30–38 cm BS in most of Square B with exception of Feature 2, a large pit which contained Stratum IV deposits to a depth of about 70 cm BS (see below). Stratum IV represents floor deposits relating to the second(?) major occupation of the house. Stratum IV yielded a relatively high density of cultural materials, but it was not as rich as Stratum III above. Materials include: a nearly complete, medium-sized corner-notched Plateau horizon projectile point; a partial corner-notched Plateau horizon point; two large bifaces; a cylindrical olivine hammerstone; a polished siltstone item; the tang from a corner-notched point; a possible bone artifact fragment; a piece of obsidian; about 200 flakes; several pieces of FCR; scattered charcoal, and; about 150 mammal and fish bone fragments.

Two features were identified in association with Stratum IV; a large hearth (Feature 1) and a medium-sized pit (Feature 2) (**Figs. 2 and 3**). Feature 1 is a major hearth feature (possibly main hearth) identified in the northern end of Square A, which intersected the southwestern quarter(?) of the hearth. It is estimated to be about 75 cm in diameter and is about 10 cm

thick along the western wall and 20 cm thick along the eastern wall. The lower one-third or so of the feature consists of fire-reddened soil, the upper two-thirds (designated Stratum IVa) is a mottled orange brown/medium brown/black (10 YR 4/6), sandy ashy silt containing scattered charcoal, several pieces of FCR, pieces of calcined mammal bone, a small leaf-shaped biface, and a few lithic waste flakes.

Feature 2 is a medium-sized, fairly deep pit that has a circular plan outline and a basin-shaped cross-section. It measures about 60 cm in diameter, and extends into sterile deposits about 40 cm. Although its function is not clear, its size, shape, and location suggest that it may have been a storage pit—perhaps for small quantities of food. After its use had expired, the pit was intentionally infilled with Stratum IV deposits and two fairly large boulders. The materials recovered from the bottom half of the pit are suggestive of typical floor-type refuse. These included: most of a large Plateau horizon corner-notched point found at the bottom of the pit, several flakes, a few pieces of bone, and some scattered bits of charcoal.

Stratum V

Stratum V is a fairly compact, somewhat mottled, gray black (10 YR 3/1) sandy silt with 10% granules and 10% pebbles. It was encountered within the northern four-fifths of Square A between about 33 cm and 50 cm BS, and represents a portion of the floor deposits associated with the initial occupation of the house (see also summary section below). As with the other floor deposits above, this stratum contained a fairly high incidence of cultural materials. These included: the tip of an antler tine pressure flaker, a

large bifacial flake tool, a small white chalcedony biface fragment, about 50 flakes, and several complete and fragmented mammal bones (deer).

Of great interest in Stratum V is the presence of a partially burnt, medium-sized canid (probably dog) in the north-central part of Square A between about 40 cm and 50 cm BS. It was designated as Feature 3, and is thought to represent an intentional dog cremation/burial (**Fig. 4**). Almost all of the individual was exposed and removed with exception of some of the lower vertebra. Most of the remains were in fair to poor condition, and most of the elements were articulated or semi-articulated, indicating that it had been burnt *in situ.* The cremation/burial extended over an area measuring about 50 cm diameter.

Stratum VI

Stratum VI is a compact, light gray (10 YR 5/3) sandy clayey silt with 5% granules, 5% pebbles, and 5% pebbles. It occurs only within Square B, and represents a mixture of sterile glacial till and Stratum V deposits which probably relate to the excavation of the large pit (Feature 2) encountered in Square B.

Excavation Summary and Conclusions

Test trench excavations within HP 110 revealed stratigraphy that suggests at least four separate occupation episodes: three are associated with the occupation of the house depression; the fourth and final occupation may be a non-house open encampment within and possibly surrounding the house depression.

The initial house occupation, represented by Stratum V, contained a partially cremated canid burial. This stratum was not encountered in Square

B, and it may be that deposits associated with this occupation in this part of the floor were removed and displaced outside the house onto the rim during the second occupation (represented by Stratum IV). The temporal affiliation of the initial Stratum V occupation is not known, although it probably relates to the initial part of the Plateau horizon as is indicated for the two following occupations.

The second occupation of the house is represented by Stratum IV. A hearth (Feature 1) and a medium-sized pit (Feature 2) were associated with it in the tested area. The density of cultural materials and thickness of deposits suggest that the dwelling was occupied for a reasonable amount of time during the initial part of the Plateau horizon (ca. 2,400–1,600 BP).

The second and third occupations are not separated by any distinguishable roof deposits. However, the roof may be very thin in the tested area, or perhaps a non-earth roof (i.e., such as a matlodge roof) may have been erected over the floor during the second (Stratum IV) occupation.

The third occupation of the house depression, represented by Stratum III, was very rich in cultural materials and the recovery of several projectile points indicate that it also dates to the initial half of the Plateau horizon. A thin roof deposit (Stratum II) was identified above this occupation in Square B.

The provisional fourth and final occupation was encountered in the upper 8 cm of the house (Stratum I), and it is associated with a possible short-term hearth and a moderate amount of cultural materials. It may be a post-abandonment encampment extending within and possibly beyond the housepit confines. The relative age of this final occupation episode is not known.

Because the house did not contain any Kamloops horizon occupations, and because it is fairly complex, it was not subjected to further detailed investigations during this study. Nevertheless, the results again support the observation that Plateau horizon housepits/dwellings are often quite small, and some indicate having been intensively occupied for fairly long durations.

References

Stryd Arnoud and Michael Rousseau

1996 The Early Prehistory of the Mid Fraser-Thompson River Area of British Columbia. In Roy Carlson and L. Dalla Bona (Eds.), *Early Human Occupation in British Columbia*, pp. 177-204. University of British Columbia Press, Vancouver.

Figures

Figure 1: Housepit 110 west wall profile.

Figure 2: Plan and profile views of Feature 1, a hearth.

Figure 3: Plan and profile views of Feature 2, a pit.

Figure 4: Plan view of Feature 3, the cremation burial of a canid.

Figure 1. Housepit 110 west wall profile.

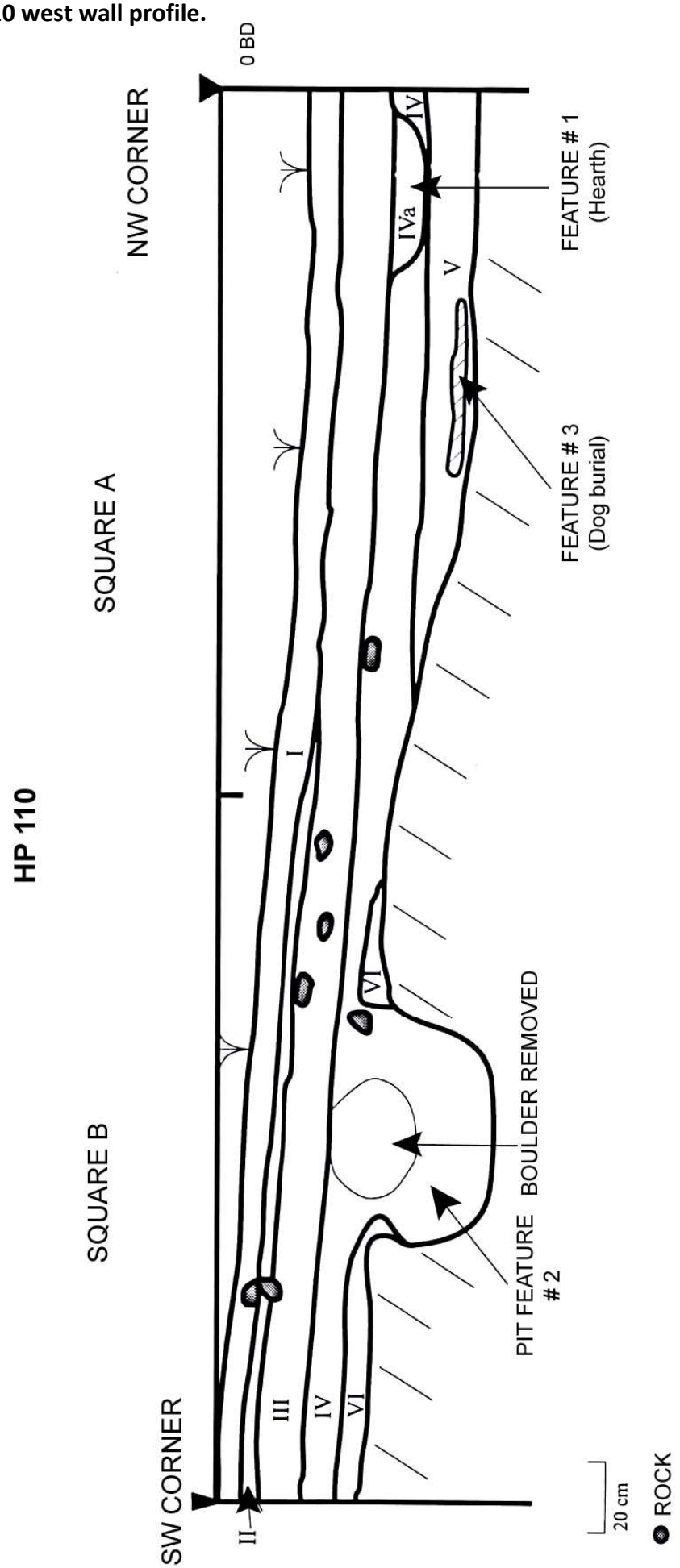


Figure 2. Plan and profile views of Feature 1, a hearth.

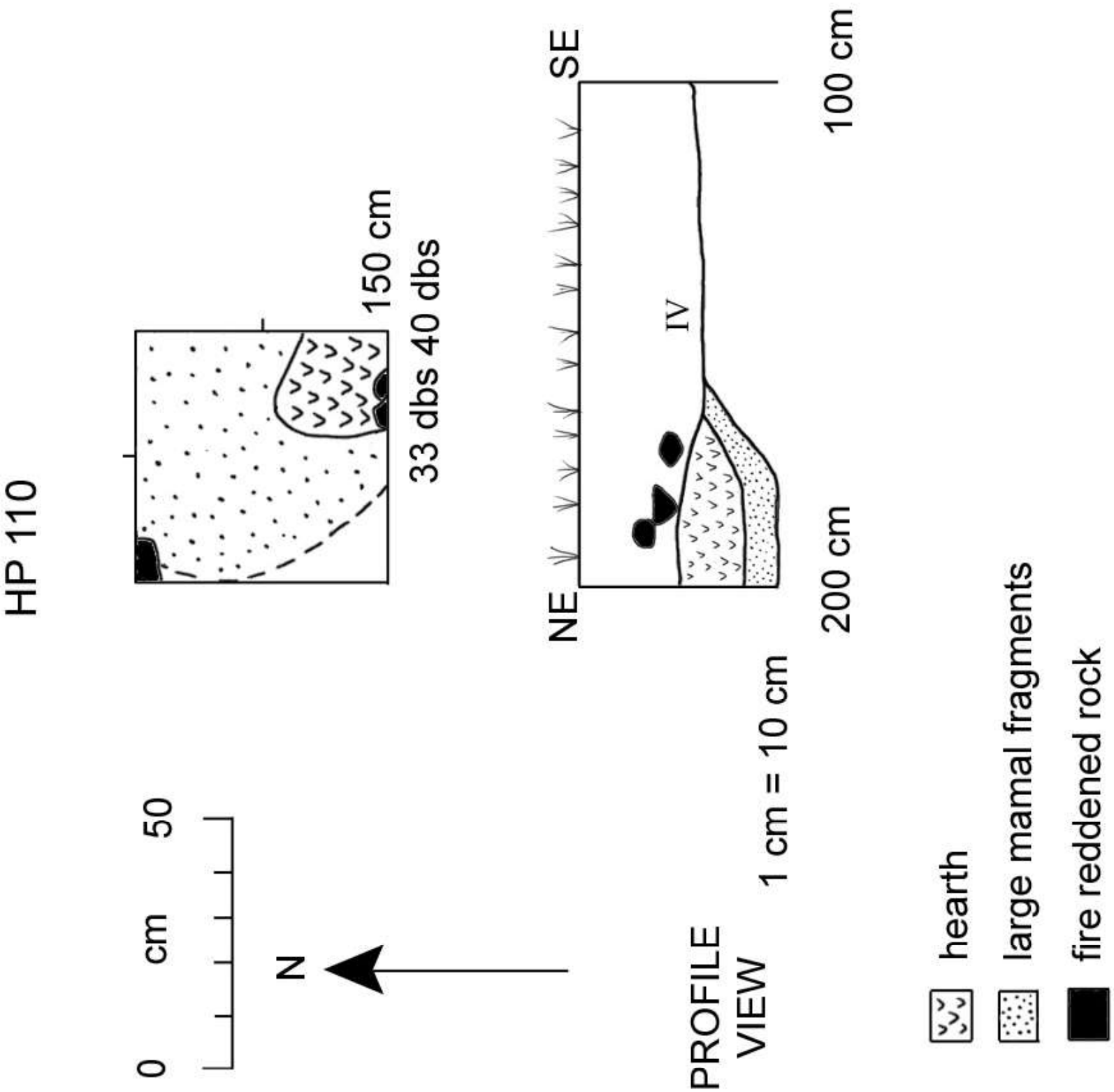


Figure 3. Plan and profile views of Feature 2, a pit.

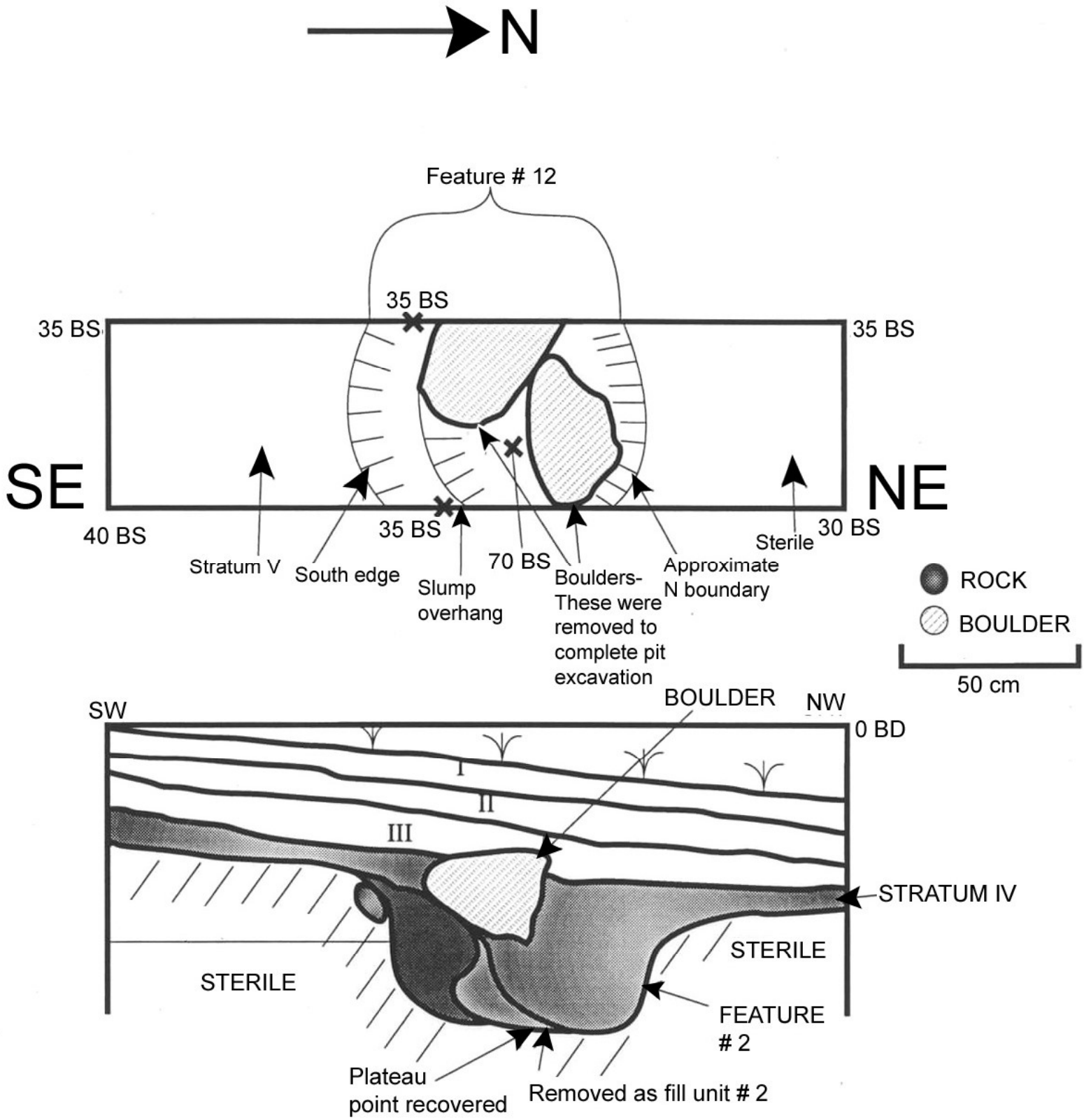
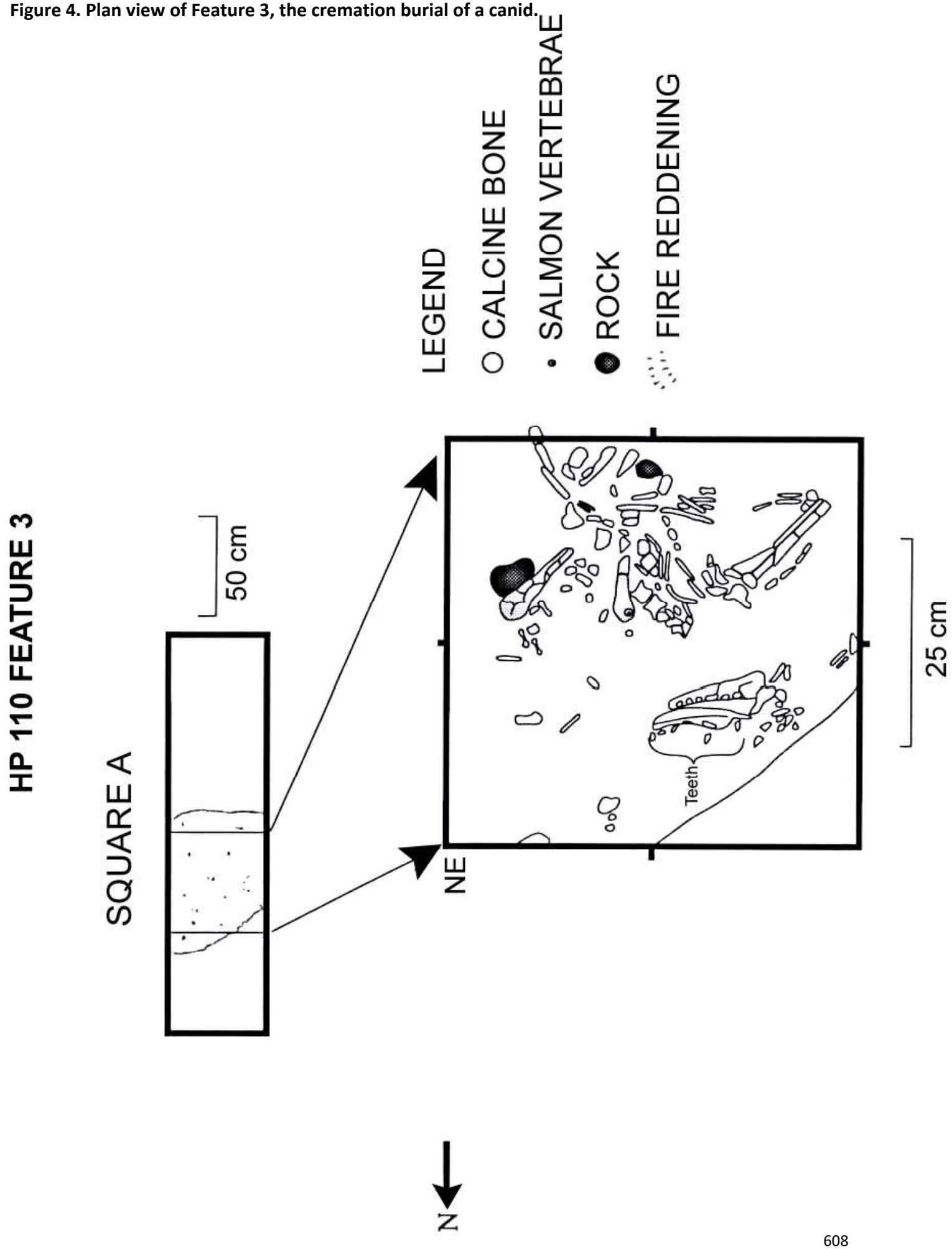


Figure 4. Plan view of Feature 3, the cremation burial of a canid.



Housepit 111 Excavation Results

Mike K. Rousseau

Housepit Location and Description

Housepit 111 is located on the very northeastern edge of the Keatley Creek site at the present Sagebrush—Ponderosa Pine/Bunchgrass zonal ecotone (Vol. III, Preface, **Fig. 1**). Housepit 111 measures ca. 5.0 m in diameter, and its surficial rim to basin depth is about 0.75 m. Surficially, the depression is circular in plan, and has a bowl-shaped cross-section with gently sloping walls. It is situated on relatively horizontal terrain, and it has a well-pronounced lipped rim along its southwestern aspect. Pot hunting activity was not indicated.

Test Trench Excavation Results

A single excavation unit measuring 2.0 m north-south by 0.5 m east-west was dug into the southern half of the depression. It was designated Square B (**Fig. 1**) (the more northern Sq. A was not excavated). Two use/occupation episodes were identified. The average depth of cultural deposits within the depression extended to about 55 cm BS, and five distinct strata were identified (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I is a moderately loose, light gray (10 YR 6/2) sandy silt with about 15% granules, 10% pebbles, and 2% cobbles. It represents post-occupational fluvial and aeolian sediment infilling, and extends from

between 0 cm and 4 cm BS. About 20 flakes and two small fire cracked rock (FCR) were recovered.

Stratum II

Stratum II extended from about 4–20 cm BS, and was divided into Substrata IIa and IIb.

Stratum IIa

Stratum Ia is a moderately loose, light gray (10 YR 5/2) sand silt with 20% granules, 15% pebbles, 30% cobbles, and 10% small boulders that are most pronounced in the northern end of the square (**Fig. 1**). A few flakes and a number of FCR were recovered. It represents the central interior of a large earth oven (see Teit 1900; Pokotylo and Froese 1983; Rousseau and Howe 1986).

Stratum IIb

Stratum IIb is a moderately compact, medium gray (10 YR 3/1) sandy silt with 20% granules; 10% pebbles, and 10% cobbles. A few flakes and a small number of FCR were recovered. It represents peripheral internal deposits in the earth oven feature.

Stratum III

Stratum III is a moderately compact, light gray brown (2.5 Y 5/2) sandy silt with 15% granules, 5% pebbles, and 2% cobbles. It extended from about 20–40 cm BS, and represents possible roof and/or natural post-occupational infilling of the depression after its initial use (Stratum IV). Recovered cultural

materials include a few scattered flakes and several small pieces of FCR from the northern end of the square.

Stratum IV

Stratum IV is a compact, dark gray brown sandy silt (5 YR 5/1) with 15% granules, 5% pebbles, and 5% cobbles. It was encountered between about 40 cm and 55 cm BS, and appears to represent possible floor deposits relating to initial use of the depression as a small dwelling.

Stratum V

Stratum V is a loose, light brown (10 YR 5/4) silt with about 5% pebbles. It represents a culturally sterile aeolian paleosol at the edge of the house.

Excavation Summary and Conclusions

Test trench excavations within HP 111 revealed that this small depression was of unusual size for the Keatley Creek site, and it contained two use episodes. It was initially used as a possible small dwelling structure, or perhaps a specialized structure (e.g., menstrual isolation lodge, matlodge, storage structure), and later it was modified and used as a large food processing (roasting) pit. No temporally diagnostic artifacts were recovered from the excavated portions of the depression, consequently the antiquity of the two use-episodes remains undisclosed. Its initial occupation could not be conclusively identified as being associated with a winter dwelling structure, and because its age affiliation is unknown, and it has been disturbed by intrusive excavations for the roasting pit, this depression was not subjected to further detailed investigations.

References

Teit, James

1900 The Thompson Indians of British Columbia. *Memoirs of the American Museum of Natural History* 2(4).

Pokotylo David, and Paticia Froese

1983 Archaeologica Evidence for root gathering in the southern Interior Plateau of British Columbia: A case study of Upper Hat Creek. *Canadian Journal of Archaeology* 7:127-58.

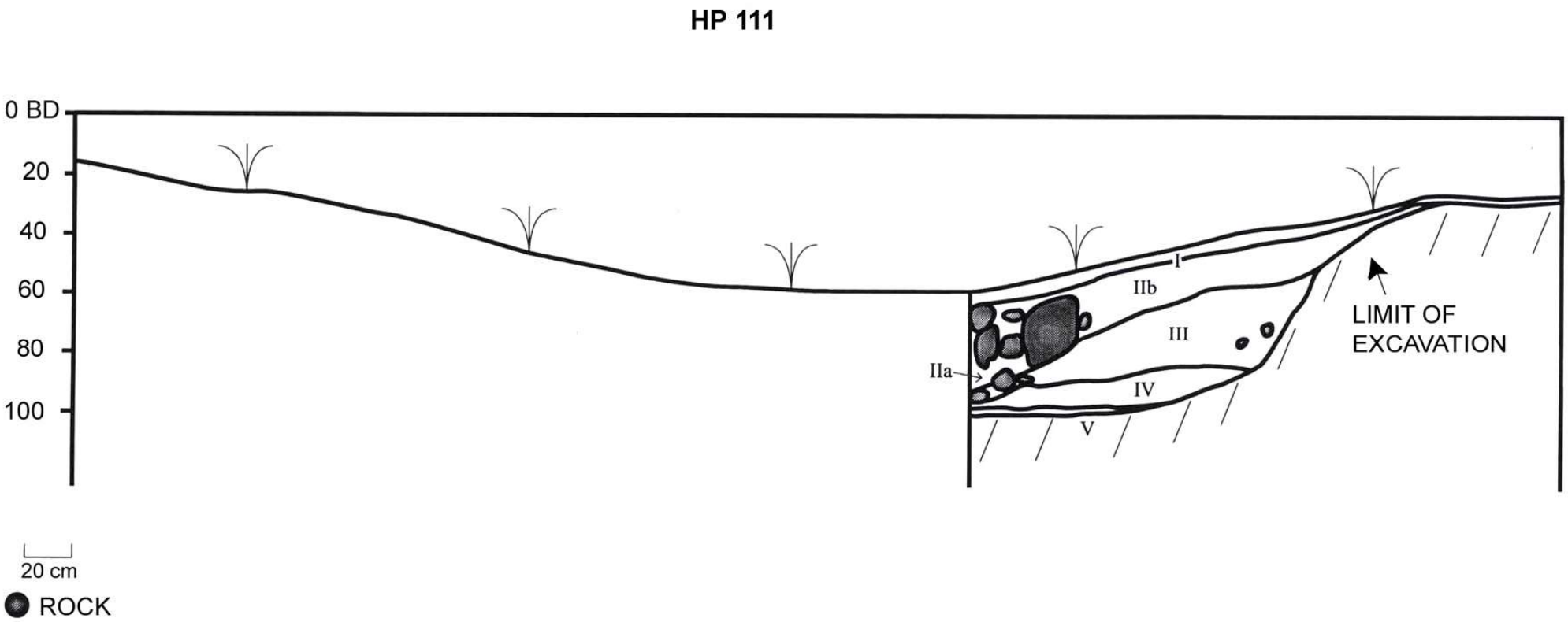
Rousseau M. and G. Howe

1987 Scheidam Flats: A prehistoric root roasting area near Kamloops. *The Midden* 19(2):7-10.

Figures

Figure 1: Housepit 111 north-south profile, and east wall profile test trench B.

Figure 1. Housepit 111 north-south profile, and east wall profile test trench B.



Results of Excavations in Housepit 119 (Extra Housepit Excavation 5)

Robert H. Gargett

Housepit 119 was originally thought to be an extra housepit area and was designated as EHPE 5. This excavation took place in a roughly circular level area in the southwestern portion of the main area of the Keatley Creek site. In contrast to the high number of basin- shaped, rimmed cultural depressions in this and other parts of the site, "EHPE 5" had an anomalous surface morphology. It resembled in many respects "flats" described at the Bell site which were interpreted as having been purposefully filled with sediments imported from the Fraser River 400 m below (Stryd 1973:301). It was thought that "EHPE 5" could have been artificially created, or used for ceremonial or other communal purposes by the aboriginal inhabitants. The goals of the 1987 excavations were to determine if the sediments revealed any distinctive patterning indicative of the hypothesized activity.

Following initial excavation in 1987, it became clear that nearly a meter of layered sediments overlay a clearly cultural stratum. The generally circular outline of this area and the presence of a weakly expressed rim suggested that "EHPE 5" could in fact be a housepit that had been naturally filled in. Upslope from this location there are dry stream beds and evidence of erosion by intermittent fluvial activity. It was supposed that the cultural stratum under the layered sediments might be older than the Kamloops horizon. For these reasons, excavation continued in 1988, with the goals of: (1) Better understanding the processes resulting in this feature's anomalous topography, and; (2) discovering the age and content of the buried cultural material.

Test Trench Excavation Results

The test trench begun in 1987 was cleared of excavation fill, and excavation continued in a 50 cm by 400 cm rectangle that had been dug to 30 cm below surface in Square B and to about 20 cm below surface in the northern 200 cm (Sq. C). Excavation was extended to Square F, northwest of Square C (see **Fig. 1**.). In total, a 1 m x 2 m area in the west of Square F was excavated to a depth of 20 cm, in 5 cm levels, employing shovels, and screened through 8 mm mesh.

Previous excavation in Squares B and C had proceeded according to natural strata, using trowels and screening all sediments through 8 mm mesh. In 1988 we began by trowelling in arbitrary 5 cm levels, screening through 8 mm mesh. Low artifact density soon encouraged the use of shovels. Finally, after reaching 95 cm below surface in Square B and 75 cm below surface in Square C, it became apparent that the layered sediments were essentially sterile. Therefore, mattocks were employed and screening discontinued. When the old surface of the buried cultural zone was finally encountered, trowelling and screening were again employed.

The sediments and a tentative interpretation are presented below. The sedimentary history of EHPE 5 can be divided into three zones, representing the results of cultural and natural processes.

Zone 1

Figure 2 presents a profile of the west wall of Squares B and C. Zone 1, just below the surface, is composed of recently deposited aeolian sediments, dark brown in color. This zone was excavated in 1987, and contained some flecks of charcoal and low amounts of lithic material. Similar results were obtained from the 1988 excavation of Square F. Zone 1 is variable in

thickness due to the contours of the fluvially deposited sediments beneath. Wind blown sediments naturally fill in irregular surfaces, and can present a fairly uniform surface. Furthermore, the presence of low densities of charcoal and lithics in aeolian deposits need not require human transport, as the area is at times subject to very strong winds with vortices that are capable of saltating heavy sediments. Thus, it is not clear if any of these deposits are anthropogenic.

Zone 2

This accumulation of layered sediments is nearly two meters deep. Both low-energy silts and clays, as well as coarser fluvial sands and gravels, testify to a fluvial depositional regime and environment considerably different from that now occurring at the site. For some time, HP 119 apparently functioned as a pond, part of a ramified system of downslope water movement that transported fine-grain sediments. Later, as the basin filled with clays and silts, and it was capable of retaining less and less ponded water, an outlet was created through a remnant of the rim in the southwest. At that time, HP 119 became a place that water traversed (as opposed to being a closed basin), and interbedded, coarser sediments can be observed in the upper portion of the zone. This could all have occurred in as short a time as 25 years (P. Goldberg, Pers. Comm.).

The greater-than-normal surficial water may have resulted from long-period fluctuations characteristic of arid and semi-arid environments or to local changes in hydrology, including the appearance of groundwater seeps which come and go according to unknown factors. The latter seems more likely, since moisture-loving aspen and other herbaceous plants occur less

than 20 m downslope of "EHPE 5", and Keatley Creek itself is known to have fluctuated dramatically in volume within the last 50 years.

By any standards, the yield of cultural material in such a large volume of sediments was minimal: a fragment of a sandstone saw, a few pieces of ungulate bone, and no chipped stone tools. What was found came from about 60 cm below the surface, suggesting that, for a short period during the in-filling of HP 119, it may have been a focus for human activity. However, in general, it can be said that little human activity occurred at Keatley Creek while Zone 2 accumulated, since everywhere else the site contains a much greater density of anthropogenic sediments.

Zone 3

This zone manifests the characteristic cross-section of an archaeological housepit: the same parabolic surface, a nearly horizontal "contact" with sterile sediments beneath, and burned beams indicative of a collapsed wooden superstructure. Throughout, the sediments are variable in composition, but they nevertheless present sufficient internal consistency to allow recognition of a reworked soil horizon at the surface, collapsed roof, and the reworked sterile substrate upon which activities within the house occurred. Due to constraints of time, and the low information yield, the test trench was not excavated to sterile everywhere. Only Subsquares 8, 12, and 16 of Square B and Subsquare 8 of Square C were taken through to the glacio-fluvial sands and pebbles. The character and content of the cultural sediments are summarized below.

Stratum III

Stratum III is a moderately compact, silty sand with indistinct upper boundary with the clayey/silt of Zone 2. Generally, it is very dark gray-brown (10 YR 3/2), containing 10–30% fine pebbles, 30–50% 2–4 mm size particles, and less than 10% charcoal.

The cross-section of Stratum III thickens away from the center, suggesting it may be collapsed roof sediments. Such collapse sediments occur in other housepits and have similar cross-sectional morphologies. That it was originally sub-aerial for a time is evidenced by, in places, a darker upper portion which is discontinuous and disturbed by (possibly) trampling of the sub-aqueous, mucky basin bottom.

Moderate amounts of lithic debitage occur in Stratum III, together with some fish and mammal bone. A Kamloops horizon projectile point pre-form confirms a no-later-than Kamloops age in the late Prehistoric period. However, its presence near the surface of roof collapse does not altogether rule out an earlier age for this housepit. At the time the preform was manufactured, the housepit may have been abandoned for some time. Thus, in the absence of any clear diagnostic associations with the interior living floor of HP 119, a tentative age of 1,200 BP–200 BP must be assigned to this stratum.

Fire cracked rocks in low amounts, but variable in size, further support the inference that this is roof collapse. Large (i.e., 10 cm and above) pieces of rock would not be expected to accumulate on a living floor.

Burned structural material occurs near the bottom of Stratum III. Elsewhere at Keatley Creek, charred beams are characteristic of the roof/floor boundary. That these generally occur near sterile, and horizontally

near the center of the deposits further reinforces the proposition that these are roof collapse sediments. Good samples of the burned wood were taken for radiometric determinations.

Stratum IV

Stratum IV is a quite unconsolidated, black silty sand and probably represents a thin expression of the interior activity zone (the floor). It was only excavated in Subsquare 8 of Square C and Subsquares 8, 12, and 16 of Square B, but nevertheless seems to be a characteristic "floor." A thin band (i.e., < 1 cm) lying just above Stratum IV, and which resembles sterile sediments, is one more argument for considering Stratum IV as floor. One would not expect roof collapse which consisted of a pristine "lens" of redeposited sterile to maintain its integrity during collapse. Thus, the band of sterile, which parallels the contact of the floor with basal till, but which sandwiches the black sediments of Stratum IV, is best interpreted as having been deposited on the living surface of the house during occupation—perhaps the material excavated from a pit of indeterminate size inside the house.

Finally, a 3 cm x 4 cm basalt flake was secured from the surface of Stratum IV. It had been broken in five pieces in the past. Whether broken when the surface was being lived on, or at the time of collapse is irrelevant, it clearly supports the conclusion that Stratum IV was the floor.

Stratum V

Stratum V is a very compact to loosely consolidated, olive brown (2.5 Y 4/4) glacio-fluvial deposit, containing no cultural material. This Stratum was first encountered about 185 cm below the surface.

Excavation Summary and Conclusions

Excavations in "EHPE 5" during 1987 and 1988 revealed a naturally buried Kamloops horizon housepit of characteristic size, shape, and content. For this reason, EHPE 5 was renamed HP 119. It was originally nearly 2 m deep and approximately 12 m from rim top to rim top. The now-almost flat cross-section is clearly the result of natural fluvial action. The excavations have discovered no evidence to support hypotheses concerning the use of the area for communal or ceremonial purposes. The almost complete lack of artifactual material in the Zone 2 water-laid deposits indicates that the site was essentially abandoned during the infilling of this housepit. This latter inference is consistent with the notion that the site was completely abandoned in early Kamloops times.

Housepit 119 resembles the "flats" excavated at the Bell site, which June Ryder suggested had been filled with material imported from the river, far below. This led some people to think that HP 119 was a dance or ceremonial plaza. At the time, material infilling was ruled out. However, it seems most likely that at the Bell Site, as at Keatley Creek, the vicissitudes of hillslope hydrology turned a disused housepit into a pond.

Figures

Figure 1: Housepit 119 location of Features.

Figure 2: Housepit 119 profile of west wall of Squares B and C at 65 m west of Datum

Figure 2 Stratum Legend

Stratum III* 10YR3/2 very dark grayish brown silty sand. Quite compact, with 10–30% pebbles, 30-50% gravels, some (<10%) charcoal, some lithics, probable roof.

Stratum IV 7.5YR2/0 black, quite unconsolidated silty sand with (10% pebbles, <10% cobbles, 30–50% gravels, with <10% charcoal, <10% FCR, <10% mammal bone (small), <10% lithics.

Stratum V 2.5Y4/4 olive brown very compact glacio-fluvial deposit. 0% material.

* some soil development apparent.

Figure 1: Housepit 119 location of Features.

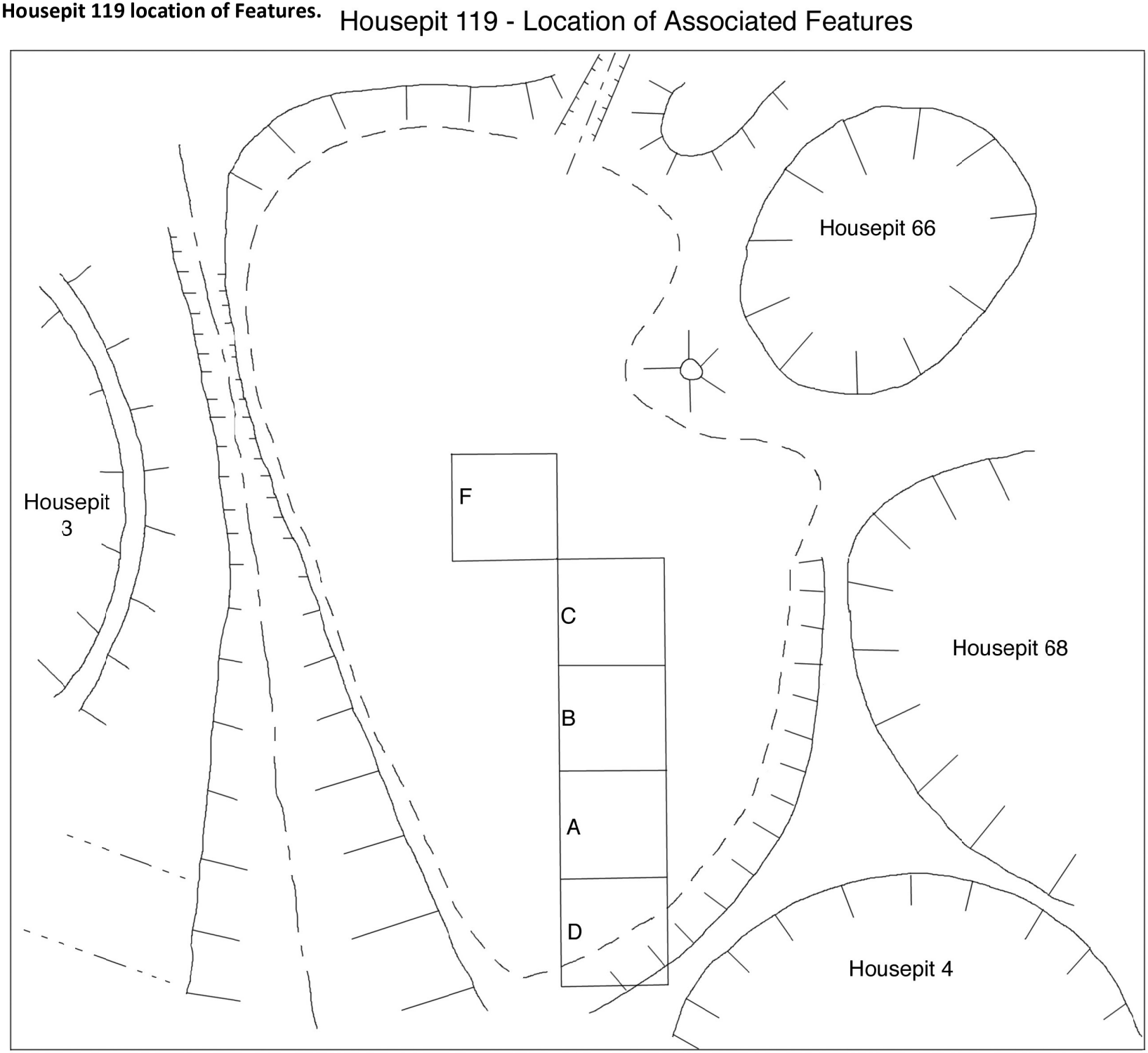
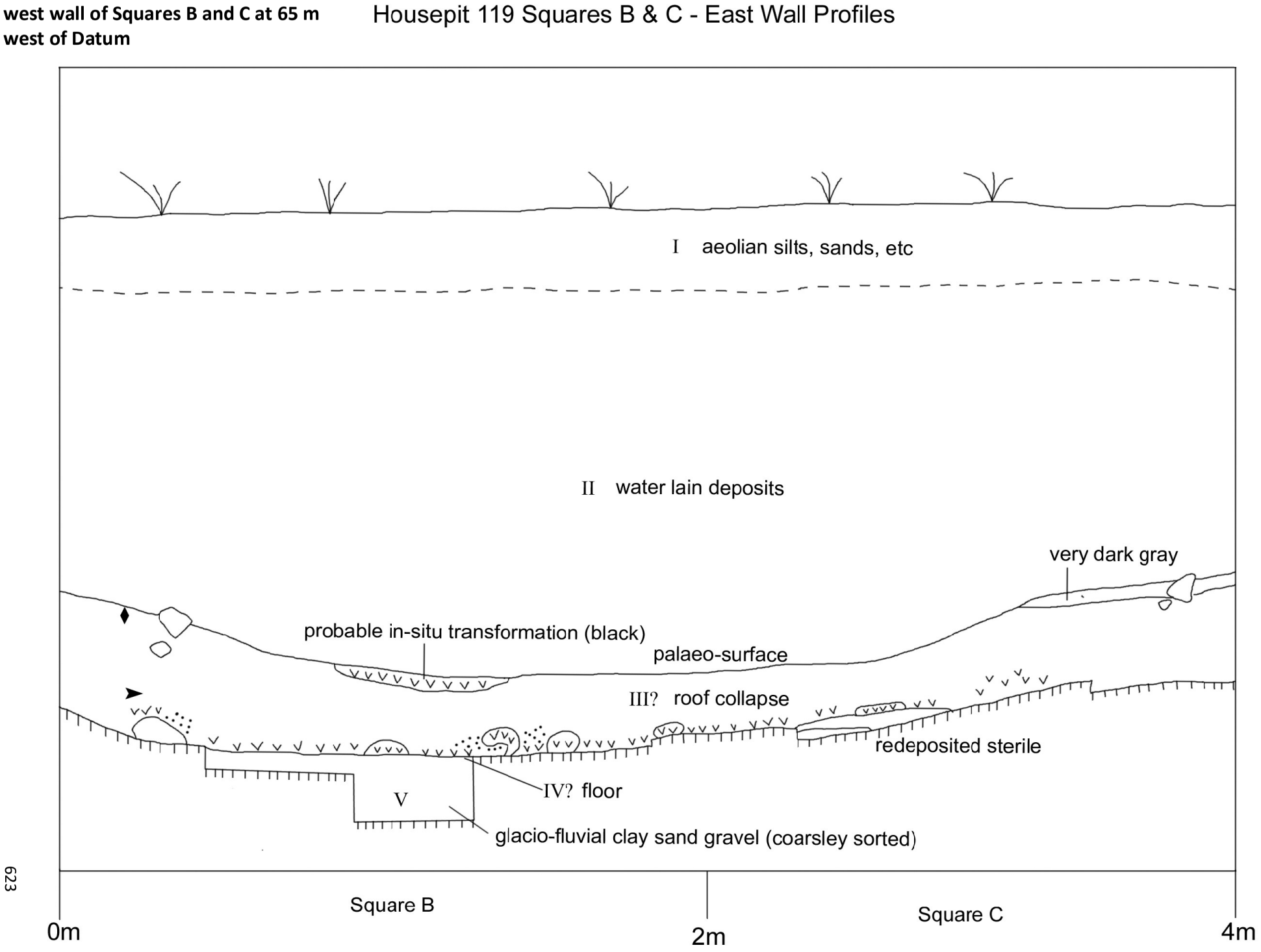


Figure 2: Housepit 119 profile of west wall of Squares B and C at 65 m west of Datum



Investigations of Small Circular Cultural Depressions at the Keatley Creek Site

Mike K. Rousseau and Ty Heffner

Over the last twenty years, many prehistoric winter pithouse villages have been investigated on the Canadian Plateau. The focus of most previous research has been examination of house interiors. Consequently, small circular cultural depressions associated within and near winter villages have been largely ignored, despite their potential to further our knowledge about prehistoric subsistence matters.

In the last two decades, however, a small number of small circular cultural depressions have been minimally examined (Von Krogh 1978; Pokotylo and Froese 1983; Carlson 1980; Richards and Rousseau 1982; Lawhead et al. 1988). Not surprisingly, most of these features were revealed to be food roasting pits (earth ovens) or storage pits, constructed and used in accordance with the ethnographic record (Teit 1900, 1906, 1909).

The 1988 investigations of small circular and oval cultural depressions at the Keatley Creek site were initiated to examine the internal structure, contents, and purpose(s) of a variety of small depressions with surficial dimensions ranging between 1.5m and 4.5m in diameter by .5 to 1.0m deep. Such small depressions are relatively common (but not abundant) at Keatley Creek; most are associated with housepit rims, or in small isolated clusters on the periphery of the site (This volume, Preface, Fig. 1).

All twenty-one of the depressions initially examined were judgmentally selected with two important considerations in mind. First, those not associated with parts of the site that had been extensively excavated or disturbed by prehistoric activity were preferred. It was reasoned that this

would help reduce the possibility of previous disturbance or stratigraphic obscuration caused by aboriginal digging activities and/or depositional events (i.e. refuse and ash dumps) not directly related to the primary function of the pit.

Second, an attempt was made to select and examine a wide range of small depression features with notable surficial morphological and/or dimensional variability to determine whether the formal differences could be linked to functional differences. It has often been assumed (perhaps erroneously) that small circular depressions at pithouse sites functioned almost exclusively as storage pits and earth ovens, and that their structure and expected contents conform to the ethnographic data. This has never been adequately tested during previous research projects, though.

During the 1987 field season, a small circular cultural depression was intersected by extra-housepit excavation (EHPE) 5. In 1988 another seven small depressions of varying form were investigated (EHPEs 7 to 13) between June 15 and August 1. EHPEs 14 to 23 have been excavated since that time; EHPE 14 was found to be a natural feature and will not be dealt with further. Detailed descriptions for each depression and findings of respective investigators are presented in the rest of this chapter. The more salient or notable characteristics indicated by the sample of excavated features are summarized here.

Excavations revealed that small circular depressions at the Keatley Creek site are highly variable with respect to their internal structure, intended function(s), and use-histories. Seven pits were determined to be surprisingly shallow, saucer-shaped and small to medium in size (EHPEs 2, 8, 12, 13, 15, 17, 23); another seven are medium sized, U-shaped or basin shaped, and moderately deep (EHPEs 4, 5, 7, 9, 16, 18, and 21); one is flat-bottomed

(EHPE 11); and the last five are very large and moderately deep to deep (EHPEs 3, 10, 19, 20, and 22).

Eleven depressions were determined to have initially functioned as storage pits (EHPEs 4, 5, 7, 8, 9, 10, 13, 16, 19, 21, and 22). Six depressions (EHPEs 5, 7, 9, 10, 19, 21) are surficially and internally consistent with the classic ethnographic descriptions for "cachepit" (i.e. food storage) features (Teit 1900: 198-199). Their initial use contains fish (salmon) remains, mammal bones, and birch and conifer bark. At least five of these pits (EHPEs 5, 7, 19, 21, and 22) indicated having been infilled by intentional and/or unintentional aboriginal activity subsequent to being abandoned as a storage feature. Construction of fires in partially infilled storage pits, and/or dumping of hearth refuse is indicated in EHPEs 4, 5, 10, 13, and 16 . Both of these activities appear to have been common at the site.

Two of the shallow saucer-shaped depressions (EHPEs 8 and 13) were also interpreted to be storage pits on the basis of their contents, but because they were so shallow, they must have had very little storage space if they were constructed with a flat-topped cover. Alternatively, it is possible that conical roofs comprised of small poles, earth, and bark (i.e. a miniature pithouse) were erected over these features to afford greater interior storage capacity. If the latter is true, it indicates the existence of a storage facility not mentioned in the ethnographic literature.

A surficially deep depression (EHPE 10) was determined to also be moderately deep internally, have vertical walls, and have considerable storage capacity. Its bottom yielded a large quantity of fish bone (salmon?) and remains of a large mammal (elk?). The latter suggests that dried meat may have been stored in it, or possibly that bones were discarded there immediately after its use as a storage facility had expired.

One depression (EHPE 11) contained two horizontal use/occupation episodes. The nature of the cultural materials associated with these events suggests that this feature may have been a small single-person dwelling, but it lacks any indication of internal hearths. Alternately, it could also have been an above-ground storage structure with a conical or lean-to like roof where wood, non-perishables, and possibly food might have been stored.

Another shallow depression (EHPE 12) appears to have been a large saucer-shaped outdoor hearth area belonging to the Lillooet Phase (2400-1200 BP). It contained an abundance of smashed and burnt animal bone, discarded lithic tools and debitage, ash, fire-cracked rock, partially burnt bark, and charcoal.

The results of the inquiry suggest that not all small circular cultural depressions can be assumed to have functioned as classic "cachepit" features or earth ovens as described in the ethnographic literature. It may be that shallow storage pits with above-ground roofs were commonly used by the inhabitants of Keatley Creek, particularly in parts of the site where Holocene deposits are thin, and the underlying glacial sterile deposits are very difficult to penetrate and seasonally frozen. Also, some of the depressions with comparatively larger diameters (i.e. 4-5 m) and shallow bottoms may have been short-term, single person dwellings. Although sweat lodge features have yet to be confirmed on the site, it is possible that they also exist, and fall within the size range of depressions investigated during the 1988 study. There is no reason to believe that many, if any, of the small depressions were being used preferentially for the disposal of butchered mammal bone.

Much remains to be learned about subsistence practices during the last 3500 years or so on the Canadian Plateau. Continued intensive

investigations of small circular depression features in a variety of contexts will undoubtedly contribute much toward this end.

References

Carlson, Catherine

1980 Excavations at the Curr site. In *The Archaeology of Kamloops*, by R.L. Wilson and C. Carlson, pp. 87–123. Department of Archaeology, Simon Fraser University Publication 7.

Lawhead, Stephen, D. Lepofsky, A.H. Stryd, and K. Kusmer

1987 Archaeological Investigation of EeRl 12, Lillooet B.C. Arcas Associates report on file, Archaeology and Outdoor Recreation Branch, Victoria, B.C.

Pokotylo, David L. and P. D. Froese

1983 Archaeological evidence for prehistoric root gathering on the southern Interior Plateau of British Columbia: A case study from Upper Hat Creek Valley. *Canadian Journal of Archaeology* 7(2): 127–157.

Richards, Thomas H. and M.K. Rousseau

1982 Archaeological Investigations on Kamloops Indian Reserve No. 1, Kamloops, British Columbia. Ms. on file, Archaeology and Outdoor Recreation Branch, Victoria, B.C.

Richards, Thomas H. and D. G. Howe

1987 Scheidam Flats: A Prehistoric Root Roasting Area Near Kamloops. *The Midden* 19(2):7-10.

Rousseau, Mike K., A.H. Stryd, D.I.D. Kennedy, R. Bouchard, K. Kusmer, and K. Lepofsky.

1988 *Excavations at the Sahhaltkum Bridge Site (EeQw-30), Chase, B.C.* Arcas Associates report on file, Archaeology and Outdoor Recreation Branch, Victoria, B.C.

Teit, James A

1900 The Thompson Indians. *American Museum of Natural History Memoirs* 2:4, New York.

1906 The Lillooet Indians. *American Museum of Natural History Memoirs* 2(5): 195–292, New York.

1909 The Shuswap Indians. *American Museum of Natural History Memoirs* 4:7, New York.

Von Krogh, Henning

1978 Archaeological Investigations in the Spences Bridge Locality, British Columbia. Report on file, Archaeology and Outdoor Recreation Branch, Victoria, B.C.

Table 1: Size, Depth, and Primary and Secondary Interpreted Functions of all Extra-Housepit Excavations at Keatley Creek.

EHPE #	SIZE	DEPTH	FAUNAL ASSOCIATIONS	PRIMARY FUNCTION	REUSE ?	SECONDARY FUNCTION
2	Small	Shallow	Mammal	Hearth	No	
3	Large	Moderate		Dwelling	Yes	Hearth
4	Medium	Moderate		Storage	Yes	Storage, Hearth
5	Medium	Moderate	Fish, Mammal	Storage	Yes	Hearth
7	Medium	Moderate	Fish, Mammal	Storage	Yes	Refuse Dump
8	Medium	Shallow	Fish, Mammal	Storage	No	
9	Medium	Moderate	Fish, Mammal	Storage	No	
10	Large	Deep	Fish, Mammal	Storage	Yes	Hearth
11	Medium	Moderate	Fish, Mammal	Dwelling	Yes	Dwelling or Storage
12	Medium	Shallow	Mammal	Hearth	Yes	Hearth
13	Small	Shallow		Storage	Yes	Hearth
15	Small	Shallow	Mammal	Roasting	Yes	Roasting
16	Medium	Moderate	Mammal	Storage	Yes	Hearth
17	Small	Shallow	Deer	Roasting	No	
18	Medium	Moderate	Salmon, Mouse, Deer	Roasting	Yes	Storage
19	Large	Deep	Salmon, Bird, Mammal	Storage	Yes	Roasting
20	Large	Deep		Roasting (Plant)	Yes	Roasting (Plant)
21	Medium	Moderate	Salmon, Horse	Storage	Yes	Storage
22	Large	Deep	Fish, Bird, Mammal	Storage	Yes	Storage
23	Small	Shallow	Mammal	Roasting (Plant)	Yes	Roasting (Plant)

Analysis of Lithic Assemblages from Extra-housepit Excavations

Jim Spafford

While the excavations at the Keatley Creek site focused primarily on cultural depressions over 5 m in diameter, a number of smaller cultural depressions were also tested. In their preliminary reports, the excavators suggested different functions for these features on the basis of their shapes, their contents, and their resemblance to ethnographically recorded dwellings, storage pits, and earth ovens. (See Chapter 11.1, this volume). This chapter will review the conclusions of the excavators in the light of more detailed analyses of the lithic assemblages recovered from these excavations.

The Features

Thirteen extra-housepit features were excavated at the time of this analysis. However, artifacts associated with the original function of these features could only be identified for EHPE's 2, 3, 8, 10, 11, and 12. Artifacts in the other EHPE's were clearly refuse infilling from nearby housepits. EHPE's 8 and 10 were interpreted as food storage pits. EHPE's 3 and 11 were interpreted as small dwellings. EHPE 2 was interpreted as a small hearth and EHPE 12 was interpreted as a large hearth.

Analysis of the Lithic Artifacts

The density of lithic artifacts per liter of excavation, the ratio of chert and chalcedony flakes to all debitage (the exotic flake ratio), and the ratio of modified artifacts to debitage (the tool: flake ratio) were calculated for each of the six extra-housepit excavations considered here. In addition, the modified artifacts from these features were classified according to the typology developed for the analysis of all lithic artifacts at the Keatley Creek

site (See Chapter 1, this volume). In most cases, excavation was by 10 cm arbitrary levels which sometimes overlapped natural strata identified in the course of the excavations. So far as possible, however, the analyses presented here were confined to strata believed to have been deposited during the use or occupation of the feature rather than in the course of cultural or natural infilling. The results of the analyses are summarized in Tables 1 and 2.

Storage Pits

EHPE's 8 and 10, the two extra-housepit excavations which were interpreted by the excavators as storage pits, are distinguished from the other extra-housepit features by very low lithic artifact densities and by the lack of any modified artifacts, except for one retouched flake in EHPE 10. EHPE 10 matches ethnographic descriptions of food storage pits (Teit 1900:198-199) in its form and in the presence of a bark liner. It also contained a large quantity of salmon bones and some mammal remains. The low lithic artifact densities in both EHPE 10 and EHPE 8 reinforce the excavators' tentative interpretation of EHPE 8 as a food storage pit, despite its low volume and unusual shape. Due to its low volume, the excavators suggested that this feature may have been roofed (See Chapter 11.10, this volume).

Dwellings

EHPE's 3 and 11, the two extra-housepit excavations that the excavators interpreted as dwellings, have similar ratios of modified artifacts to flakes and are comparable, in this respect, to larger housepits (e.g., Tool/ flake ratios: floor of HP 3 = .12, floor of HP 7 = .15, floor of HP 12 = .06). However,

the lithic assemblages recovered from these two extra-housepit excavations bear little resemblance to one another in most other respects. EHPE 11, the smaller dwelling, has a lower lithic artifact density than any other extra-housepit excavation except the two storage pits (EHPE's 8 and 10) and contains no exotic lithic materials. EHPE 3, the larger dwelling, has a higher lithic artifact density and a higher proportion of chert and chalcedony flakes to debitage than any other extra-housepit excavation except EHPE 12, the large hearth. Interestingly, the lithic artifact density in EHPE 3 (0.49 artifacts per liter) is the same as that on the floor of Housepit 12, which is more confidently interpreted as a dwelling. Among the types of modified lithic artifacts defined for these analyses, EHPE 3 appears to be rich in utilized flakes and retouched flakes while EHPE 11 is characterized by scrapers and bipolar cores. There are no striking similarities between the assemblages of modified lithic artifacts from these two features.

Larger housepits excavated at this site also exhibited considerable variability in various characteristics of their lithic assemblages (See Vol. II, Chap. 14). So the differences observed between these two features do not preclude the possibility that either or both were used as dwellings. They may, in fact, have housed people engaged in quite similar activities. The two features were only partially excavated and it has been demonstrated that the characteristics of a lithic assemblage can vary considerably in different areas of a housepit floor as well as when sample sizes are very small (See Vol. II, Chap. 14). More extensive excavations of these two features might provide a better understanding of how they were used.

Hearths

EHPE 12, which the excavators identified as a large hearth, stands out as the excavation with highest density of lithic artifacts, the highest ratio of chert and chalcedony flakes to all debitage. EHPE 12 has a very low ratio of modified artifacts to debitage because debitage is so abundant in this feature. EHPE 2, which was interpreted as a small hearth has a fairly high lithic artifact density but is relatively poor in chert and chalcedony flakes and has a relatively high modified artifact: debitage ratio. As for modified artifact types, retouched flakes are unusually abundant in EHPE 2 while EHPE 12 is rich in notches and projectile points. Scrapers represent a similar proportion of the modified lithic artifacts in both features but there are no other striking similarities between these two assemblages.

Mammal bone and charcoal were found in association with both EHPE 2 and EHPE 12, which suggests that both hearths were sometimes used for similar activities, probably the processing of animal carcases. However, the very high debitage density in EHPE 12 and the high proportion of chert and chalcedony flakes, suggest that some activities occured there which did not occur around the hearth at EHPE 2. These activities may have been centered around the manufacture of tools. The high debitage density at this hearth is consistent with this interpretation as is the presence of notches which are thought to have been used for working wooden shafts. Also, color changes and fire-spalling which probably resulted from heat treatment were observed in much of the chalcedony debitage associated with EHPE 12.

EHPE 12 is situated on the highest terrace at the site which may have been a ritual zone where the members of hunting parties, probably men, gathered for ceremonies and other activities related to the hunt (See Chaps.

10.13-10.15, this volume). Such an interpretation is consistent with the carcass processing and tool making activities suggested for this feature.

Summary and Conclusions

With the exception of storage pits, which do seem to be characterized by a low density of lithic artifacts, these data do not indicate that each type of feature, that is, hearths, small "dwellings", and larger housepits, has a characteristic lithic assemblage (See Vol. II, Chap. 14 for data on housepits). Examples of these three types of features have overlapping values for lithic artifact density, for the ratio of chert and chalcedony flakes to all debitage, and for the ratio of modified artifacts to debitage. Further, the proportions in which the various types of modified lithic artifacts occur, seem to vary at least as much between features of the same type as between features of different types.

This suggests:

1) That each of the of the hearths and small "dwellings" considered here could have been used for quite different activities. For example, EHPE 12, the larger hearth, appears to have been used for some activity which did not occur at the other outdoor hearth, EHPE 2.
2) That some outdoor hearths and small "dwellings" may have been used long enough to produce lithic densities equivalent to some housepits.
3) Some extra-housepit "dwellings" may have been used for much the same purposes as some larger housepits. In particular, the lithic assemblage from EHPE 3, the larger extra-housepit dwelling seems to be very similar to that from the floor of HP 12 in some respects. Without more extensive excavation and a larger sample of small

"dwellings, however, the possibility that one or both of these two small ''dwellings" were constructed for some special purpose cannot be excluded.

It does seem likely that both outdoor hearths were used for specialized activities which represent either a subset of the activities carried out inside housepits or activities which did not ordinarily occur inside housepits, perhaps activities which required large fires.

This brief examination of six small features indicates that lithic artifacts may be as densely distributed in some of the small extra-housepit features as in some of the larger housepits and that their lithic assemblages may exhibit considerable variability. Clearly, identifying a small depression as a hearth or a "dwelling" is only the first step in understanding its function. Further investigation of smaller features at the Keatley Creek site will be important to a complete understanding of the full range of activities which occured there.

References

Teit, James A.

1900 The Thompson Indians. *American Museum of Natural History Memoirs* 2:4.

Table 1: Summary of the Analyses of Lithic Assemblages from Extra-housepit Excavations at the Keatley Creek Site, EeRl7.

EHPE **proposed function**	**3** **dwelling**	**11** **dwelling**	**2** **hearth**	**12** **hearth**	**8** **storage**	**10** **storage**
mean surficial diameter of feature (m)	5.00	3.50	1.25	3.00	3.38	4.25
approximate excavated volume (l)	300	971	448	578	685	1358
flakes	135	111	97	459	36	3
flakes/litre	0.45	0.11	0.22	0.79	0.05	0.00
chert, chalcedony, & obsidian flakes	23	1	4	173	0	1
exotic flake ratio	0.17	0.01	0.04	0.38	0.00	0.33
modified artifacts	12	11	17	18	0	1
tool: flake ratio	0.09	0.10	0.18	0.04	0.00	0.33
total lithics (except fcr)	147	122	114	477	36	4
lithic density (total lithics/litre)	0.49	0.13	0.25	0.83	0.05	0.00
whole & chipped/tools	0.41	0.67		0.67	1.00	0.50

Table 2: Lithic Artifact Types Associated with Small Cultural Depressions

	Dwellings		hearths	
Artifact type	**EHPE 3**	**EHPE 11**	**EHPE 2**	**EHPE 12**
utilized flakes	5	3	4	6
expedient knives	3	0	7	1
scrapers	1	3	3	4
bipolar cores	0	2	1	2
points	1	1	0	3
notches	0	0	0	2
ornaments	1	1	0	0
piercers	1	1	0	0
bifacial knives	0	0	1	0
hammerstones	0	0	1	0
cores	0	1	0	0
miscellaneous	0	1	0	0
Total	12	11	17	18
	dwellings		**hearths**	
Artifact type	**EHPE 3**	**EHPE 11**	**EHPE 2**	**EHPE 12**
utilized flakes	42%	27%	24%	33%
expedient knives	25%	0%	41%	6%
scrapers	8%	27%	18%	22%
bipolar cores	0%	18%	6%	11%
points	8%	9%	0%	17%
notches	0%	0%	0%	11%
ornaments	8%	9%	0%	0%
piercers	8%	9%	0%	0%
bifacial knives	0%	0%	6%	0%
hammerstones	0%	0%	6%	0%
cores	0%	9%	0%	0%
miscellaneous	0%	9%	0%	0%
Total	100%	100%	100%	100%

Frequencies and percentages of modified artifact types in lithic assemblages from extra-housepit excavation s at the Keatley Creek site, EeRl7

Extra-Housepit Excavation 1

M. Greene

To determine what kind of activity areas might occur outside housepits, a test trench was excavated on the relatively level ground between HP's 6, 7, and 10. This was EHPE 1 (this Volume, Preface, Fig. 1). The trench, 4 m north to south by 50 cm, was excavated in arbitrary 10 cm levels. The excavation levels were contoured to the general slope of the ground.

Square A

At a depth of 30 cm in Square A the remains of a roasting pit (Feature 1) were recovered (**Fig. 1**). This feature consists of a tight concentration of large cobbles (15–20 cm) and fire-cracked rock. It extends to 40 cm below the surface (BS) and occupies 60 cm of the southern end of Square A and 30 cm of the northern end of Square B. The soil was a dark loam mixed with charcoal. Five and a half buckets of FCR were removed from Feature 1. The debitage had been heat treated, evidenced through heat spalls. There were no tools or bones found associated with the feature. Thus, it appears to have been used for roasting roots or other plant materials. The northern half of Square A was devoid of cultural material at 35 cm BS. The size of the feature was estimated to be 60 cm north to south and 50–80 cm east to west, based on the concentration of rock in the wall profiles.

Feature 1 was capped over with fill in Square A, and the depression was later used as a hearth. In this level are fire reddened soil, and a small concentration of FCR. Specks of charcoal and fragments of burnt and calcified bone were found in the south-west corner of Square A. The hearth extended to 16 cm BS. A small portion of this stain extended into Square B.

Square B

The southern 80 cm of Square B contained the remains of a housepit rim deposit (Strata XIII) at 30 cm. This overlayed Feature 1 and contained both a Plateau, (at 12 cm BS) and a Kamloops (at 10 cm BS) projectile point. The artifacts from the southern half of trench-B were associated with the rim of HP 7. A charcoal sample for C^{14} dating was collected from Level 3, at 25 cm BS, in Strata XIII. This charcoal may represent discarded roof beams from the housepit. Also recovered were small mammal long bone fragments, one-third bucket load of FCR, and birch bark rolls. Strata XIII was characterized by a dense concentration of pea-sized gravels and hydrophobic soil.

Sterile soil was reached at 50 cm BS in Square B. A 50 cm wide test hole was sunk in the south end of Square B continuing below the rim deposit. At 60 cm, the test was below the rim deposit and into Strata XV. Artifacts were recovered 75 cm BS. Hard packed sterile soil was reached at 80 cm BS.

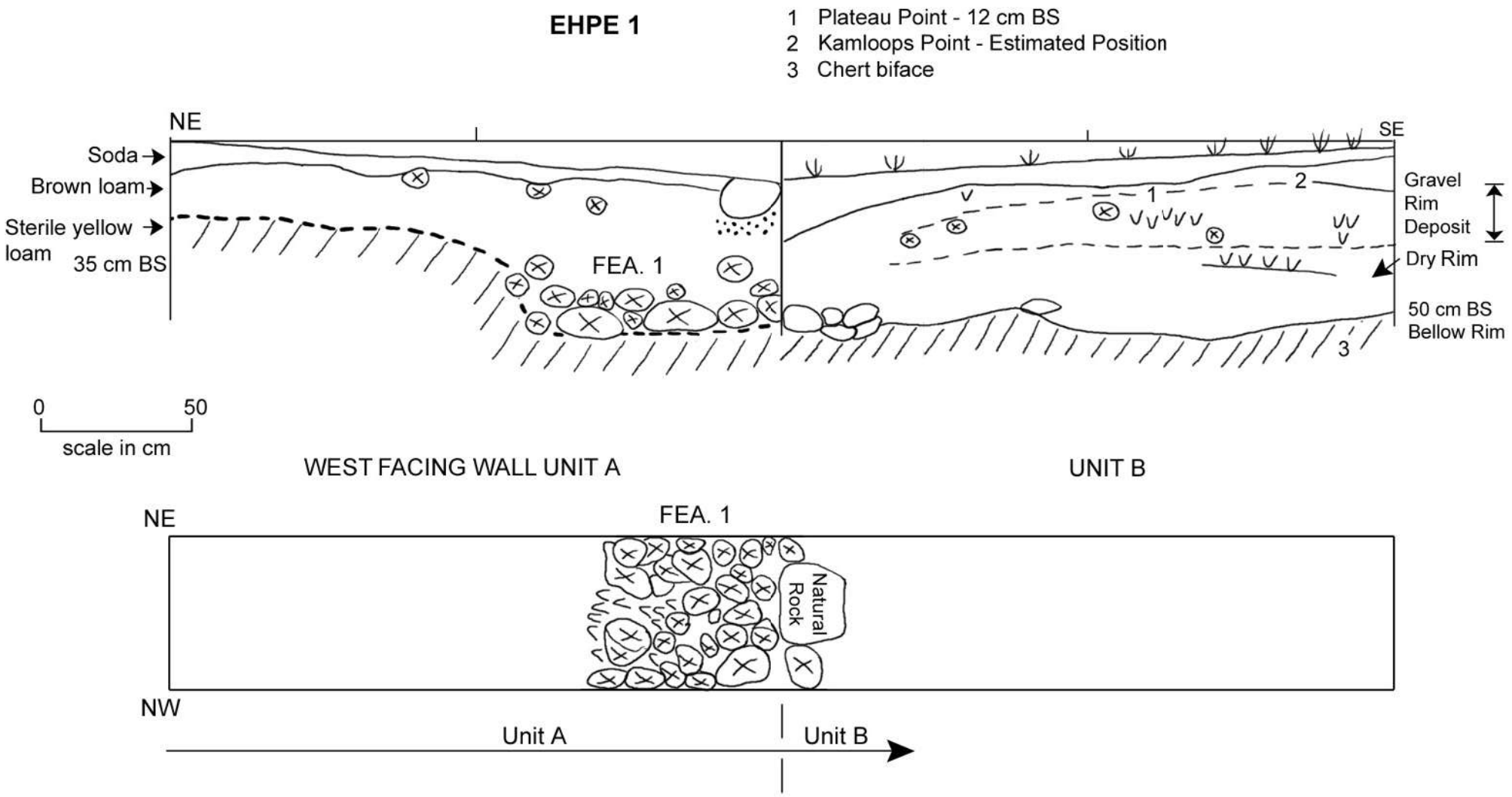
Summary and Conclusions

In summary, Squares A and B contained an initial occupation, a roasting pit feature, which predates the most recent (Kamloops) housepit occupation. The depression was capped by a later hearth in Level 1, in Square A, possibly contemporaneous with the Kamloops occupation. Late rim deposits were deposited over Feature 1, at 20 cm BS in Square B, which is associated with the Kamloops occupations.

Figures

Figure 1: Cross-section and plan view of EHPE 1 showing the roasting pit associated with HP 7.

Figure 1. Cross-section and plan view of EHPE 1 showing the roasting pit associated with HP 7.



Summary of Extra Housepit Excavation 2

Don Jolly

The test trench for EHPE 2 is located 70 m south by 86 m to 90 m east of the site datum. The trench was dug on an east-west axis, approximately 3 m north of the rim of HP 7 (this Volume, Preface, **Fig. 1**).

The test trench (**Fig. 1**) indicates a least one occupation, as indicated by the hearth feature found in Subsquare A. However, considering the location of the test trench (just below a steep embankment to the east and the rim of the housepit to the south), many of the flakes found in the upper layers may be a result of slopewash.

Stratigraphy

Stratum I

Stratum I consists of a dark humus layer. Charcoal and basalt flakes were present in both test Squares A and B. Fire cracked rock is scattered throughout this stratum.

Stratum II

Stratum II represents slopewash from the embankment to the east. The sediments are a light sandy loam. A few bones and stones are located in the western test trench (Sq. A).

Stratum III

Stratum III has dark moist fine grain sediments. The majority of the lithics were found in this stratum. Moreover, large ungulate bones were found primarily within this stratum. Thus, cultural activity is quite obviously

present here. Unfortunately no diagnostic projectile points were in the test trenches.

Stratum IV

Stratum IV is a tan fine grain silt. No artifacts or bones are present, thus this stratum can be considered to be part of the sterile till.

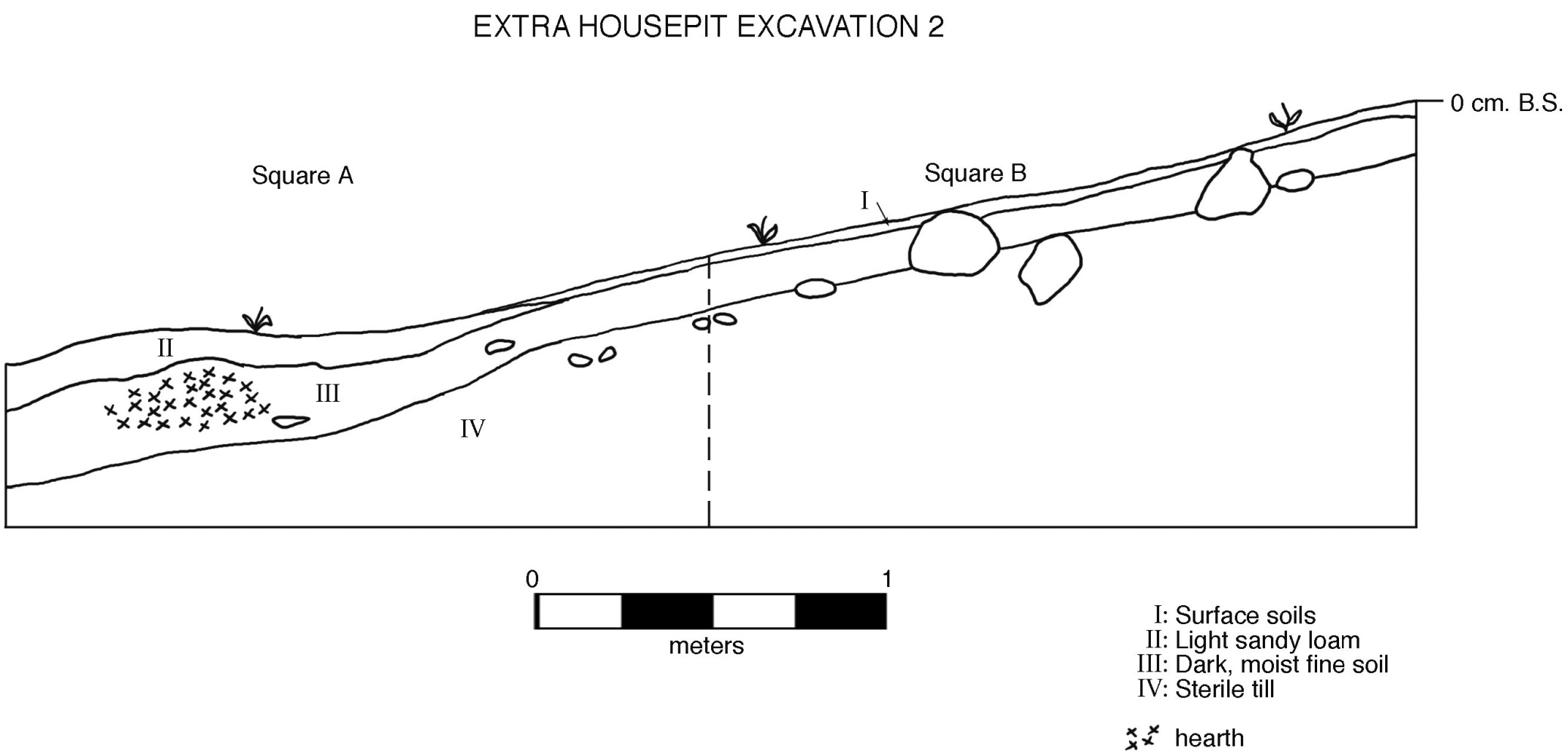
Summary and Conclusions

In sum, the top stratum is more than likely slopewash. The lower stratum (III) indicates cultural activity. This activity can be assumed to be associated with HP 7 in the form of either a hearth or a small roasting pit.

Figures

Figure 1: Extra-Housepit Excavation 2 stratigraphic profile.

Figure 1. Extra-Housepit Excavation 2 stratigraphic profile.



Extra Housepit Excavation 3 Summary

Ian Kuijt

Excavation of EHPE 3 (see this Volume, Preface, **Fig. 1**) has revealed information suggestive of multiple reuse of the cultural depression in which the square was situated. Stratigraphic and excavation data indicate that at least three, possibly four, occupations occurred in this area. Initial occupation, represented by Strata V (see **Fig. 1**), appears to have been a semi-subterranean dwelling/structure. This structure was relatively shallow, (approximately 50 cm deep) and may have been rectangular in form. Walls are steep and very well defined. After this occupation, a second reuse of this area occurred. This second occupation, represented by Strata II, was in the form of a semi-subterranean structure, similar to that described in ethnographic accounts by Teit (1900, 1909) and Ray (1939). The structure appears to have been circular about 8 m from rim to rim. This structure has been constructed by filling in the previous dwelling with sediments. A third possible occupation, is suggested by a burn zone (Strata IV) located outside of the structure indicative of the initial occupation. This strata is on top of sterile material and appears to have been truncated by Structure 1, thereby placing it earlier in time than initial construction of Structure 1. Due to limits of excavation, it is unclear if this burn zone predates or was simultaneous with Structure 1. Evidence for another occupation of this area is found in Strata II, in the form of a root-roasting pit. This pit feature is intrusive into Stratum II.

References

Ray, Verne

1939 *Cultural Relations on the Plateau of Northwestern America*. Frederick Webb Hodge Anniversary Publication fund, Vol. III, Los Angeles.

Teit, James A.

1909 The Shuswap. *American Museum of Natural History Memoirs* Vol. II, Part 7:447-789.

1900 The Jesup North Pacific expedition, IV: The Thompson Indians of British Columbia. *American Museum of Natural History Memoirs* Vol. II

Figures

Figure 1: Extra-Housepit Excavation 3 stratigraphic profile

Figure 1: Stratum Legend

I: Surface zone: fine sands/silts, dark brown and finely sorted, clasts being subrounded and small in size (less than 3 cm.) likely brought in through natural agents such as slopewash.

II: Occupation zone (second occupation). Likely consists of roof fall and floor zone on top of Strata III. Dark brown/black in color. Sandy matrix with angular to subrounded clasts of wide size range. intrusive into this strata is Feature 1, likely a root roasting pit.

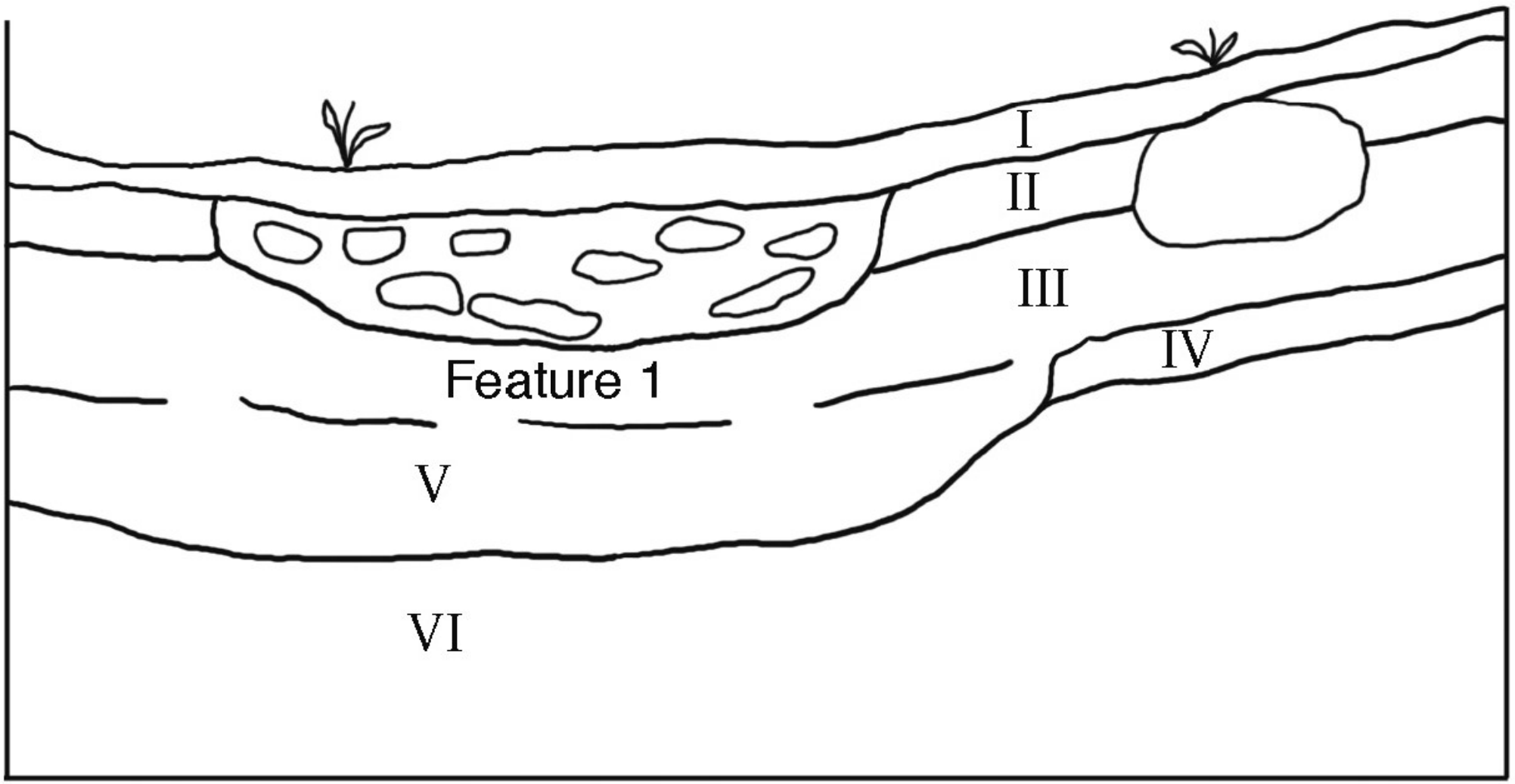
III: Fill (?) material light brown in color; sands with gravel and pebble matrix. Homogeneity of deposits and random orientation of particles suggests a secondary context.

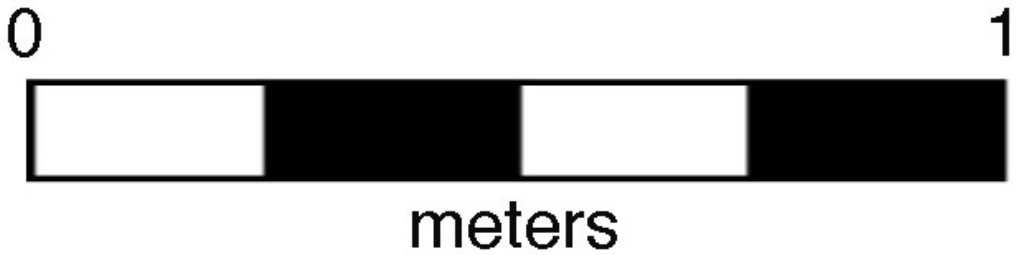
IV: Burn zone including some fire reddening underneath dark black carbon lens. This may represent a small fire or hearth and appears to be truncated by Strata V.

V: Initial occupation. Brown/black in color; sediments are sand/silts with angular-subangular clasts as gravels. High amounts of clasts separate this zone from Strata III.

VI: Sterile till.

Figure 1. Extra-Housepit Excavation 3 stratigraphic profile





Excavation Summary: Extra Housepit Excavation 4

M. Rousseau

The area examined by EHPE 4 was a small circular cultural depression measuring ca. 3.2 m north-south by 3.5 m east-west (Vol. III, Preface, **Fig. 1**). It resembles (surficially) what are usually referred to as "cache pits" or "earth ovens." Excavation revealed at least three use-episodes for this feature, twice as a storage pit, and once as an earth oven or hearth.

Stratigraphy

Stratum I

Stratum I (see **Fig. 1**) represents recent pothunters disturbance and recent natural sediment deposition. From this zone came the proximal portion of a Plateau horizon point and a microblade core which may have initially come from Stratum II. Stratum I cuts into Stratum II.

Stratum II

Stratum II contains evidence which suggests that the final aboriginal use of this feature was as an earth oven or hearth. This is indicated by the thin lenses of charcoal, (IIa, IIb), and high density of charcoal and FCR in this stratum. Some bone was also recovered. A flotation sample was taken from the bottom of this hearth/oven. The point base and microblade core found in Stratum I may have originally been associated with Stratum II, therefore relating it to the Plateau horizon.

Stratum III

Stratum III represents use of the pit as a relatively shallow storage pit, which was lined with several slabs of Ponderosa pine bark along its bottom.

A float sample was taken from immediately above, and around the back slabs. A microblade core was recovered from this stratum, in the northern half of Square A. Its association with the use of the storage pit is unclear, as it may have been deposited here from elsewhere by slopewashing or as a result of aboriginal digging activities.

Strata IV and V

Strata IV and V are typified by having relatively low cultural content and appear to have been deposited after the initial construction and use of a large cache pit, which is manifest by Stratum VI.

Stratum VI

Stratum VI represents infilling deposits into a basin-shaped storage pit feature, whose bottom is represented by Strata VI A. A Plateau horizon point was found just above the bottom of the pit. It is estimated that the original dimensions of this storage pit were ca. 100 cm in diameter by approximately 80 cm deep.

The relationship between Stratum IV and V is not clear, however, it may be that Stratum V was deposited from digging activities to the immediate south after the storage pit was abandoned. A float sample was taken from Stratum VI A. A large rock was found at the bottom of this storage pit, which is typical of other storage pits in this area. It may have found its way there by intentional discard into the pit, or as is mentioned in the ethnographic literature (Teit 1900) it may have been a "weight" rock, which once weighted a lid over the cache pit. Several pieces of bone (mammal and fish) were recovered from the bottom of the pit, as were a large quantity of charcoal and flakes. The charcoal's presence is probably owing to having

fallen in the pit accidentally, or perhaps by intentional discard there. No FCR was noted in this pit feature, nor were there any burned soil lenses.

Stratum VII

Stratum VII appears to represent a culture bearing deposit which predates the construction and use of the initial storage pit indicated by Stratum VI. This deposit contained a plateau horizon point in Unit B, dating it to between ca. 2,400–1,200 BP. Its small size however, suggest probably late Plateau horizon (ca. 1,600–1,200 BP).

Stratum VIII

Stratum VIII represents sterile basal till. Excavation was terminated at depth of ca. 110 cm below surface.

Summary and Conclusions

In sum, at least three separate use-episodes can be identified in this depression feature:

(1) initial construction and use of a storage pit indicated by Strata VI and VIa;

(2) a second storage pit of smaller dimensions represented by Stratum III, and:

(3) a final use as a hearth or earth oven as represented by Stratum II, IIa, and IIb.

All use episodes appear to date to the latter part of the Plateau horizon (ca. 1,600–1,200 BP).

The presence of two microblades in these units seems to suggest that microblade technology was in use during the late Plateau horizon.

Microblades are consistently absent in most excavated Plateau horizon components, and the microblade may have been incidentally introduced through displacement by cultural or natural processes. This is much more recent than the commonly held belief that they went out of use by 4,000–3,500 BP.

References

Teit, James A

1900 The Thompson Indians. *American Museum of Natural History Memoirs* 2:4, New York.

Figures

Figure 1: Extra-Housepit Excavation 4 stratigraphic profile.

Figure 1: Stratum Legend

I: Medium gray brown compact silt with some gravels. Pothunter's hole and recent surface deposition.

II: Medium gray brown loose silt with some gravel, charcoal chunks and lenses, medium sized pebbles and fire-cracked rock.

IIa & IIb: Lenses of charcoal and II, representing use of feature as a hearth; fire-cracked rock associated.

IV: Medium gray brown sandy silt and gravel with large pebbles. Bottom of strata with slabs of bark and represents bottom of a storage pit.

V: Medium gray sand gravelly silt with high small pebble content; may be slopewash sediments from housepit rim to the north.

VI: Medium brown loose silt with very few pebbles and low gravel content. Low cultural content.

VI: Dark gray black compact sandy silt with small pebbles and high cultural material content. Represents initial pit shape and fill.

VIa: Same matrix as VI but with a high percent of charcoal, lots of flakes, and some bone. Represents the bottom of a storage pit.

VII: Dark gray black compact sandy gravelly silt with a high percent of pea gravels and pebbles. Represents pre-pit deposits. There is a low percent of cultural material (i.e. flakes, bone), but many charcoal pieces.

VIII: Sterile basal till: compact medium yellow brown clayey, sandy, gravelly silt.

P1: Plateau point

P2: Plateau point

P3: Plateau point

C1: Microblade core

C2: Microblade core

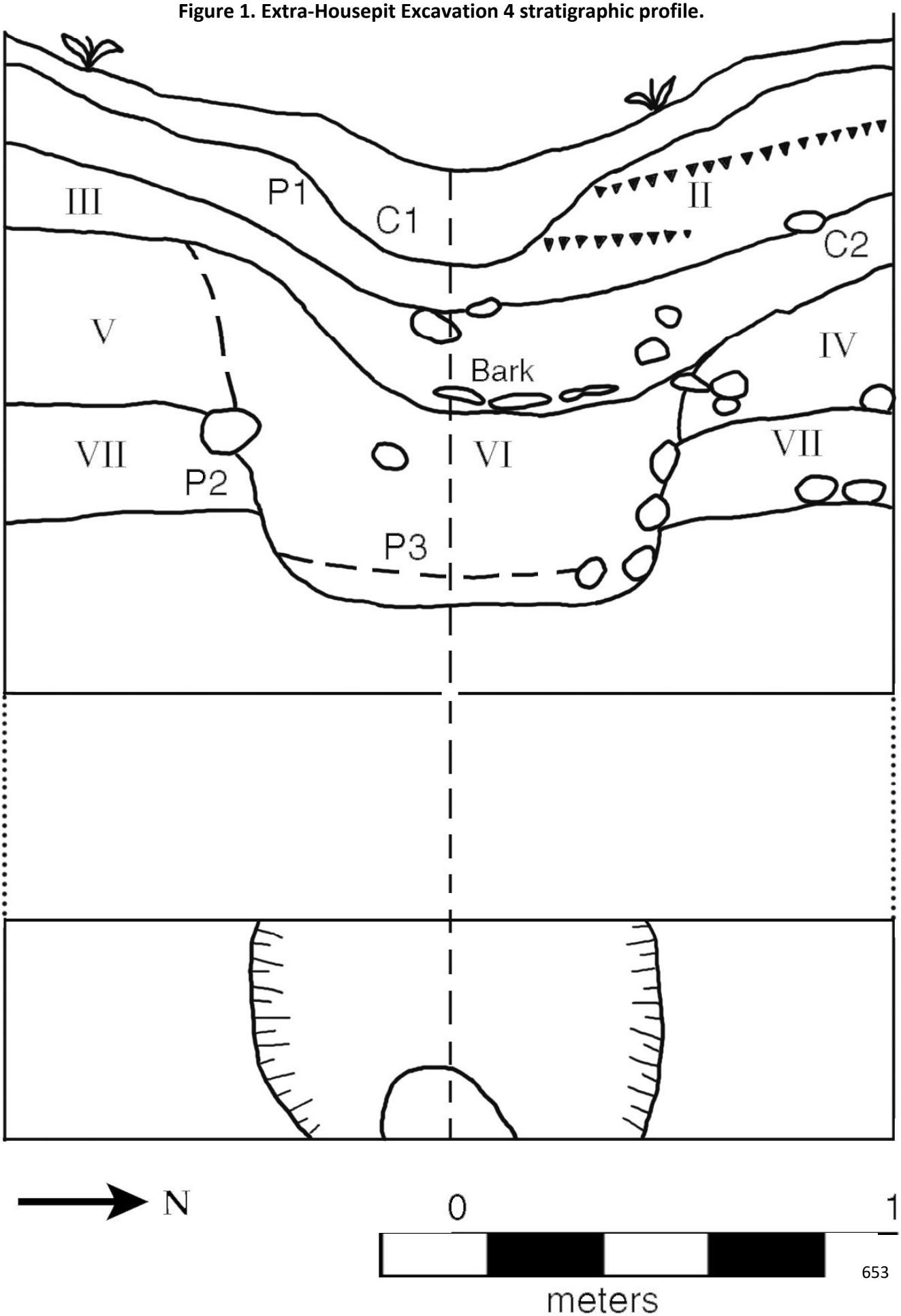


Figure 1. Extra-Housepit Excavation 4 stratigraphic profile.

Summary: Extra-Housepit Excavation 5

Extra-Housepit Excavation 5 was redesignated as HP 119, see Volume III, Chapter 10.21.

Extra-Housepit Excavation 6 Excavation Results

Mike Rousseau and Dave Crellin

Extra Housepit Excavation (EHPE) 6 was dug into a small flat-topped mound-like feature located in the western section of the site about 35 m southeast of HP 1 (Vol. III, Preface, **Fig. 1**). It measures ca. 4.0 m north-south by 4.0 m east-west, and is about 1.0 m higher than the terrain to the immediate south. An excavation square measuring 2.0 m north-south by 0.5 m east-west was placed in the central aspect of the mound. Square A provided a view of the internal structure of the "mound" and permitted an interpretation of its natural and cultural significance, and formation history. The unit was excavated using 10 cm thick arbitrary levels below ground surface. It was dug primarily using trowels, although the basal deposits (VIIa, and VIIb) were removed by square-nosed spade.

Six separate strata were identified during the excavations. They are indicated on the profile drawing of the west wall (**Fig. 1**).

Stratigraphy

Stratum I

A fairly loose gray brown (10 YR 2/1) sandy silt with some pea gravels and small pebbles. The uppermost 1 cm consisted of littermat. This Stratum extends from between about 0–7 cm below surface and the lower half contains small pieces of FCR (<3 cm), and small scattered pieces of charcoal. A small number of flakes were secured from the lower aspect of this stratum. It represents recent deposits.

Stratum II

Stratum II extends from about 7–35 cm below surface in the southern half of the unit and between about 7.0–15.0 cm below surface in the northern half of the square. It is a compact, yellow brown (5 Y 2.5/1) sandy silt with about 30% pea gravel. Charcoal bits and chunks are scattered uniformly throughout this stratum. Lithic frequency increases compared with Stratum I. This matrix appears to have been secondarily deposited by the small ephemeral runoff channels that pass on either side of the mound, evidenced by microstratigraphic lenses of loosely sorted silts and sand contained within this stratum. Several of the other strata appear to have also been deposited by this agency.

Stratum III

Stratum III was confined to the northern half of the unit, and was a loose light gray brown (10 YR 2/2) sandy silt with a high proportion of pea gravels and angular pebbles. The incidence of cultural material was greater in this stratum than the previous stratum, and included several utilized flakes, numerous flakes, rodent tooth fragments, birch bark, scattered charcoal chunks, and some FCR. Because it also contained microstratigraphic lenses of loosely sorted sand and silt, Stratum III is interpreted to have been secondarily deposited by fluvial action, which incorporated cultural materials during transport. It resembles rim-deposits somewhat, however, there is no housepit surficially evident to the immediate north of this mound-like feature.

Stratum IV

Stratum IV was encountered between about 30–45 cm below surface and varies in thickness between 10–20 cm. It is a loose, medium gray brown

(10 YR 2/1) silty sand with a high (40%) pea gravel content and some (10%) small pebbles. It dips slightly to the south. Several thin lenses of partially-sorted sand and pea gravel indicate a fluvial deposition history. Cultural material included charcoal, FCR, a utilized flake, and a large quartzite flake, and some bark fragments.

Stratum V

Stratum V extended from about 50–70 cm below surface throughout the excavation square, and is relatively horizontally disposed. It is slightly variable in thickness ranging from 15-2O cm. It is a loose, medium gray brown (10 YR 2/1) silty sand with very high pea gravel (50%) content and lots (20%) of small pebbles. This stratum may have been secondarily deposited from the north by fluvial action from the ephemeral stream, however, in general the matrix resembles rim/refuse deposits. Cultural materials included a quartzite unidirectional core, a small triangular biface, an end scraper, numerous flakes, a few small bone fragments and small bits of charcoal (minimal).

Stratum VI

Stratum VI was a loose, dark gray brown (5 Y 2.5/1) sandy silt with some (10%) pea gravel and the occasional small pebble. It extends throughout the unit between about 70-78 cm below surface and varies in thickness from 4-8 cm. It is horizontally disposed and its dark color is owing to high organic content. It appears to be the "A" horizon of a buried paleosol. Cultural materials included a high frequency of flakes of medium-grained basalt, FCR, some bits of charcoal, and a few small pieces of bone. The general increase in cultural material compared to the strata above and below is attributed to

cultural activities occurring on the stable paleosol surface. It represents the initial use of this area of the site.

Stratum VII

Stratum VII consists of two sub-strata which vary slightly in color and texture. Stratum VIIa was a fairly consolidated, light yellow brown (2.5 Y 3/2) clayey silt with some sand (20%), lots of pea gravel (30%), and a few small pebbles (10%). No cultural materials were recovered although a few scattered pieces of charcoal were noted. It extends from about. 78- 85 cm below surface and appears to be the "B" horizon of a buried paleosol. Stratum VIIb was a compact, light yellow gray (2.5 Y 3/3) sandy clayey silt with high pea gravel content (40%) and moderate (20%) pebble content. It represents sterile "C" horizon deposits of the paleosol.

Summary and Conclusions

Extra Housepit Excavation 6 revealed that this small mound-like feature was formed primarily by natural depositional agents. Similar terrace-like features are evident to the immediate east and west of the investigated "mound". The incision of this small terrace by two ephemeral stream channels is responsible for the "mounded" appearance. The terrace appears to have formed by aggraded fluvial sediments deposited during periods of increased precipitation.

Strata II - V all appear to have been deposited by fluvial activity associated with the ephemeral stream activity. Cultural materials contained within them were probably initially deposited in areas to the north, and were incorporated into fluvial sediments during periods of intense precipitation. Some items, particularly the larger ones such as cores, may

have been deposited in primary content in this area of the site during dry and stable conditions.

Strata VI and VII represent a buried paleosol that was capped with the fluvial sediments. Stratum VI represents the stable ground surface, and it yielded a fair amount of cultural material which relates to the initial use of this area of the site, although no diagnostic artifacts were recovered that could provide a relative age for this surface.

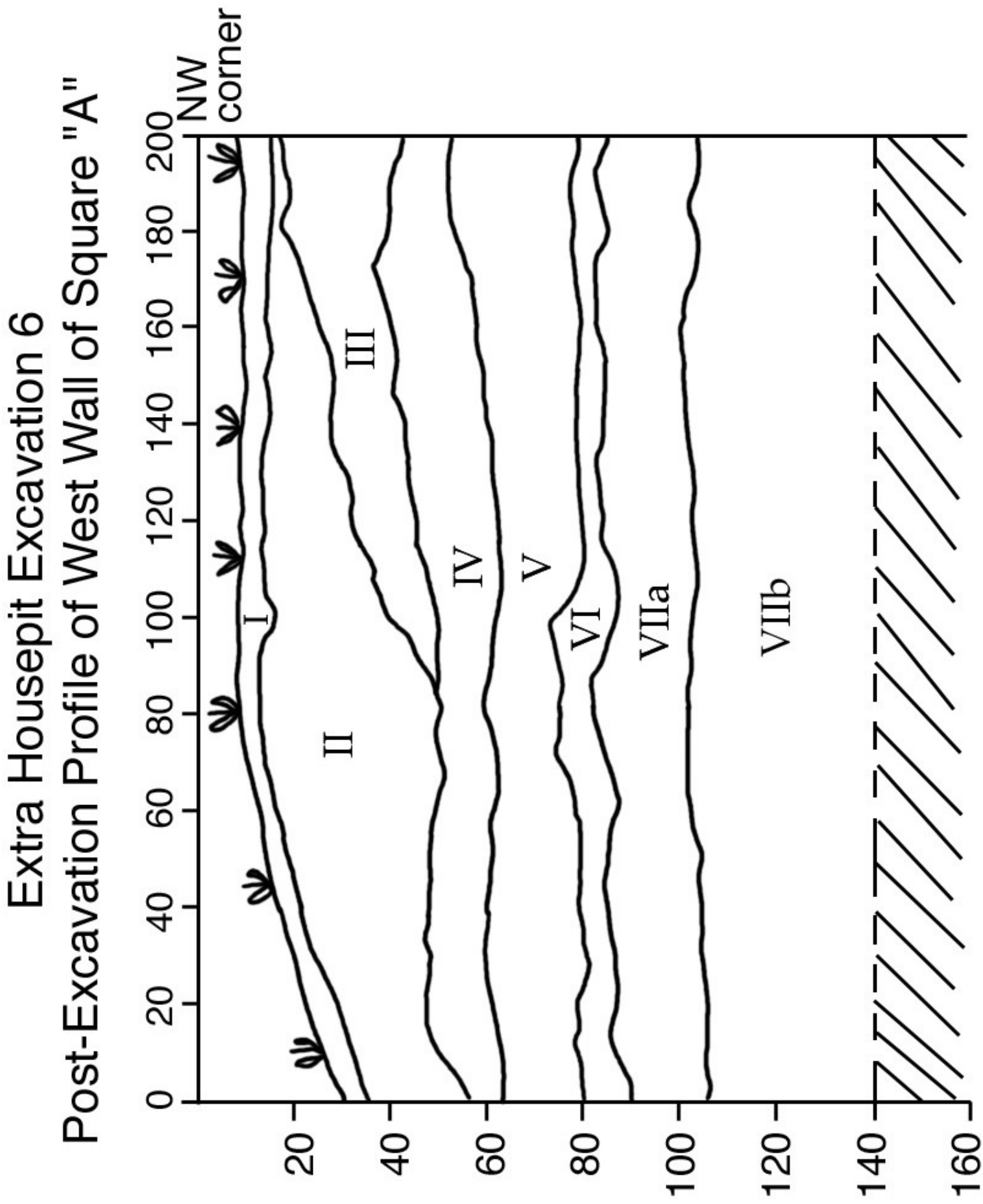
The majority of the cultural material was recovered between about 0.5 and 80 cm below surface. It consisted primarily of lithic debitage and tools, FCR, scattered charcoal, and the rare piece of birch bark, and small pieces of mammal bone. The greatest density of cultural materials was noted in Strata IV, V and especially Vl. No diagnostic artifacts were recovered.

In conclusion, the low, flat-topped "mound" feature was produced by natural agency associated with intensive fluvial activity in this section of the site. It appears that there has been several episodes of intensive fluvial activity which resulted in rapid deposition of poorly sorted clastic debris and cultural materials from portions of the site to the north.

Figures

Figure 1: Extra-Housepit excavation 6 post-excavation profile of west wall of Square A.

Figure 1. Extra-Housepit excavation 6 post-excavation profile of west wall of Square A.



Extra Housepit Excavation 7 Excavation Results

Mike Rousseau

Location and Description

Extra Housepit Excavation (EHPE) 7 was dug into a small oval cultural depression having a saucer-shaped surficial cross-section. The depression resembles what is commonly regarded as a "cache pit". It is located in the southeastern aspect of the rim of HP 4 (Vol. III, Preface, **Fig. 1**). It measures 3 m north-south, by 2.3 m east-west, by 2.5 m deep on the surface. Three conjoining excavation squares measuring 1 m north-south by 0.75 m east-west were dug out to form a north-south trench whose west wall intersected the center of the surficial depression. The northernmost unit was designated Square A, the middle one Square B, and the unit in the south Square C (**Fig. 1**). The purpose of the investigation was to determine the internal structure of the pit feature, and to test the expectation that subsequent to their initial use, they were sometimes used as refuse receptacles. Excavation was undertaken using 10 cm arbitrary levels below ground surface. Trowels and occasionally square nosed spades were used.

The excavation revealed relatively complex stratigraphy, and 20 separate strata were identified on the western wall profile which intersected the center of the pit. Only the western wall was profiled in detail (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I was present from about 0-10 cm below surface throughout the excavation trench. It was a moderately loose, light gray brown (10 YR

3/2) sandy silt with some (10%) pea gravel. Cultural material included a moderate density of lithic waste flakes, moderate amounts of scattered charcoal, and some FCR (small pieces). Lithic artifacts included a Plateau horizon projectile point from Square C 10 cm below surface, a small endscraper from Square A, and a large core fragment from Square C. There was also a concentration of charcoal chunks in the northwest corner of Square A between 5 -10 cm below surface. This stratum represents fairly natural infilling of the cache pit depression.

Stratum II

Stratum II was an isolated lens of semi-compact, light gray (10 YR 3/3) sandy silt with moderate (30%) amounts of pea gravel and some small pebbles (5%). The northern edge of this stratum was slightly darker than the southern aspect, apparently owing to being at the center of the surficial depression. Cultural materials recovered include a moderate frequency of lithic waste flakes, some FCR, and a piece of bone. It appears to represent the final intentional or unintentional aboriginal depression infilling, probably associated with the build-up of the adjacent HP 4 refuse deposits, or dumping of refuse and matrix from inside the house during cleaning episodes. Other similar infilling episodes are represented by Strata III to VI.

Stratum III

Stratum III was an isolated lens of semi-compact, medium gray-brown (10 YR 3/1) sandy silt with some (15%) pea gravel and a few small pebbles and cobbles (mostly in bottom aspect of the stratum). It occupies the south-central section of the pit between about 10-30 cm below surface, and it is sandwiched between Strata II and IV. Cultural materials consisted of a

charcoal concentration between 20-30 cm below surface, a high frequency of lithic waste flakes (including several large flakes), some small pieces of bone, and a few small pieces of FCR. It represents the second to last intentional pit infilling, and appears to consist of house rim deposits and perhaps refuse and matrices associated with house cleaning episodes that were intentionally dumped in this pit.

Stratum IV

Stratum IV was an isolated lens of semi-compact, light gray (10 YR 4/2) sandy silt with some (10%) pea gravel and a few small pebbles (5%). It occupies the central and northern interior of the pit feature. Cultural materials include scattered charcoal chunks, birch bark rolls, a high frequency of lithic waste flakes, a portion of a probable Plateau/early Kamloops horizon corner-notched point, some small FCR, and a few small pieces of bone. This stratum represents the third intentional episode of pit infilling, probably from HP 4 only a meter or two to the northwest.

Stratum V

Stratum V occupied the southern aspect of the bottom of the originally excavated pit feature. It was a lens measuring about 15 cm thick that extended from about 20-40 cm below surface. It is a loose, medium gray-brown (10 YR 3/1) sandy silt with a low (10%) frequency of small pebbles, and some cobbles (2%). Cultural material included scattered charcoal bits and chunks, small lithic waste flakes, slabs of Douglas fir bark from 36-40 cm below surface, and a few pieces of bone. It represents the second intentional dumping episode into the pit feature, and probably originated from HP 3 to the immediate south.

Stratum VI

Stratum VI was a lens of loose, light gray (10 YR 3/2) sandy silt with low (15%) pea gravel content. It occupied the bottom of the pit feature between about 40-55 cm below surface, and represents the first dumping/intentional infilling episode of the cache pit. Cultural materials include moderate amounts of charcoal chunks, a chalcedony formed uniface, utilized flakes, a moderate amount of lithic waste flakes, birch bark rolls, and a few pieces of bone. Some of these materials, particularly the birch bark and bone, may be related to the initial use of the pit feature as a cache/storage facility.

Stratum VII

Stratum VII was present on either side of the cache pit feature in the northern aspect of Square A, and the southern half of Square C. It is a fairly compact, light gray (10 YR 4/2) sandy silt with moderate (30%) pea gravel content, and low (15%) pebble content. Cultural materials include scattered charcoal and burnt pieces of wood, ponderosa pine bark, many lithic waste flakes (several are quite large), low frequencies of FCR, and a few pieces of bone. A Plateau horizon point was also recovered at 28 cm below surface. This stratum is typical of rim deposits noted elsewhere at the site. It likely relates to construction/refurbishing of HP 4 to the north and/or HP 3 to the south. It was deposited prior to the construction and use of the cache pit.

Stratum VIII

Stratum VIII lay in the northern half of Square A between ca. 10-35 cm below surface. It consists of a loose, light gray-brown (10 YR 3/3) sandy silt with moderate pea gravel (35%), and rare (2%) small pebbles. Cultural materials include charcoal concentrations, three unformed unifaces, many lithic waste flakes, and some FCR. This stratum represents rim spoil deposits from HP 4.

Stratum IX

Stratum IX lay at the northern end of Square A between ca. 30-40 cm below surface. It consists of a very loose, light gray (10 YR 4/2) sandy silt with low (5%) pea gravel content and moderate amounts of scattered organics, particularly charcoal. It represents house rim deposits from HP 4.

Stratum X

Stratum X also occupies the north edge of Square A, and lay between ca. 40-55 cm below surface. It consists of a very loose, light gray-brown (10 YR 3/3) sandy silt with very high (70%) organic content, consisting of charcoal, burnt wood, birch bark rolls, etc. It represents rim spoil or possibly roof edge deposits related to an occupation of HP 4.

Stratum XI

Stratum XI lay in the north half of Square A, and consisted of a very loose, light gray (10 YR 4/2) silt with some organic content, including scattered bits of charcoal and burnt wood. It appears to be rim spoil associated with HP 4.

Stratum XII

Stratum XII also lay in the north half of Square A between ca. 60-70 cm below surface. It was a fairly loose, dark gray-black (10 YR 2/1) sandy silt with very high organic content (70%), including scattered charcoal bits and chunks, and fine particles. This deposit appears to represent floor edge deposits related to HP 4.

Stratum XIII

Stratum XIII is a large stratum extending throughout the excavation squares between ca. 60-100 cm below surface. It was a moderately loose, light yellowish gray (10 YR 5/3) sandy silt with moderate (35%) pea gravel content, and the occasional small pebble. Cultural materials include randomly scattered chunks and bits of charcoal and burnt wood, some FCR and bits of bark, a moderate amount of lithic waste flakes, several lithic tools including two Plateau horizon points from Square A, another from Square B, and the occasional piece of bone (salmon and mammal). This stratum is typical of rim spoil deposits, and likely relate to HP 4 to the north, and/or HP 3 to the south.

Stratum XIV

Stratum XIV was located in the southern edge of Square C, between ca. 55-70 cm below surface. It consisted of a very loose, light yellow-gray (10 YR 5/4) sandy silt with very high pea gravel content (70%), and the occasional small pebble. It represents sterile deposits removed during the refurbishing of HP 3 to the south.

Stratum XV

Stratum XV was also confined to the southern half of Square C, between ca. 70-80 cm below surface. It was a loose, medium gray-brown (10 YR 4/3) silt with no gravel. Cultural material included a few flakes and scattered bits of charcoal. It represents the "A" horizon of a buried paleosol. It has been removed (or perhaps is less distinct) in the northern half of the unit.

Stratum XVI

Stratum XVI extended throughout the southern three-quarters of Square B, and all of Square A, between ca. 75-85 cm below surface. It is relatively horizontally disposed, and contained very little cultural material. It represents a buried "B" horizon on the paleosol. It consists of a moderately compact, light gray (10 YR 6/2) aeolian silt with no gravel.

Stratum XVII

Stratum XVII was a fairly compact, light gray-brown (10 YR 4/2) silt with low (15%) small pebble content. It is culturally sterile and appears to represent the "C" horizon of the buried paleosol. It appears to consist of glacial till deposits.

Stratum XVIII

Confined primarily to the central aspect of Square B between 80-90 cm below surface, Stratum XVIII was similar to XVII but had a much higher (70%) small pebble and pea gravel content. It also represents the "C" horizon of the paleosol, and was culturally sterile.

Stratum XIX

Stratum XIX was contained within all of Square A, and the northern edge of Square B, between ca. 110-150 cm below surface. It was a thick stratum of fairy loose, light gray (10 YR 4/2) sandy silt with moderate (40%) pea gravel content and low (15%) small pebble content. It fills a large pit feature excavated into the paleosol, and may be the southwest edge of a housepit, which is no longer evident on the ground surface. A large quantity of cultural material was recovered, and the matrix resembles typical heavily disturbed rim spoil. A Plateau horizon point was associated at about 115 cm below surface.

Stratum XX

Sterile deposits, typical basement glacial till deposits consisting of light gray, very compact clayey silt with pea gravel and lots of pebbles.

Summary and Conclusions

Extra-Housepit Excavation 7 revealed that this surficially evident oval cultural depression was a cache pit feature, which probably functioned as a food storage pit. Its original dimensions are estimated to be about 180 cm north-south, and ca. 150 cm east-west, by 55 cm deep, suggesting that it had an initial capacity of approximately 0.55m^3. It has a somewhat V-shaped cross section, and the bottom contained birch bark rolls, which may have lined the bottom. Some mammal bone was also recovered from the very lower reaches of the pit.

The pit was excavated into rim spoil deposits (Strata VII and VIII) relating to HP's 3 and 4 to the south and north respectively. The presence of

plateau horizon points from within and outside the pit indicate that it was constructed and used during this time, which is commensurate with the main occupations represented in HP 4.

After its use as a storage pit, the feature seems to have been used as a refuse disposal facility for debris removed from inside adjacent housepits. These dumping episodes are most probably related to the buildup of the HP 4 rim deposits, via refuse disposal. Strata II-VI appear to have been accumulated in this fashion.

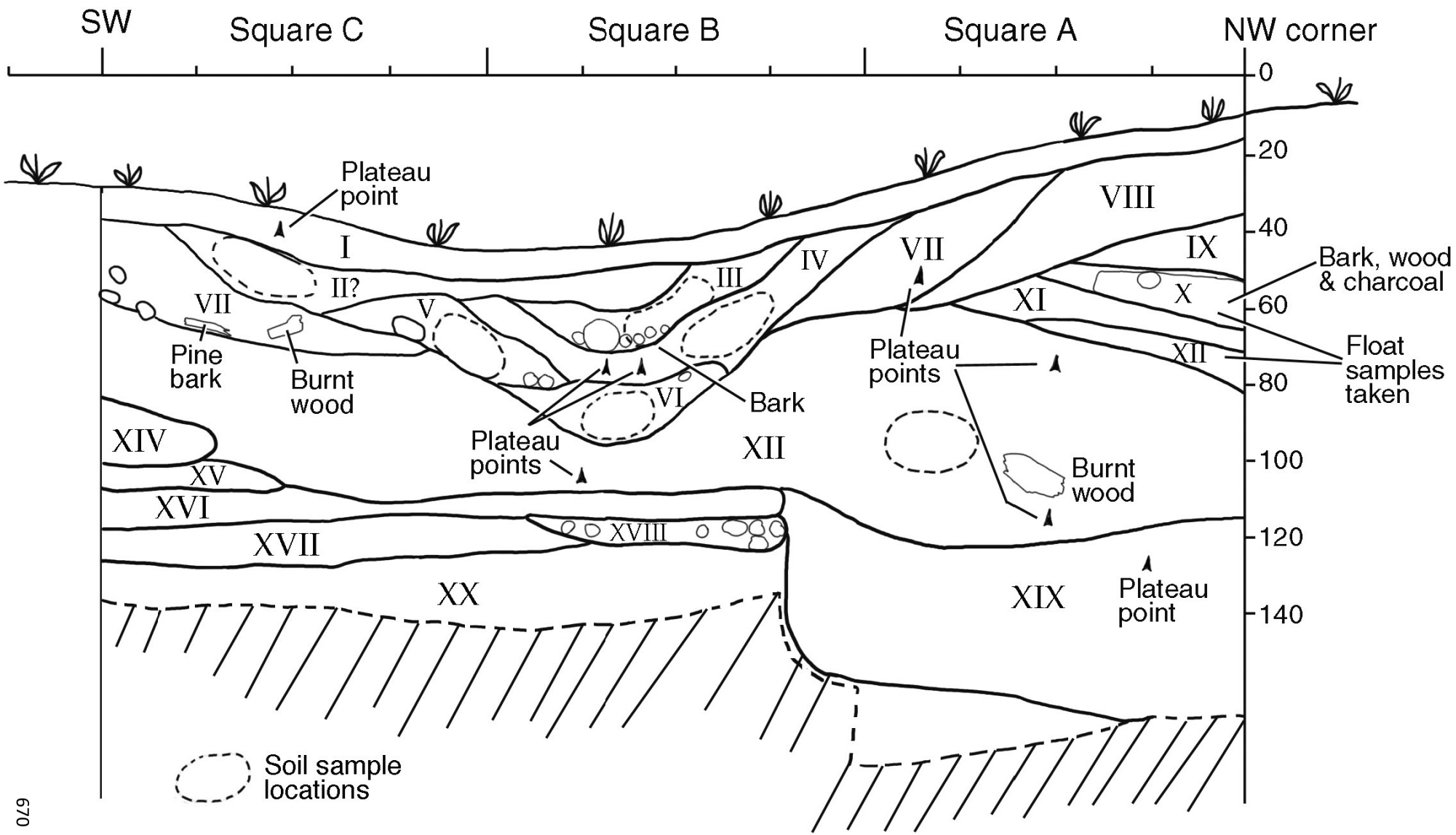
The northern edge of Square A intersected the southeast edge of HP 4, and also revealed what may be the southeast edge of a buried housepit between ca. 110-150 cm below surface, which also dates to the Plateau horizon.

The paleosol which intersected between ca. 100-130 cm below surface in Squares B and C may predate the remaining Plateau horizon deposits contained above, however, no diagnostics were recovered from the upper aspect of the paleosol.

Figures

Figure 1: West wall profile of EHPE 7.

Figure 1. West wall profile of EHPE 7.



Extra Housepit Excavation 8 Excavation Results

Mike Rousseau and Kelly Bush

Location and Description

Extra Housepit Excavation (EHPE) 8 was dug into a somewhat rectangular ovoid depression on the edge of a prominent terrace bordering the western edge of the site. It is one of several pits of similar size located from 12-14 m south of the large HP 102 (Vol. III, Preface, **Fig. 1**). This feature measures 3.5 m north-south by 3.25 m east-west and approximately 0.75 m deep. Some pot hunting activity is seen in the center/bottom of the pit measuring 1 m north-south by 0.75 m east-west.

Excavation units A-C were placed through the depression in the eastern half of the feature, forming a north-south trench 3.0 m north-south by 0.75 m east-west. Square A intersects the northwest edge of the pit feature. These units allowed us to view the structure of the pit, rim around the pit, and pot hunting disturbance. Our goal was to view cache-type deposits, and to interpret the formation history of the depression. The unit was excavated in 10 cm arbitrary levels. Although the cachepit feature appeared large, it was not very deep. Five separate strata were identified (**Fig. 1**).

Stratigraphy

Stratum I

Loose, medium gray brown (10 YR 3/2) sandy silt with a large percentage of organics, including roots and grasses. The fill in the potters hole which Stratum I represents is only 8-10 cm deep at the deepest point and only extends one-third of the way across Square B. There is no fire

cracked rock or cultural material in this stratum and it probably represents gravity infilling.

Stratum II

Very loose, medium gray brown (10 YR 4/3) sandy silt with a high percentage of organics (roots and grasses). This layer represents the littermat and appears aeolian in origin. There was some pea gravel in this stratum and occasional pebbles. In Square B, the percentage of pea gravel is less and fewer cobbles or pebbles appear. This may be due to deposition of larger clasts on the sides of the depression due to use or simply due to gravity effects of infilling.

Stratum III

Fairly compact, medium gray brown (10 YR 3/2) sandy silt with some pea gravel, cobbles, and pebbles. The stratum varies in thickness from a few centimeter to 20 cm in Square A, but is 10-15 cm through the other two squares (B and C). It begins around 10 cm below surface at the northern end of the square. Three flakes were found at the southern end of Square A, which is the closest to the center of the pit, near the lower interface with Stratum V. Two pieces of marine shell were found in Square B where Stratum III meets Stratum V; one of the shell pieces was drilled/perforated. Large cobbles and pebbles were found in Square C in this stratum.

Stratum IV

Fairly compact, medium gray brown (10 YR 4/2) sandy silt with high numbers of pebbles and cobbles. This stratum probably represents slumping of sediments originating from within the pit.

Stratum V

Compact, yellowish brown (10 YR 4/3) sandy silt with occasional pebbles and cobbles. This appears to represent the lowest level of cultural material in the cachepit. Flakes and mammal bone were found in this stratum. An obsidian core, possibly a microblade core, was found in Square C near the Stratum IV level. Below this stratum is sterile till deposit.

Summary and Conclusions

There is nothing in the stratigraphy to indicate this feature was used more than once. There was little actual refuse or cultural material recovered. Stratum IV probably represents an initial deposit of material removed from lower in the pit. The feature is shallow compared to other cachepits. The reason for this appears to have been that the glacial till deposit that was encountered at about 70 cm below surface is extremely compact and difficult to penetrate.

Most of the artifacts were found from 15-25 cm below surface. There were only a few isolated pieces of charcoal, bone, and lithics. The perforated marine shell found in Square C and the obsidian core found below it were the most unusual finds in the excavation. There was no fire-cracked rock.

In conclusion, this pit appears to only have been used once as a shallow, saucer-shaped cachepit to store food and/or personal items, and then natural aeolian forces and gravity began filling it in. Its original volume is estimated to have been about 1.7 m^3. Some of the other cachepits in the vicinity may have been used more intensively.

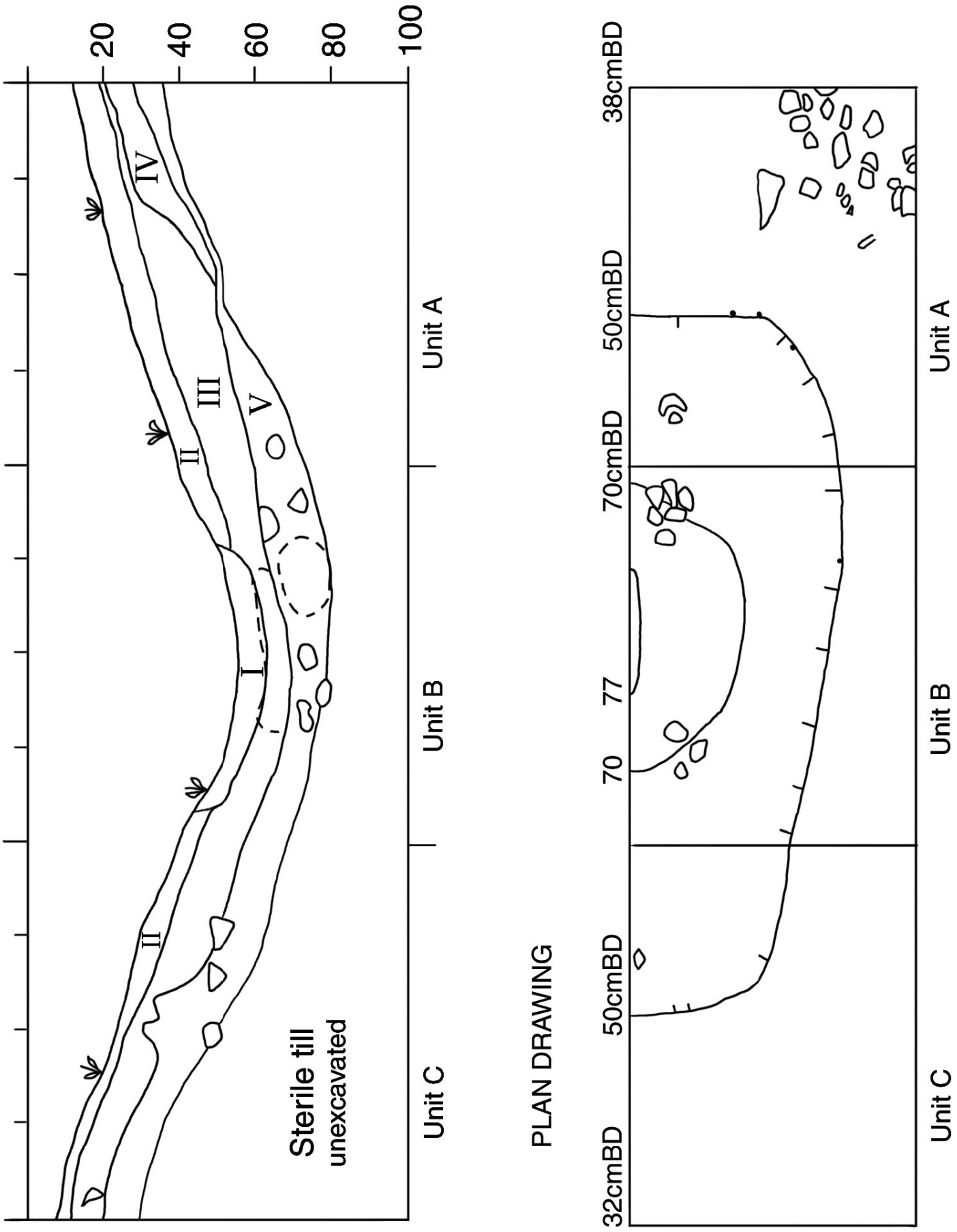
Figures

Figure 1: West wall profile of EHPE 8, showing Squares A, B, and C.

Figure 1. West wall profile of EHPE 8, Squares A, B, and C Legend

Stratum	Munsell		Description
I	10 YR 3/2	Medium gray brown	Very loose, sandy silt with large % of organics. Recent potters hole.
II	10 YR 4/3	Medium brown	Very loose, sandy silt with high organic content. Surface litter, aeolian in origin.
III	10 YR 3/2	Medium gray brown	Fairly compact, sandy silt with some pea gravel and some cobble and pebble sized rocks. Reused area of cachepit and natural infill after disuse.
IV	10 YR 4/2	Medium gray brown	Fairly compact, sandy silt with very high % of pebbles, cobble, and gravel. Deposit by pit users or builders from lower down in pit.
V	10 YR 4/3	Yellowish brown	Compact, sandy silt with occasional cobble and pebble.

Figure 1. West wall profile of EHPE 8, showing Squares A, B, and C.



Extra Housepit Excavation 9 Excavation Results

Mike Rousseau

Location and Description

Extra Housepit Excavation 9 explored a small, roughly circular cultural depression measuring 4.4 m north-south by 4.5 m east-west by 0.4 m deep at the surface. It is situated on the southern edge of the site about 400 m south of the main village on the south side of Keatley Creek (Vol. III, Preface, **Fig. 1**). It is located about 5 m southeast of the southeast rim of Housepit 9, which was tested in 1987, and determined to contain a Kamloops horizon component. Two conjoining excavation squares were dug into the southwest section of the feature. Square A lay in the north; Square B to the south. Both measured 1 m north-south by 0.75 m east-west. The approximate center of the pit feature was intersected by the eastern walls of these two squares. The purpose of the excavation was to determine the nature and function of the small circular feature. Excavation was undertaken using trowels and 1/4" mesh screening. The first 40 cm were excavated in 10 cm arbitrary levels below surface (BS). The remaining deposits between 40-85 cm below surface were removed as a single level (level 5).

The excavations revealed the presence of four main stratigraphic deposits, and two of the strata were subdivided into "a" and "b" because of color changes.

Stratum I

Stratum Ia

Stratum Ia (**Fig. 1**) lay between 0-5 cm below surface throughout the excavation squares. It was a moderately compact, light gray brown (10 YR 5/2) sandy silt with low (5%) small pebble content.

Stratum Ib

Stratum Ib is identical to Stratum Ia in composition, however, it is darker in color (dark gray black [10 YR 3/11]) and has a moderate pebble content (25%) at the juncture of Squares A and B. Its dark color is attributed to the development of an "A" soil horizon in the center of the depression rather than owing to cultural activities. Stratum Ib lay between ca. 5 cm and 10 cm below surface throughout most of the squares.

Stratum Ia and Ib yielded several pieces of fire-cracked rock, scattered pieces of charcoal, and a few flakes and pieces of mammal bone. The majority of the cultural material was recovered from Stratum Ib. Stratum Ia primarily represents post-occupational recent aeolian infilling. Stratum Ib is interpreted to represent aeolian infilling and casual disposal of cultural materials into the depression during the latter part of the Kamloops horizon occupation of HP 9 to the immediate northwest. There is no reason to suspect that this pit functioned as a storage pit or hearth when Stratum Ib was being deposited. Casual discard of refuse into the abandoned pit seems more probable.

Stratum II

Stratum IIa

Stratum IIa was represented between ca. 10-20 cm in the northern one-fifth of Square A and the southern two-thirds of Square B. Stratum IIa and IIb are identical in composition, differing only in color. The two meld seamlessly into each other and there is no distinct break. Stratum IIa is a moderately compact, light gray brown (10 YR 5/3) sandy silt with moderate (30%) pea gravel content and a moderate amount (20%) of small pebbles.

Stratum IIb

Stratum IIb was encountered between ca. 10 cm to 40 cm below surface in the southern four-fifths of Square A and the northern one-third of Square B. It is identical in composition to Stratum IIa, but it is medium gray brown (10 YR 4/1) in color. Both Strata IIa and IIb are interpreted to represent the same deposition episode. Cultural materials included basalt flakes and tools, burnt and unburnt mammal bone, a few fire cracked rocks, and scattered bits of charcoal. Stratum IIb yielded the majority of the materials, as it lay in the center of the depression. During excavation, mottled lenses of reddish-brown ashy silt and charcoal were noted between 30-40 cm below surface in the bottom of Stratum IIb. These lenses were not represented on either wall profile. The bottom of Stratum IIb conformed to a shallow saucer-shaped cross-section that roughly paralleled the present ground surface. The lower half of Stratum II deposits appear to represent post-use cultural infilling of the pit feature with ash dumps and other refuse from nearby HP 9. Cultural material was most dense in level 4 (30-40 cm below surface) which corresponds with the bottom of Stratum IIb. The upper half of Stratum IIb,

and Stratum IIa, appear to represent casual discard of cultural items into the pit while it was being infilled primarily by aeolian and slopewash processes. These latter processes also contributed, to some degree, to the deposition of the lower half of Stratum IIb.

Stratum III

Stratum III was present in the south half of Square A and the north edge of Square B between ca. 40 cm and 85 cm below surface. It was a very compact, medium gray brown (10 YR 4/1) sandy silt with high proportion of pea gravel (40%) and pebbles and cobbles (40%), some of them quite large. Two flakes were recovered from this portion of the stratum. One from between 40-50 cm below surface, and the other between 50-60 cm below surface. Small flecks of charcoal were noted throughout the matrix. This stratum conforms to a somewhat leaning V-shaped outline, with the southern wall being the steepest and the northern wall more gently sloping. It represents the initial pit excavation into sterile glacial deposits (Stratum IV). It is important to note, however, that no other cultural materials (charcoal excepted) were recovered beneath 60 cm below surface. The bottom of this pit may have been lined. Removal of the liner may have involved removal of the debris associated with the goods being stored. The paucity of cultural debris from this stratum suggests that it was rapidly and intentionally infilled by a rocky matrix from a nearby source, such as the very rocky rim deposits at nearby Housepit 9. Why it was rapidly infilled is not readily apparent, but it may have been filled to prevent children or dogs falling in. The somewhat "triangular" outline of the plan view of the initial pit is also unusual. The precise form can only be assessed by removing the other half of the center of the feature.

Stratum IV

Stratum IV represents sterile glacial till deposits into which the pit was dug. It is a very compact, yellow gray (2.5 Y 6/4) sandy clayey silt with moderate proportions (30%) pea gravel and high (40%) pebble and cobble proportions.

Summary and Conclusions

The results of Extra Housepit Excavation 9 revealed that the small depression appears to have initially functioned as a somewhat V-shaped cross-sectioned cachepit having a roughly triangular plan view. The lack of cultural materials other than small flecks of charcoal from Stratum III below 60 cm below surface may reflect the fact that the pit had a liner (i.e., stitched birch bark, basket, or hide) which was removed upon its use-abandonment. Excavation revealed that its initial storage capacity was about 0.35 m^3.

Subsequent to its initial use as a cache/storage pit it was rapidly infilled with very gravelly/cobbly deposits which may have been derived from the rim of nearby HP 9, characterized by a very pebbly/cobbly matrix. This event is interpreted to have been intentional, perhaps as a safety measure during latter occupation of HP 9 (Kamloops horizon).

Casual intentional infilling and natural depositional agencies (e.g., aeolian, slopewash) are considered to be responsible for the deposition of Stratum II. The lower half of Stratum IIb contained lenses of ashy silt which may have been intentionally dumped during the late occupation of HP 9.

Casual discard and natural depositional agencies are also considered to have contributed to the formation of Strata Ia and Ib during the end of HP 9's occupation (probably late Kamloops horizon).

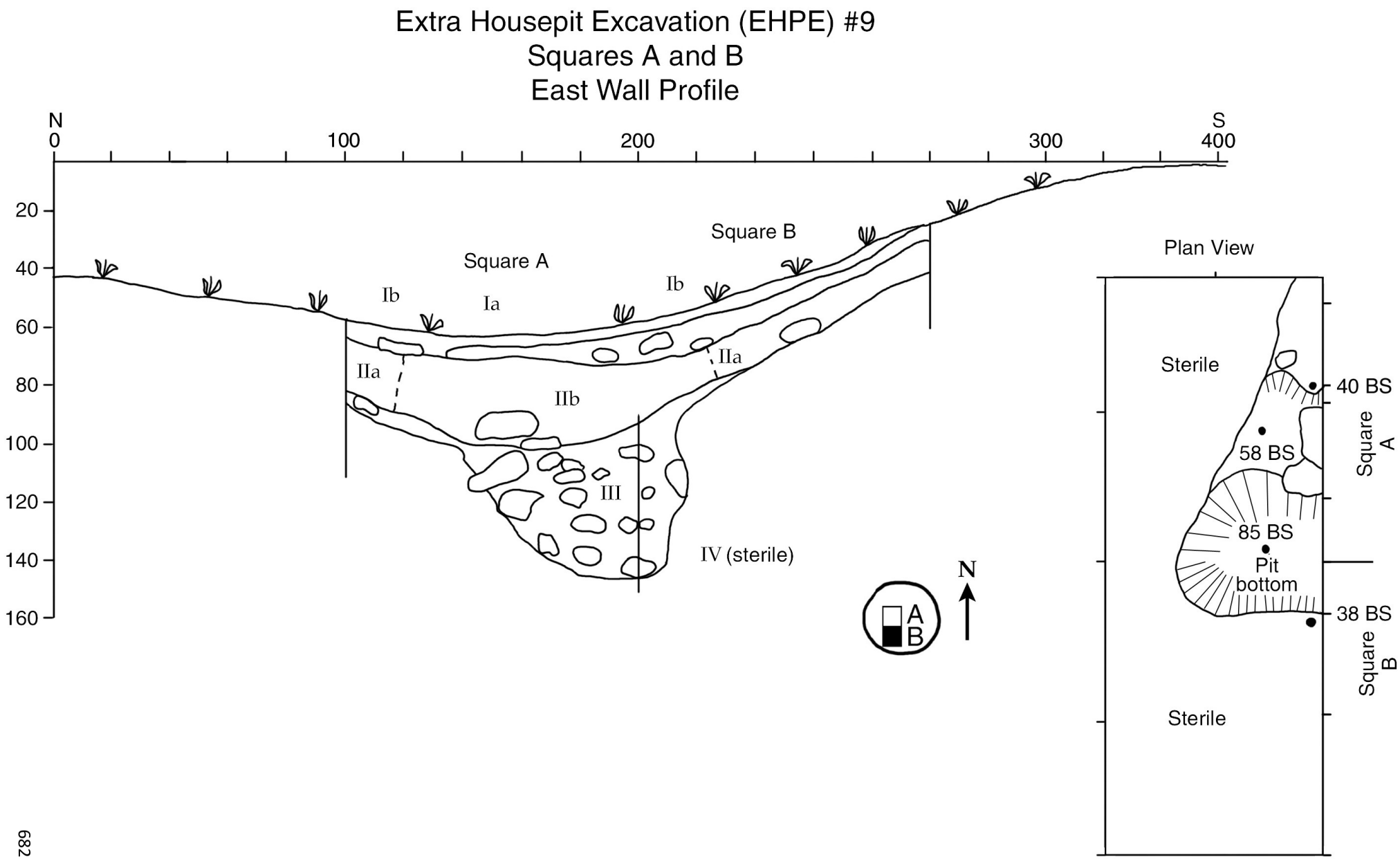
Figures

Figure 1: East wall profile of EHPE 9, showing Squares A and B.

Figure 1. East wall profile of EHPE 9, Squares A and B

Stratum	Munsell (dry)		Description
Ia	10 YR 5/2	Light gray brown	Moderately compact, sandy silt with 5% pea gravel and 5% small pebbles.
Ib	10 YR 3/1	Dark gray black	Moderately compact, sandy silt with 25% small pebbles and 5% pea gravel.
IIa	10 YR 5/3	Light gray brown	Moderately compact, sandy silt with 30% pea gravel and 20% small pebbles.
IIb	10 YR 4/1	Medium gray brown	Moderately compact, sandy silt with 30% pea gravel and 20% small pebbles.
III	10 YR 4/1	Medium gray brown	Very compact, sandy silt with 40% pea gravel and 40% small pebbles and cobbles.
IV	2.5 Y 6/4	Yellow-gray	Very compact, sandy-clayey silt with 40% pebbles and cobbles, and 30% pea gravel.

Figure 1. East wall profile of EHPE 9, showing Squares A and B.



Extra Housepit Excavation 10 Excavation Results

Mike Rousseau

Location and Description

Extra Housepit Excavation 10 was dug into a large, deep, well-defined circular cultural depression feature located in the eastern part of the site on the first terrace overlooking the main village area (Vol. III, Preface, **Fig. 1**). It is one of several other similar circular cultural depressions in this general area that range between about 2 m and 4.5 m in diameter. Surficially, the depression is somewhat oval in plan and measures approximately 4.3 m north-south by 4.2 m east-west by 0.75 m deep.

Three conjoining excavation squares measuring 1 m north-south by 0.75 m east-west were dug into the eastern half of the feature forming a trench measuring 3.0 m north-south by 0.75 m east-west. They were designated as Squares A, B, and C from north to south. The western walls of the units intersected the approximate center of the surficial depression.

Excavations were undertaken to determine the function and relative age of this depression, and the nature of its contents and structure. It was selected because of its large size and unusual surficial depth, and because it was not directly associated with other features that could have disturbed its original integrity or composition. The squares were dug in 10 cm-thick arbitrary levels using trowels, square-nosed shovels, and 1/4" mesh screening. Four basic stratigraphic units were identified (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I consists of the surface littermat and a light semi-compact, grayish-brown, sandy silt (10 YR 4/2). Its maximum thickness is only about 4 cm. This stratum appears to have been deposited primarily by aeolian processes, but a low (approximately 10%) pea gravel content and a few angular pebbles and cobbles were also encountered near the center of the pit. No cultural materials were recovered from this stratum, and it represents post-depositional natural infilling by aeolian and gravitational processes.

Stratum II

Stratum II was a lens of dark gray brown (10 YR 3/2) sandy silt with high ash content, a low quantity (10%) of pea gravel, and the occasional pebble. It was encountered in the southwestern corner of Square B and the northwestern corner of Square C between about 5 cm and 25 cm below surface. This lens tapered out at about 30 cm east of the west walls of these squares. It may have been functionally associated with Stratum III, which appears to be a hearth feature that lies directly beneath it (see below). Alternately it may represent refuse that was subsequently dumped in this pit from a house located to the immediate northeast.

Stratum III

Stratum III was a thick lens of semi-compact, dark gray brown (10 YR 3/1) sandy silt with some (5%) ash, moderate (30%) pea gravel, moderately high (40%) pebble content, and several large cobbles. A dense concentration of charcoal and burnt bark were noted in Square B between about 12 cm

and 15 cm below surface, and several small superposed lenses of dark stained matrix lay immediately above and below.

The majority of this stratum (i.e., its center) was represented in the western half of Square B between about 10 cm to 35 cm below surface. This lens thinned out in the southwestern corner of Square A and in the northwestern corner of Square C. It thinned out rapidly and terminated about 35 cm east of the western wall of Square B. It seems that this stratum, and possibly Stratum II (see above) are activity-related.

The abundance of charcoal associated with Stratum III, and the paucity of other cultural materials, suggests that it represents a probable hearth feature built in the center of the pit feature after it had been initially used as a storage pit and had been partially infilled. It is unlikely that it represents a refuse dumping episode, as the bark and wood appear to have burnt *in situ*. Also, natural aeolian and gravitational infilling processes must have contributed to these two strata. The large cobbles probably rolled into the feature depression from upslope, or may have been intentionally included in the hearth construction.

Stratum IV

Stratum IV is a semi-compact, dark brown (10 YR 3/3) sandy silt containing a moderately high amount (25%) of pea gravel, angular pebbles, and a few large cobbles. In Square A, this stratum was lighter and more gray (10 YR 4/2) than it was in the other two squares. Two small boulders were encountered in Squares B and C.

In Square B, some salmon bone and wood fragments were found between 45 cm and 60 cm below surface. At approximately 65 cm to 90 cm below surface, an abundance of fish bone was encountered in association

with charcoal, pieces of decayed wood, and several large mammal bones (possibly elk). The latter included three sections of long bone, one rib, one complete distal end of an ulna, a distal end of a tibia, two vertebrae, and one metacarpal. most of the bone was recovered at the interface between Stratum IV and Stratum V at about 90 cm below surface, indicating the original pit outline. One piece of wood was found protruding from the east wall (**Fig. 1**). In level 10, between 93 cm and 95 cm below surface in the upper northeast corner of Square B, some charcoal and the epiphysis of a mammal bone were exposed in the wall.

Contours of the feature as indicated by the interface of Strata IV and V indicate that it was initially a deep storage pit with a basin-shaped bottom and flaring upper edge. It was revealed that it stored dried fish (salmon), and possibly dried meat. The latter is suggested by the presence of several large mammal (elk) bones.

Stratum V

Stratum V is a fairly compact, grayish brown (10 YR 5/2) sandy, clayey silt containing a high proportion (about 50%) of pea gravels and angular or rounded pebbles and cobbles. It represents culturally sterile glacial deposits.

Summary and Conclusions

Excavation revealed that the small circular cultural depression intersected by the three squares comprising EHPE 10 was initially a deep, steep-sided, storage pit with a basin-shaped bottom and a flaring top (**Fig. 1**). The storage pit originally measured about 2 m in diameter by about 80 cm deep, and had an approximate capacity of about 2 cubic meters. The abundance of fish (salmon) remains and mammal bone recovered from

Stratum IV, which is associated with the initial use of the pit as a storage facility, indicate that dried fish and perhaps dried meat were the primary food commodities being stored. Other cachepits in the immediate vicinity probably functioned in similar capacities, and presumably belonged to the housepits lying several meters to the northeast.

Subsequent to its use as a storage facility and after it had been partially infilled by slumping, aeolian deposition, and gravitational infilling, a hearth was constructed within the depression to cook food, or perhaps burn refuse. This use-episode is represented by Strata II and III.

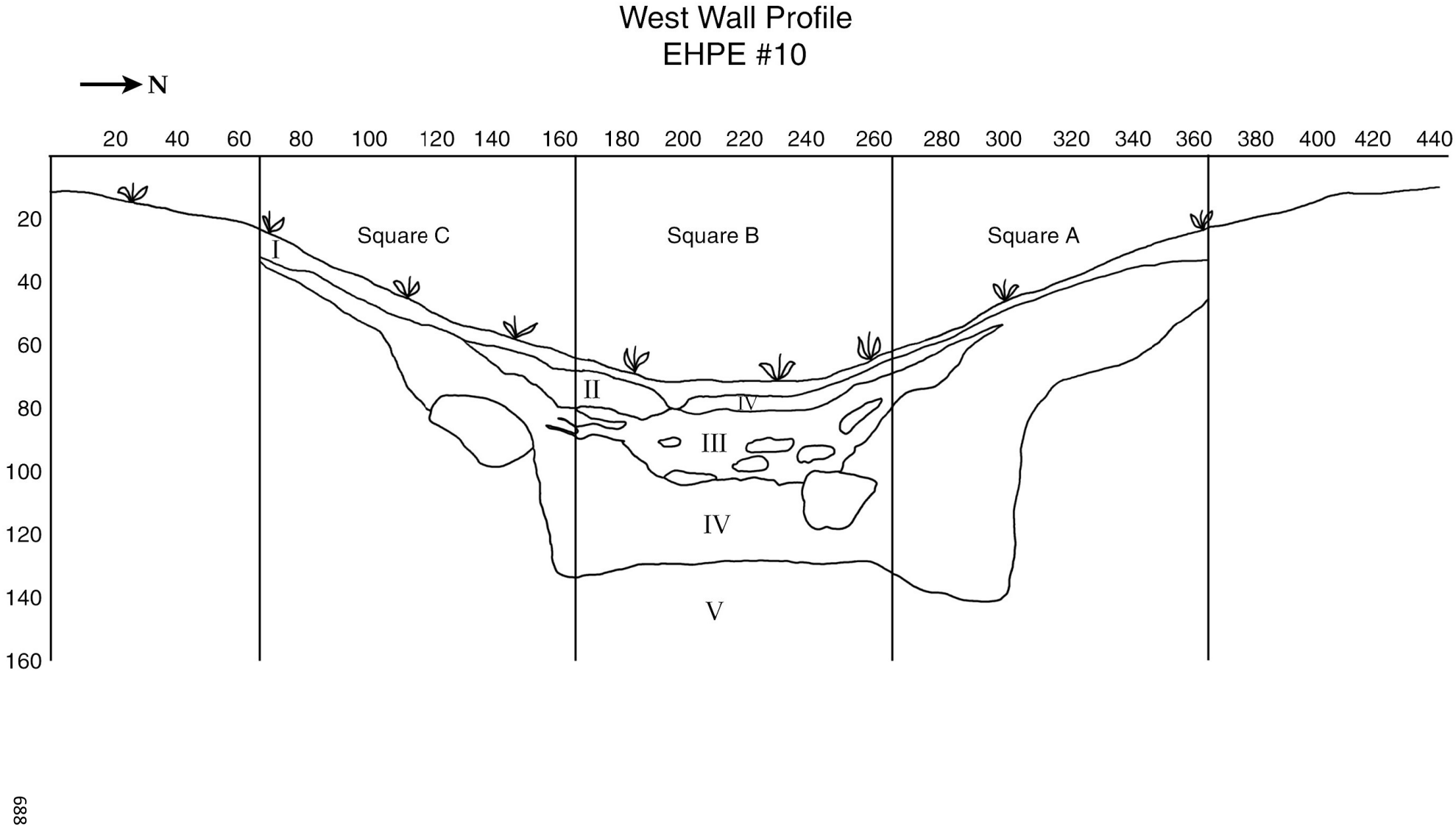
Figures

Figure 1: East and west wall profiles of EHPE 10, showing Squares A, B, and C

Figure 1. East and West wall profiles of EHPE 10, Squares A, B, and C

Stratum	Munsell		Description
I	10 YR 3/3	Dark brown	Fairly loose, semi-compact, sandy silt with moderate content of organics, pea gravel, and angular pebbles.
II	10 YR 5/2	Grayish-brown	Fairly hard, compact, sandy silt with high content of pea gravel and angular pebbles. Sterile.

Figure 1. East and west wall profiles of EHPE 10, showing Squares A, B, and C



Extra Housepit Excavation 11 Excavation Results

Mike Rousseau

Location and Description

Extra Housepit Excavation 11 intersected the western half of a small circular cultural depression measuring ca. 3.5 m diameter by 0.4 m deep. It was the northernmost of three similar features located immediately southwest of Housepit 26 in the south-central part of the main site area (Vol. III, Preface, **Fig. 1**). The southern rim of the depression was not well defined and was lower than that of the northern edge of the pit feature. Nevertheless, the surficial appearance of the depression was typical of that observed for several other cachepits tested during the "cachepit" program.

Three conjoining excavation squares measuring 3 m north-south by 0.75 m east-west were excavated in the western half of the feature forming a trench measuring 3.0 m north-south by 0.75 m east-west. They were designated as Squares A, B, and C from north to south. The eastern walls intersected the approximate center of the surficial depression.

Excavations were undertaken to determine the function and age of this depression and the nature of its fill. It was selected because it was not in direct association with a housepit rim, and because it had the surficial characteristics of a typical "cachepit" feature.

The squares were dug in 10 cm thick arbitrary levels using trowels and 1/4" mesh screening. Proveniences were referenced below ground surface. Ten distinctive stratigraphic layers were identified in the excavations (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I extended from about 0-10 cm below surface in the eastern edges of Squares A and B, and between 0-5 cm elsewhere. It is a moderately loose, light gray brown (10 YR 4/2) silt with some sand (5%) and small pebbles (5%). It represents recent slopewash and aeolian deposits. Slopewashing into the depression feature was most prominent from the northwest corner of the depression, with less along the western edge of the squares. This pattern was noted also in the underlying strata.

Stratum II

Stratum II lay between about 7-20 cm below surface, and was thicker in the eastern edges of the squares. It was somewhat lenticular in cross-section and was divided into two sub-strata.

Stratum IIa

Stratum IIa was a compact, light gray (10 YR 5/2) sandy silt with 10% pea gravel and 5% small pebbles. It occupied only the northern two-thirds of Square A.

Stratum IIb

Stratum IIb is virtually identical in content to Stratum IIa, but is dark gray (10 YR 3/1) in color. Cultural materials included a biface fragment from Square A at 18 cm below surface, and a small side-notched Kamloops horizon point from the central portion of Square C at 12 cm below surface near the bottom of Stratum IIb. Stratum IIb contained Stratum X deposits,

which are interpreted to be the remains of a small lenticular hearth feature occupying the western and central aspects of the excavation squares between ca. 6-18 cm below surface (see Stratum X below). Other cultural materials from Stratum IIb included a moderate density of lithic waste flakes, scattered charcoal flecks and chunks, some fire cracked rock, and some fish and mammal bone. No cultural materials were observed with the ashy hearth represented by Stratum X. It was screened separately and yielded only charcoal. It is for this reason that it is interpreted to be a hearth rather than an ash/refuse dumping episode.

Stratum IIa and IIb appear to have been deposited primarily by natural agency during the Kamloops horizon. Casual discard of items into the depression probably also occurred during this deposition. However, the hearth feature represented as Stratum X at the bottom or Stratum IIb suggests that a fire had been lit in the pit prior to the natural infilling and casual discard represented in Stratum IIb.

Stratum III

Stratum III was represented in Square A between about 20-35 cm below surface. It was a moderately compact, light gray brown (10 YR 4/2) sandy silt with moderate (30%) pea gravel and low (20%) small pebble frequency. It is interpreted to represent intensive slopewash and/or slumping from the northeast, where the slope rises steeply.

Stratum IV

Stratum IV occupied the southern half of Square A, all of Square B, and the northern half of Square C. It lay about 20-30 cm below surface. It was a semi-compact, dark gray black (10 YR 2/1) sandy silt with high (40%) pea

gravel content and 30% small pebbles. Cultural materials included: a Kamloops point from the southwest corner of Square A at 37 cm below surface; a red "pipestone" (steatite) pendant and a large core fragment from Square B, and; a ground bone tool from the southern edge of this stratum in Square C at 25 cm below surface. This stratum is interpreted as representing the use of this depression as a small single-person dwelling, or possibly a small storage structure where non-perishable goods, combustibles, and possibly food were kept. The nature of the artifacts and cultural remains suggests it functioned as a small single-person dwelling; the stratigraphy indicates that it would have been only about two meters in diameter and it lacked any indication of a hearth. Other cultural materials include a few pieces of fire-cracked rock, scattered charcoal, and fish and mammal bone. A flotation sample was taken from the southern edge of this stratum.

Stratum V

Stratum V was located in the northern half of Square A between about 25 cm to 35 cm below surface. It was a moderately compact, light gray brown (10 YR 5/3) sandy silt with moderate (25%) amount of small pebbles. Very little cultural material was associated with this matrix, and it is interpreted to represent slopewash (primarily) from the steep slope to the immediate east.

Stratum VI

Stratum VI occupied the northern half of Square A between ca. 50-65 cm below surface. It was a moderately compact, light gray (10 YR 6/2) sandy silt with high (45%) pea gravel content, moderate (20%) small pebble content, and some clay (10%). It represents primarily slopewash from the

steep slope to the east. It is contiguous with Stratum VII in the southern half of the unit.

Stratum VII

Stratum VII extended through the southern half of Square A and through Squares B and C between 30-40 cm below surface in Squares A and B, and 10-40 cm below surface in Square C. It was a moderately compact, medium gray brown (10 YR 5/2) silty sand with high (45%) pea gravel content and some scattered charcoal bits and chunks. It contained a moderate amount of flakes, moderate amounts of mammal bone, and salmon bones. The significance of this stratum is not altogether clear, however, it may be primarily slopewash from the east mixed with cultural materials from adjacent activity areas. It does not appear to represent any intentional use of the depression.

Stratum VIII

Stratum VIII was contiguous throughout the southern half of Square A, throughout Squares B and C, and continued further south beyond the excavation block. It was a moderately compact, dark gray (10 YR 3/1) sandy silt with moderate pea gravel (30%) content and a moderate (25%) amount of small pebbles. This stratum had a high organic content, particularly with respect to charcoal. A moderate amount of lithics, including a biface fragment and a moderate amount of mammal and fish bone, were recovered. This stratum represents the initial construction and use of the pit feature, and again appears to represent the floor zone of a small single-person dwelling, or perhaps a structure used to store mostly non-perishable and perishable goods and combustibles.

Stratum IX

Stratum IX was a light yellow gray (10 YR 6/2) compact, clayey silt with high pea gravel (45%) and high (40%) small pebble and cobble content. It represents sterile glacial till deposits.

Stratum X

Stratum X was a lens of fairly loose, orange brown (10 YR 5/6) sandy ashy silt with low (10%) pea gravel content and moderate (20%) small pebble content. It represents a hearth feature associated with the bottom of Stratum IIb. No cultural material (other than charcoal) was associated with this hearth.

Summary and Conclusions

Excavations revealed that Extra Housepit Excavation 11 had intersected the western half of a small circular feature that appears to have functioned on at least two occasions as either a single-person dwelling and/or as a small storage structure measuring about 2.5 m in diameter and covering about 6.25 square meters of floor. The latter possibility seems most likely since both use-episodes lack any indication of hearths. The relative paucity of fire-broken rock and high incidence of other organic remains suggests that it was not a sweat lodge, and the horizontal occupation zones clearly indicate that it did not function as a storage pit.

Although no temporally diagnostic artifacts were recovered from the deposits associated with the initial use of the depression (Stratum VIII), it probably dates to the early or middle Kamloops phase. The second

occupation/use (Stratum IV) definitely dates to the Kamloops horizon, as indicated by two Kamloops side-notched points.

That such small storage structures existed at Keatley Creek seems probable. They would have been very useful for keeping wood and dogs dry, storing tools, and would also provide children with a play house. At least two more of these special-purpose features should be investigated to conclusively determine their function.

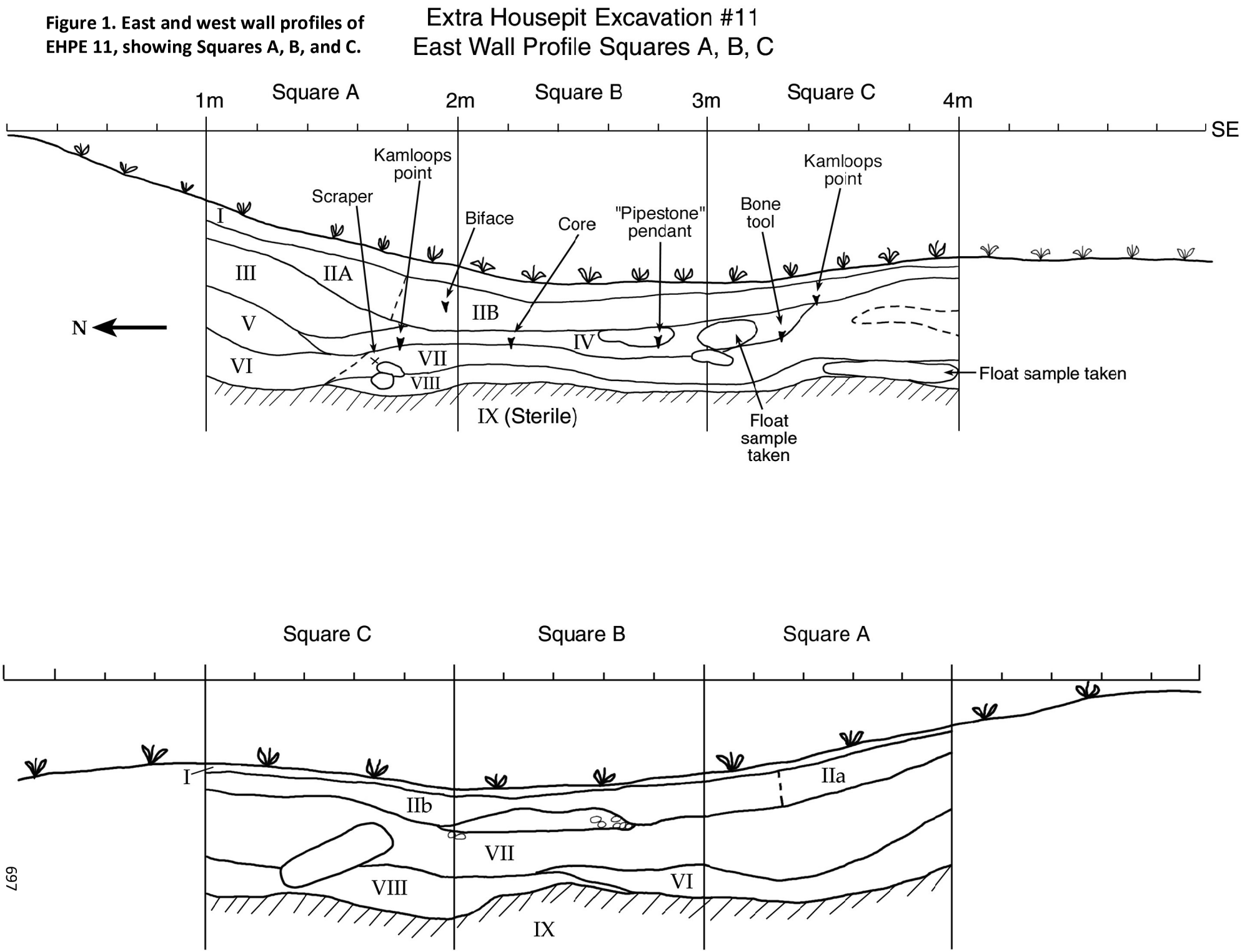
Figures

Figure 1: East and west wall profiles of EHPE 11, showing Squares A, B, and C.

Figure 1: East and West wall profiles of EHPE 11, Squares A, B, and C.

Stratum	Munsell		Description
I	10 YR 4/2	Light gray brown	Moderately loose, silt with some sand and 5% small pebbles.
IIa	10 YR 5/2	Light gray	Compact, sandy silt with 10% pea gravel and 5% small pebbles.
IIb	10 YR 3/1	Dark gray	Compact, sandy silt with 10% pea gravel and 5% small pebbles.
III	10 YR 4/2	Light gray brown	Moderately compact, sandy silt with 30% pea gravel and 20% small pebbles.
IV	10 YR 2/1	Dark gray black	Semi-compact, sandy silt with 50% small pebbles and 40% pea gravel.
V	10 YR 5/3	Light gray brown	Moderately compact, sandy silt with 25% pea gravel and 25% small pebbles.
VI	10 YR 6/2	Light gray	Moderately compact, sandy silt with 45% pea gravel, 20% small pebbles, and some clay.
VII	10 YR 5/2	Medium gray brown	Moderately compact, silty sand with 45% pea gravel, 30% small pebbles, and moderate charcoal content.
VIII	10 YR 3/1	Dark gray	Moderately compact, sandy silt with 30% pea gravel and 25% small pebbles.
IX	10 YR 6/2	Light yellow gray	Compact, clay-silt with 45% pea gravel and 40% small pebbles. Sterile.
X	10 YR 5/6	Light orange brown	Fairly loose, sandy ashy silt with 20% small pebbles and 10% pea gravel. Hearth feature.

Figure 1. East and west wall profiles of EHPE 11, showing Squares A, B, and C.



Extra Housepit Excavation 12 Excavation Results

Mike Rousseau

Location and Description

Extra Housepit Excavation 12 was dug into the eastern half of a small, roughly circular cultural depression measuring 3.0 m north-south by 2.8 m east-west by 30 cm deep. The depression was located about 5 m west of Housepit 105 on the uppermost terrace in the eastern portion of the site (Vol. III, Preface, **Fig. 1**). It resembled a typical "cachepit" on the surface, although the northern edge was not clearly defined.

Three conjoining excavation squares measuring 1.0 m north-south by 0.75 m east-west were dug into the east central portion of the depression, forming a trench 3.0 m by 0.75 m. The squares were designated as A, B, and C from north to south. The western walls intersected the approximate center of the surficial depression.

Excavations were conducted to determine the function of this feature and to secure a sample of its contents. It was reasoned that because the feature was not immediately associated with HP 105 it would not be mixed with house rim deposits, but on the other hand, it may have served as a refuse dump after its primary function had expired.

The squares were excavated in 10 cm thick arbitrary levels primarily using trowels, although square nosed shovels were occasionally used to remove the upper 5 cm of deposit of level 1 (0-10 cm below surface). Proveniences for artifacts were recorded with reference to below ground surface (BS). All excavated matrices were passed through 1/4" mesh screen. Eight distinct stratigraphic units were identified during excavations (**Fig. 1**).

Stratigraphy

Stratum I

Stratum I was subdivided into two sub-strata, both confined to the western edges of Squares B and C.

Stratum Ia

Stratum Ia was a loose, medium gray brown (10 YR 3/2) sandy silt with low (5%) pea gravel content and no pebbles. It represented recent deposition of silts by slopewash from the slope to the immediate south.

Stratum Ib

Stratum Ib was a moderately compact, light gray (10 YR 5/2) sandy silt with low (5%) pea gravel content and no pebbles. In composition it resembled Stratum Ia, and it is also interpreted to have been deposited by slopewashing from the south. A few flakes were recovered from these two sub-strata.

Stratum II

Stratum II comprised a large proportion of the stratigraphy in all three excavation squares, and yielded the majority of the cultural remains secured from them. It was a moderately compact, light gray brown (10 YR 4/2) sandy silt with a low proportion (5%) of small pebbles, and scattered flecks and small chunks of charcoal. The depth of this deposit varied from square to square, although it was thickest in the southern end of the excavation trench. This stratum contained Strata III to VI which are interpreted to indicate the use of a large hearth feature. Cultural materials from Square A included a dense concentration of fragmented mammal bone in the northwest corner of the square and a dense concentration of flakes in the

southwest corner. Several pieces of bone and exotic flakes were thermally altered. A uniface was recovered 7 cm below surface.

Square B also contained a high frequency of mammal bone and debitage, many of which were also thermally altered. They were distributed evenly throughout the excavation square. Several pieces of fire cracked rock were also encountered, as was charcoal.

Square C yielded a similar assemblage of materials from Stratum II, including the lateral portion of a large basally-notched early Plateau horizon (ca. 2,400-1,600 BP) projectile point.

Stratum II is interpreted as representing a mixture of naturally and culturally deposited sediments that accumulated during the use of the cultural depression during the early Plateau horizon.

Stratum III

Stratum III was represented in Squares A and B between 10-25 cm below surface. It occupied the southwest corner of Square A, and the northwest corner of Square B. It was lens shaped with a slight saucer-shaped cross-section. It was a moderately loose, mottled dark gray brown/light orange brown (7.5 YR 4/4) sandy ashy silt with low (5%) pea gravel content, fire cracked rock, scattered bits and chunks of charcoal, and the rare small pebble. The frequency of cultural material was rather low in this matrix, and only a few pieces of bone and flakes were found. Several pieces of burnt pine bark, a large birch bark roll, and a concentration of small fire cracked rocks were associated with this deposit.

Stratum III represents the final use of a large hearth feature. The diameter of the fire lens is ca. 1.25 m. It was thickest and most pronounced

in its northern aspect. That it was surrounded by Stratum II deposits indicates that it was early Plateau horizon in age.

Stratum IV

Stratum IV was confined primarily to the northwest half of Square C and the southwest half of Square B. It was directly associated with Stratum V, and both are interpreted to be related to the same use episode. This stratum was not represented in the east wall profile. It was very similar to Stratum III, being a moderately loose, mottled light orange gray (7.5 YR 4/4)/medium grey brown (10 YR 3/2) ashy sandy silt with low (5%) pea gravel content and the occasional small pebble. It conformed to a shallow saucer-shaped lens, and it lay directly on sterile deposits.

Cultural materials included a high density of scattered charcoal, several pieces of fire cracked rock large chunks of burnt pine bark, a few flakes, and a few pieces of burnt bone. Several fragments of a worked bone awl-like tool were also found.

Stratum IV (and associated Stratum V) represent a hearth feature measuring ca. 1 m in diameter which predates the hearth represented by Stratum III above, and to the north. The recovery of a nearly complete, large, early Plateau horizon projectile point from Stratum V indicates the construction and use of the hearth during the early part of the Plateau horizon.

Stratum V

Stratum V was associated with Stratum IV, and represents the same hearth use episode. It lay stratigraphically superior to Stratum IV and consisted of a moderately loose, dark gray brown (10 YR 3/1) sandy silt with low (5%) pea gravel content, high charcoal and burnt bark content, and the

occasional fire cracked rock. The association of a large early Plateau horizon point (ca. 2,400-1,600 BP) with this stratum indicate that the hearth use episode represented by Strata IV and V dates to sometime during this period. Stratum V was most prominently represented in the southeast corner of Square B and the northwest corner of Square C between ca. 20-30 cm below surface. Other items associated include a large endscraper (23 cm below surface), and a retouched flake (30 cm below surface).

Stratum VI

Stratum VI was a small lens of moderately loose, medium gray brown (10 YR 3/2) sandy silt with small micro-lenses of light orange gray (10 YR 3/2) ashy silt. It was intersected by the southwest corner of Square C between ca. 10-20 cm below surface. Because only a small portion of it was intersected, its function/genesis is not clear. It may simply represent a small hearth "annex" related to the hearth-use indicated by Strata IV and V.

Stratum VII

Stratum VII was represented throughout Square A and the northwest corner of Square B between 10-25 cm below surface. It was a moderately compact, light gray brown (10 YR 5/3) sandy silt with low (5%) pea gravel content and the occasional pebble. Cultural materials included mostly lithic waste flakes and a few small pieces of bone. Several large cobbles and a boulder were present. Most of the cultural materials were recovered from the upper 10 cm. of this stratum.

Stratum VIII

Stratum VIII represents sterile till deposits, which were encountered at about 20-30 cm below surface throughout the units. It was a very compact,

light gray (10 YR 6/3) sandy clayey silt with low (10%) pea gravel content and a moderate (30%) amount of small pebbles and large cobbles.

Stratum VIIIa

Stratum VIIIa represents a burnt lens of the sterile deposits. It is light grayish orange (7.5 YR 4/6) in color and was encountered beneath Stratum III in the west wall profile at the juncture of Squares A and B.

Summary and Conclusions

Extra Housepit Excavation 12 intersected a small, roughly circular cultural depression measuring about 3 m in diameter by about 40 cm deep. The excavations revealed the presence of two individual episodes of hearth construction and use. The initial use is represented by Strata IV and V, and the last by Stratum III. The presence of two large basally-notched projectile points indicate that both use episodes date to sometime during the early part of the Plateau horizon (ca. 2,400-1,200 BP).

The high frequency of burnt and unburnt mammal bone, together with three projectile points associated with the peripheries of the hearths, suggests that meat cooking may have been a major activity associated with the hearths. The presence of bark with these hearths suggests it may have been used as fuel. The high frequency of lithic waste flakes within and beside the hearth lenses suggest that the depression served as a refuse area for lithic waste. Many exotic materials indicated having been thermally altered. The high proportions of chalcedonies represented in the debitage is compatible with that represented in other Plateau horizon components throughout the Canadian Plateau.

There is some possibility that the depression observed on the surface may be the central portion of a small dwelling whose actual floor areas

extend beyond the edges of the surficially observed depression. Stratum II and Stratum VII may represent the floor deposits of such a dwelling, however, this is not confirmed.

Alternately, it may be that this depression simply represents an open hearth feature associated with the initial occupation of Housepit 105 to the immediate east. It may eventually be determined that HP 105 contains a component dating to the early part of the Plateau horizon.

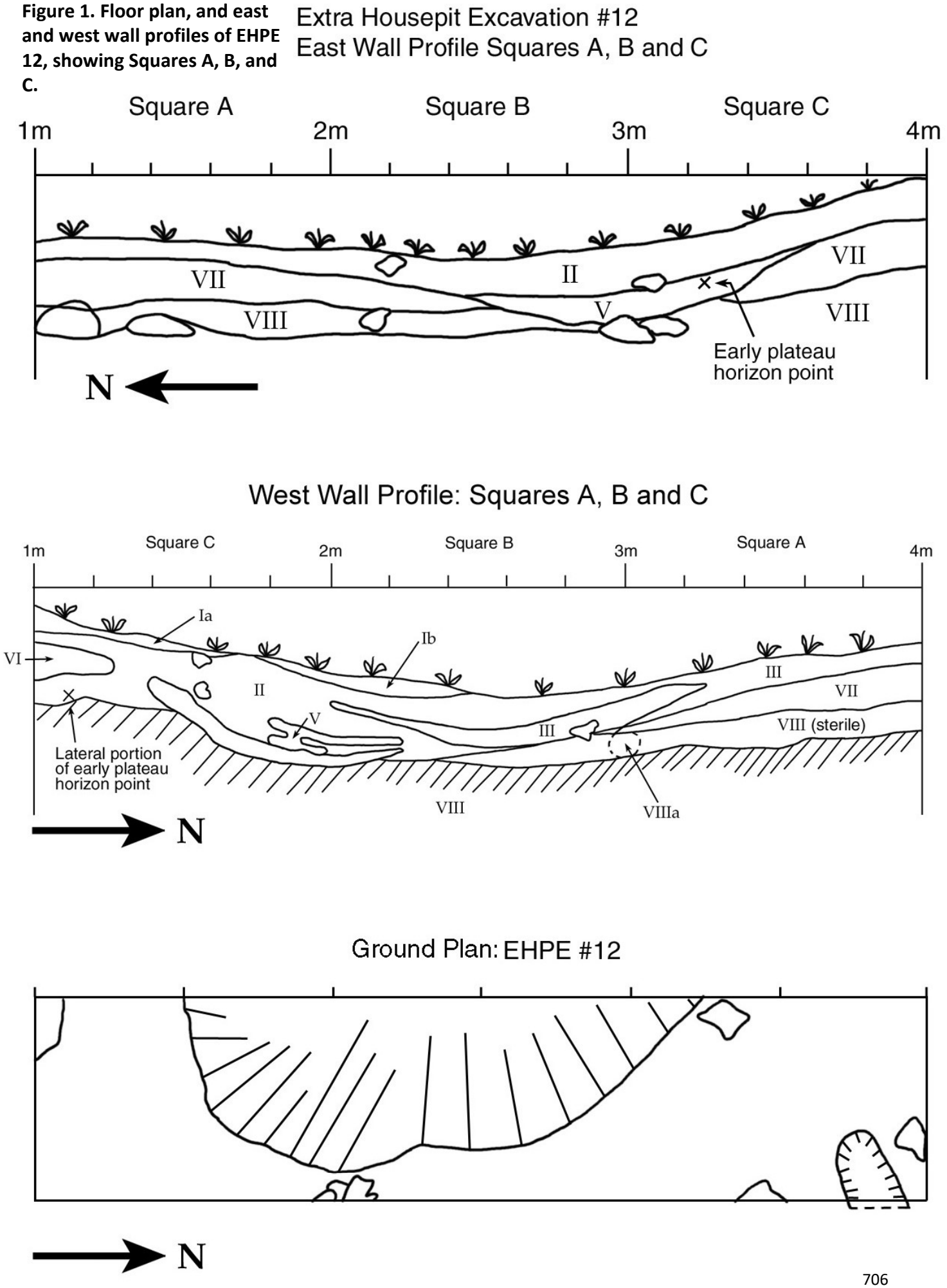
Figures

Figure 1: Floor plan, and east and west wall profiles of EHPE 12, showing Squares A, B, and C.

Figure 1. Floor Plan and East and West wall profiles of EHPE 12, Squares A, B, and C

Stratum	Munsell (dry)		Description
Ia	10 YR 3/2	Medium gray brown	Loose, sandy silt with 5% pea gravel and pebbles.
Ib	10 YR 5/2	Light gray	Moderately compact, sandy silt with 5% pea gravel and no pebbles.
II	10 YR 4/2	Light gray brown	Moderately compact, sandy silt with 5% pea gravel, 3% small pebbles, and scattered small flecks of charcoal.
III	10 YR 3/1 7.5 YR 4/4	Mottled dark gray brown/orange brown	Moderately loose, sandy ashy silt with 5% pea gravel, fire cracked rock, and scattered charcoal flecks and chunks.
IV	7.5 YR 4/4 10 YR 3/2	Mottled light orange gray/medium gray grown	Moderately loose, ashy sandy silt with 5% pea gravel, occasional small pebbles, high charcoal content, and high FCR content
V	10 YR 3/1	Dark gray brown	Moderately loose, sandy silt with 5% pea gravel and high charcoal content.
VI	10 YR 3/2	Medium gray brown	Moderately loose, sandy silt with low pea gravel content, charcoal staining, and some light orange gray (7.5 YR 5/4) mottling.
VII	10 YR 5/3	Light gray brown	Moderately compact, sandy silt with 5% pea gravel and occasional pebbles.
VIII	10 YR 6/3	Light gray	Very compact, sandy clayey silt with 30% small pebbles and cobbles and 10% pea gravel. Sterile.
VIIIa	7.5 YR 4/6	Light grayish orange	Moderately compact, sandy clayey silt (burnt).

Figure 1. Floor plan, and east and west wall profiles of EHPE 12, showing Squares A, B, and C.



Extra Housepit Excavation 13 Excavation Results

Cheryl Jacklin and Mike Rousseau

Extra Housepit Excavation 13 was dug into a small circular cultural depression located in the eastern section of the site, in close proximity to Extra Housepit Excavation 10. The surficial dimensions of the pit feature measure about 2 m in diameter by about 0.25 m deep. An excavation unit measuring 2 m north-south by 0.75 m east-west was dug into the northwestern section of the depression such that its southeast corner intersected the center of the pit. The unit was designated as Square A. A small excavation block annex (A-1) measuring 1 m north-south by 0.25 m east-west was added to the southeast to secure a larger sample of materials from the center of the feature. Excavation was conducted with trowels in 10 cm arbitrary levels. All matrices were screened through 1/4" mesh.

Excavations revealed that the pit was originally quite shallow, extending from 0 cm to 20 cm below surface. Only two lithic waste flakes, some charcoal, and a few fire cracked rocks were recovered. These data suggest that Extra Housepit Excavation 13 probably functioned as a fire pit.

Extra-Housepit Excavations 14 and 15—Summary of Excavation

Rae-Dawn Wilson and Andrew Henry

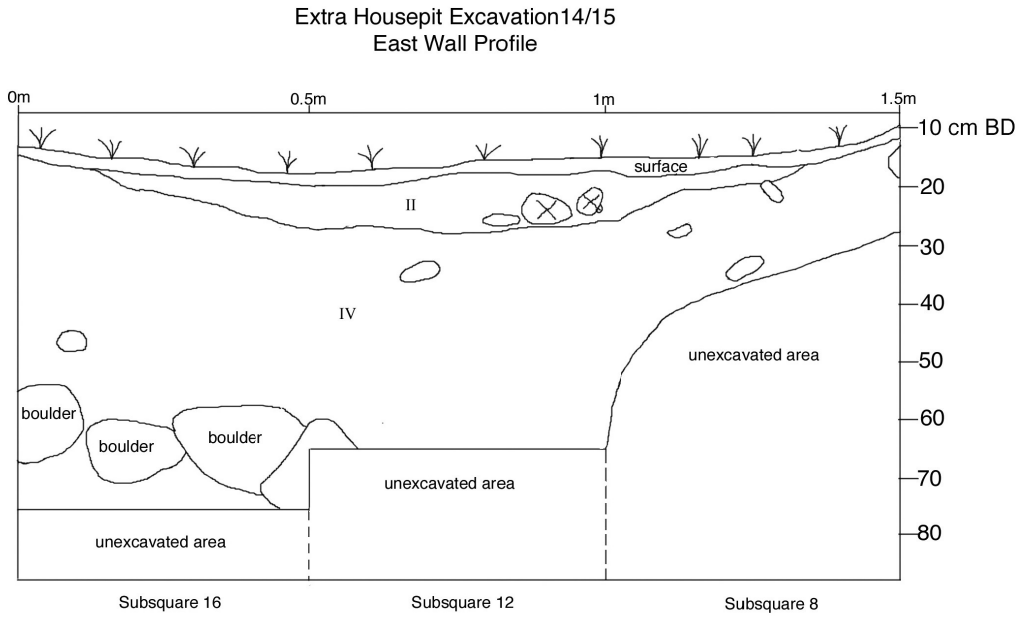
Extra-Housepit Excavation 15 is a slight depression on the north facing slopes of the till ridge forming the southern boundary of terrace 2 (Vol. III, Preface, **Fig. 2**). From surface indications it appeared likely to be a roasting pit. The excavation trench revealed what was likely a food preparing and cooking area for several generations (**Fig. 1**). The roasting pit at the upper levels represents deer cooking, along with other fauna.

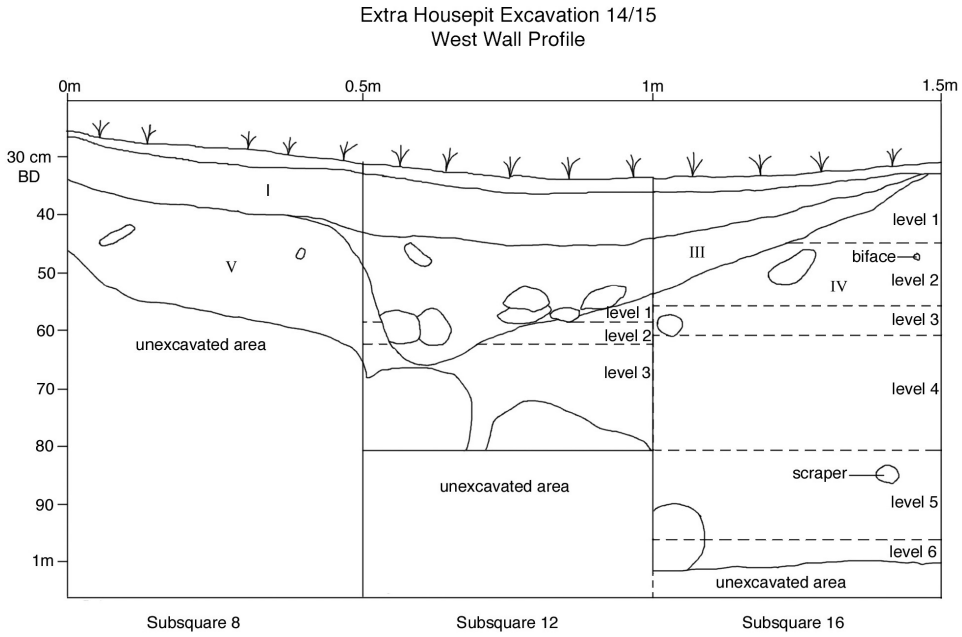
Stratum IV: Subsquares 12 and 16 of (levels 2 and 4 to 6) appeared to show evidence of a hearth (level 2) or base wall of a roasting pit, and a wall or bench of boulders and cobbles (levels 4 to 6) about one half meter from the extent of fire-cracked rock in Stratum III. The inner side of the wall was probably dug out, and the wall acted as a retainer where flaking/knapping and butchering preceded cooking. Wind blown loess and eroded till appeared to have filled gaps between the rock walls, and flakes were found throughout. Some of these flakes may have reached depths by trampling, yet chert flakes were found only a few centimeters under the large boulders, indicating that they would have been deposited before the boulders were put into place. Subsquare 16 was a bit darker and higher in gravel content. There was no evidence of carbonate deposits on the under-sides of either pebbles of boulders. They were either placed where they have been found by past residents, rolled to their positions by gravity, or more likely by a combination of both.

Extra-Housepit Excavation 14 was a test of a pattern/depression that appeared to be a natural depression. No further description was obtained or necessary.

Figures

Figure 1. Cross-section profile of Extra-Housepit Excavation 15.





Extra-Housepit Excavation 16—Summary of Excavation

Laurie Janeson

Extra-Housepit Excavation 16 is a natural root fall depression on the south-facing slope of the till ridge of Terrace 2 (Vol. III, Preface, **Fig. 2**).

Stratum I: This stratum consisted of unconsolidated till of about 50% pebble and gravel and showed some slight discoloration.

Stratum II: This stratum had a similar matrix, but a basin-like layer of dark soil and charcoal was found, which included fragments of bark and bone.

Stratum III: This stratum revealed unconsolidated till consisting of 50% pebble and gravel along with more bark.

Stratum IV: This stratum was more consolidated, sterile till, with the *in situ* cobbles having a carbonate crust on their bottom surface.

The carbonate encrusted cobbles in Stratum IV helped indicate that this stratum was undisturbed till.

Extra-Housepit Excavation 17—Summary of Excavation

Catherine Alder

Extra-Housepit Excavation 17 is a circular depression covering an area of approximately two square meters (**Fig. 1**). It is located on the upper terrace, west of HP 104, and south of EHPE 18 and 19 (Vol. III, Preface, **Fig. 2**). The purpose of the excavation was to determine its function, and if possible, to also determine its age (by artifact association). A trench was excavated in the center of the depression (measuring 150 cm north-south, 50 cm east-west—separated into 50 x 50 cm subsquares). As well as an additional subsquare, which was excavated on the east wall of this trench, there were three separate strata encountered during this excavation.

Stratigraphy

Stratum I: This stratum consisted of loose soil with less than 5% gravel, and included few if any cultural artifacts.

Stratum II: This stratum was a basin-shaped charcoal deposit approximately 48 cm east-west and 50 cm north-south. This charcoal deposit was surrounded by fire-cracked rock, which occurred within the deposit. The charcoal deposit contained the remains of a deer (fragments of antler, phalanges, and other pieces of bone), as well as a large number of small chert and trachydacite flakes. Beneath the bone, there were several pieces of charred bark (both pine and birch). Underneath Stratum II, I encountered sterile till, indicating that the bottom of the pit had been reached.

The excavation of this pit indicated fairly conclusively that this feature was a roasting pit. This was evident for several reasons: (1) it was relatively

shallow; (2) there was a large amount of charred bark and FCR, and; (3) there was no indication that the pit was used over an extended period of time (i.e., for storage).

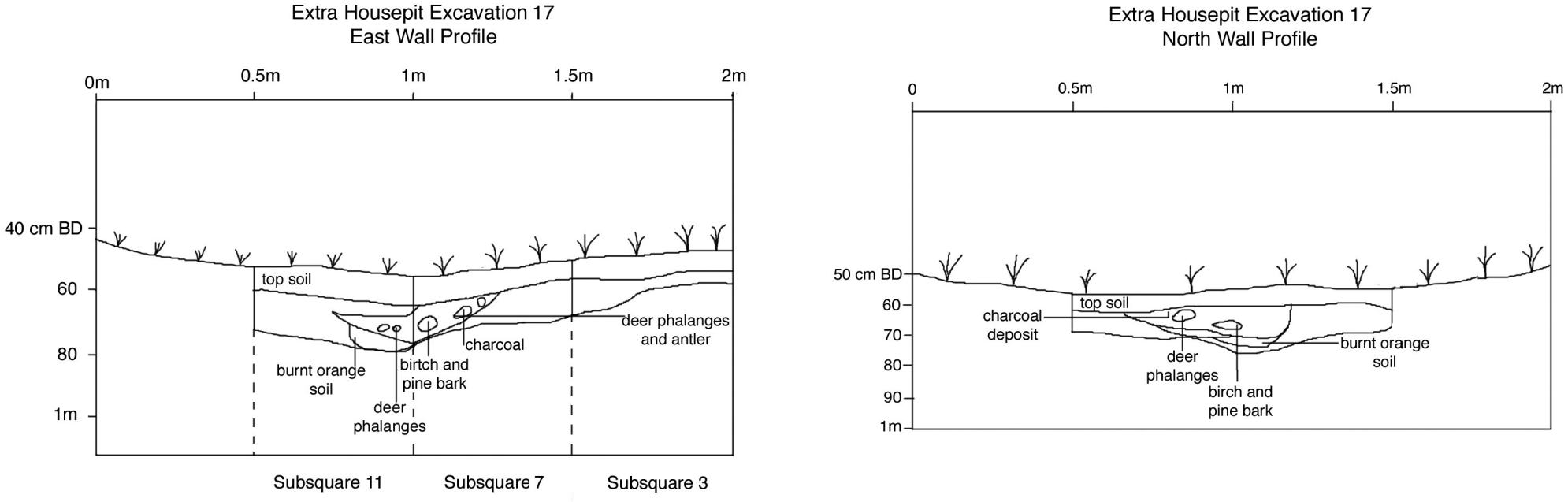
The fact that this feature was shallow seems to indicate that it was made fairly rapidly and was intended for a one-time use. The lack of successive layers (i.e., a stratum containing charcoal, followed by an "unused" stratum, followed by another stratum containing charcoal), also indicate that the pit was only used once, and most likely for roasting food. The large amounts of charred bark and FCR also point to a roasting pit, since both appeared in a definite pattern (of a fire or hearth), and the quantity of charcoal present is much greater than would be found if a fire was set to "clean" the pit (for use as a storage pit).

The FCR which appeared in the charcoal deposit may have fallen in after the pit was used, while the remaining rocks (on the outside of the charcoal deposit), were probably used initially to contain the fire. The flakes which were found within the deposit may have been fragments of those used to butcher the deer before it was placed in the roasting pit.

Figures

Figure 1: Cross-section profile of EHPE 17, a small meat roasting pit.

Figure 1. Cross-section profile of EHPE 17, a small meat roasting pit.



Extra-Housepit Excavation 18—Summary of Excavation

Catherine Alder and Mike Harrower

Extra-Housepit Excavation 18 is a circular depression approximately 170 cm east-west by 190 cm north-south (Vol. III, Preface, **Fig. 1**). It is located on the upper terrace, on the base of a small hill at the edge of the site (east of HP 104). This feature was excavated to determine its function and, if possible, to date it (by artifact association).

The excavation consisted of a test trench being dug in the middle of the depression (**Fig. 1**). This test trench was 150 cm long, and was excavated in subsquares (each being 50 cm long and 50 cm wide).

Stratigraphy

Stratum I: Stratum I consisted mainly of windblown till and about 10% gravel (pebbles or larger). Also taken from this stratum was a small chert flake (less than 1 cm). This stratum appears primarily to be sterile material, which was taken out of the pit when it was being excavated originally.

Stratum II: This stratum was most pronounced in Subsquare 3 (the south portion of the trench), and appeared to surround the outside of the pit. This stratum consisted of sterile till and large boulders and cobbles.

Stratum III: This stratum was the final stratum to be encountered, and although excavation was not completed, Stratum III was five levels deep and showed no indication of changing into sterile till. The first level of Stratum III was indicated by a change in soil (finer, fewer pebbles) and by the appearance of artifacts. Finds in this stratum consisted of large pieces of bark (pine and birch, from Ssq.'s 8 and 3), animal bones (deer, salmon, mouse), flakes (as well as a possible chopper), and two dog coprolites. Items

were both charred and uncharred, with uncharred pieces of bark generally appearing directly above charred portions. Additionally, large pieces of bark appeared at different levels, possibly indicating that the feature was used on more than one occasion. There were possibly two pit bottoms found. The first is at approximately level 4. This pit bottom is indicated by a darker layer with a relatively high concentration of salmon bones and bark. What appears to be the second pit bottom lies at level 6 or 7, sloping downward from the outside of the pit inwards. Unfortunately, none of the finds allowed for an estimation of which would have indicated the age of this pit.

Based upon the evidence, EHPE 18 was a cache pit. Bones that were found were fragmentary, and included deer, salmon, bird, and mice. The presence of mice was most important, since it would appear that they had made their way into the pit after it was filled with food. The charcoal found may have been the result of fires set to exterminate these types of pests. The depth of the pit and the successive layers of bark (followed by charred bark) might show that the pit was used on several occasions.

Figures

Figure 1: Cross section of EHPE 18.

Figure 2: Floor plan of EHPE 18.

Figure 1. Cross section of EHPE 18.

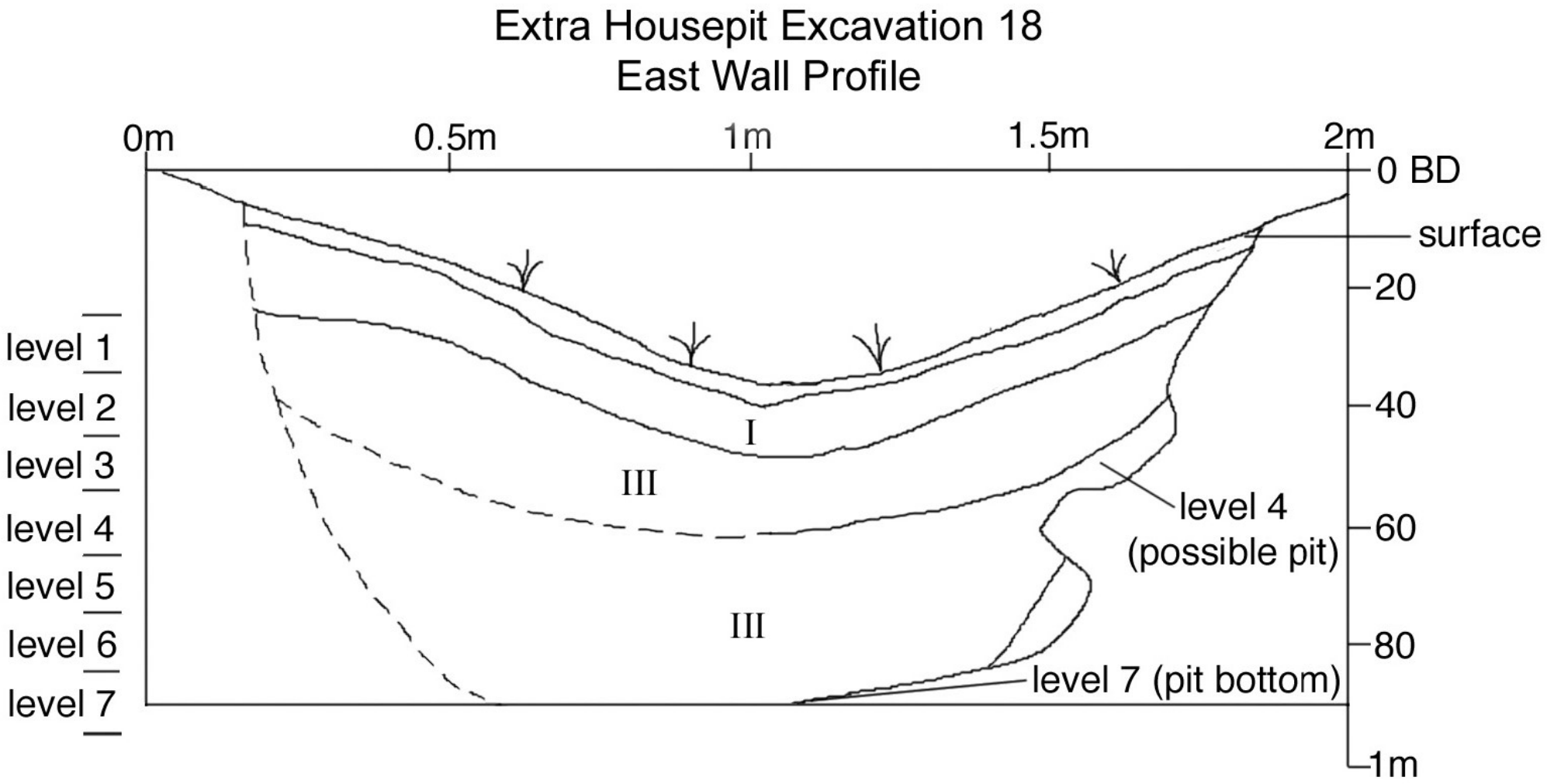
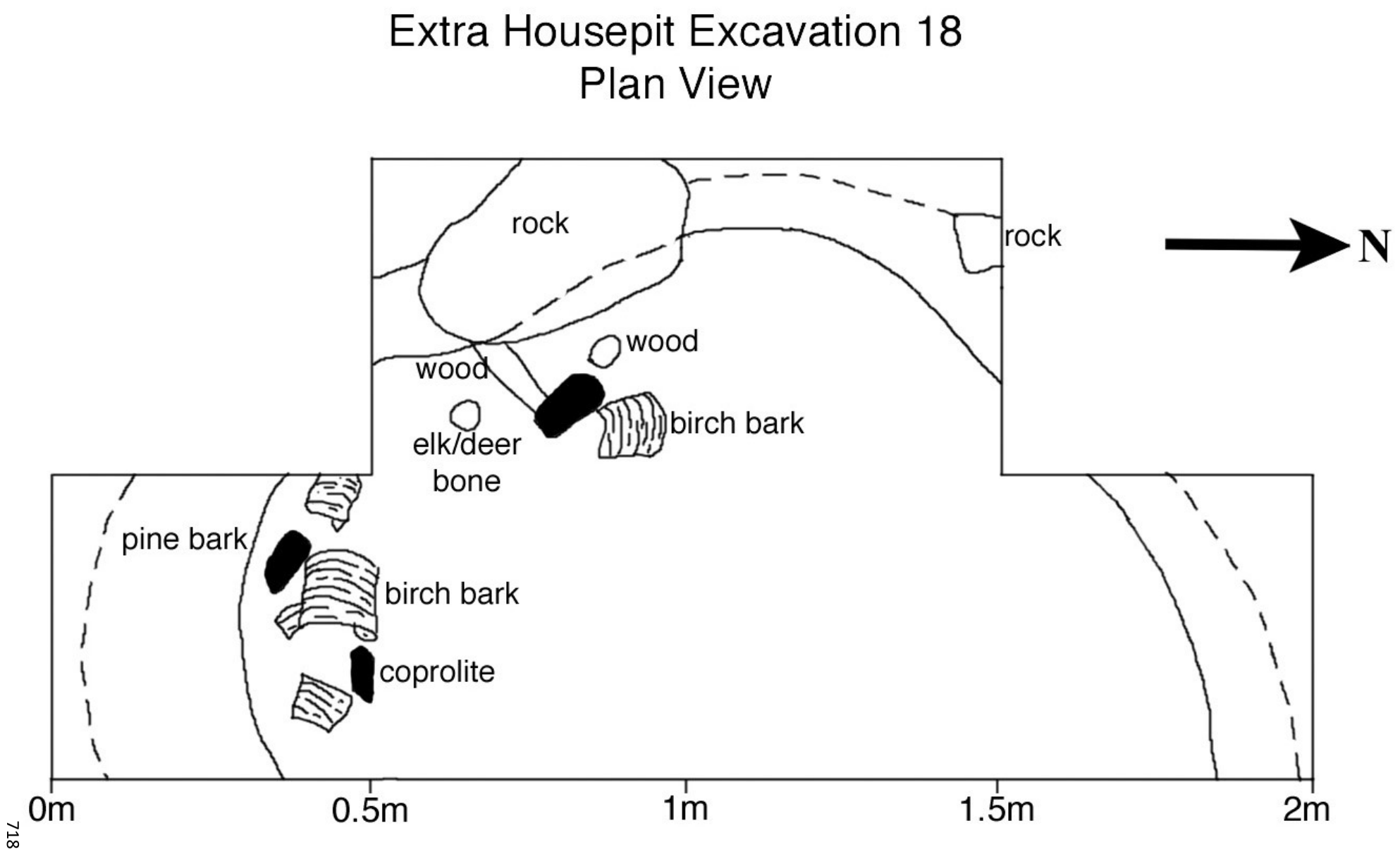


Figure 2. Floor plan of EHPE 18.



Extra-Housepit Excavation 19 - Summary of Excavation

Marzena Simecka and Lorna Potter

Extra-Housepit Excavation 19 is a circular depression 2.3 m long, and 2.16 m wide rim to rim (**Fig. 1**). At its deepest point it measures 80 cm BD. It is located on the upper terrace of the Keatley Creek site, on a small hill at the edge of the terrace (Vol. III, Preface, **Fig. 1**) and. Excavation was undertaken to determine the function of the feature, and to estimate its date with the aid of artifacts found. From surface indications, EHPE 19 was thought to be a cache pit.

The structure was divided into two Squares, A and B. The excavation took place in Square A. A 50 cm wide trench was dug in the middle of the depression. The trench was divided into 50 x 50 cm subsquares, and were excavated by natural stratigraphy and levels. Only Subsquares 4, 8, and 12 were excavated. Due to the time constraints it was not possible to reach the bottom of Subsquares 8 and 12.

Stratigraphy

Stratum I: This stratum was mostly composed of soil that was dug up when the structure was made. The soil was light in color, and relatively densely packed. The soil was made up of more than 20% pebbles, and close to 10% cobbles. A chert flake was found during screening of soil from the first level of Stratum I. The distal end of a bird humerus was recovered during screening from the first level of Stratum I.

Stratum II: most of the finds made during the excavation were from Stratum II. The soil was considerably darker and was black in places. The pebble content was more than 29%, and about 10% cobbles. On the eastern

side of Subsquare 8, two boulders measuring from 20–25 cm in diameter were found. Charcoal deposits occurred in all three levels of Subsquare 8. A section of partially burnt pine bark was found in Square B, Subsquare 15 and 11, level 2, along with FCR (6.4 cm and smaller) and fire reddened earth along the pit wall. Neither bone or stone remains/artifacts were found in Subsquare 8. The soil of Subsquare 12 seemed to be the same color as in Subsquare 8, but it was less packed down. This soil appeared to have been used to cover up the cache pit. Excavation in those two subsquares was not very difficult. In Subsquare 12 the pebble content increased to more than 20% and the cobble content decreased to about 5%. In the second and first levels, wood planks were found on the north end of the subsquare. The second and third levels produced a high content of charcoal and bone fragments.

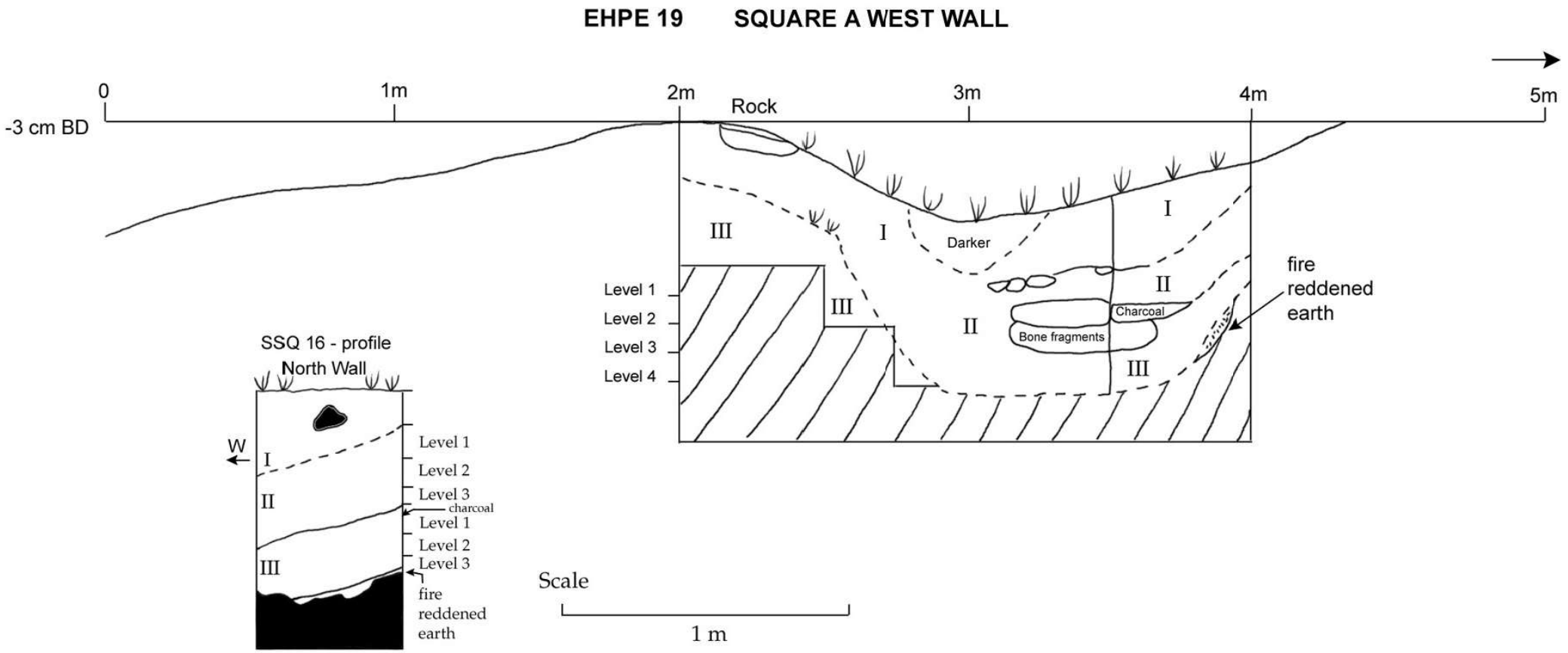
Stratum III: This stratum was mostly composed of the sterile till. This was encountered in the second half of Subsquare 4 and the middle of the south wall in Subsquare 8. In two subsquares, portions of articulated salmon head(s) were found. An articulated section of birch bark was found in Square B, Subsquare 11, level 1. Excavation was concluded about 80 cm BD.

The evidence indicates that EHPE 19 was a cache pit. Overall, the pit was very deep, which is characteristic of a pit designed for storage. This feature lacked large quantities of charcoal and FCR, and the faunal remains that were found (fragments of fish and mammal bones, including two sections of articulated salmon heads) were not charred. A roasting pit would have high quantities of charcoal, and remains associated with the pit would be much more likely to be charred.

Figures

Figure 1: Stratigraphic cross-section of EHPE 19, a cache pit.

Figure 1. Stratigraphic cross-section of EHPE 19, a cache pit.



Extra-Housepit Excavation 20: A Large Roasting Pit

Brian Hayden

Just upstream from the point where Keatley Creek leaves the Clear Range bedrock and begins to flow through glacial till, there are two pithouse-sized features, which were originally given housepit numbers. These are the easternmost features that were located as part of the Keatley Creek site (Vol. III, Preface, **Fig. 1**). Their peripheral and unusual location (in the streambed) led to the testing of the most distinctive of the two features in 1992 (**Fig. 1**). This 8 m depression turned out to be a roasting pit of exceptional size and was designated EHPE 20. The other feature a few meters upstream has not been tested, but was designated HP 121. Another possible flat round area about 50 m downstream in the creek bed may also be related to the main site occupation but appears to be a structure quite different from a normal pithouse. This has not been explored and no housepit or other designation has been given to it.

This roasting pit feature is potentially very important because of its large size and because of potential implications that this size carries for the quantities of roots being roasted at one time, as well as for the number of people that must have cooperated to use such a facility, and for the possible use of such a feature in connection with feasting. Therefore, further testing of this feature was conducted in 1997 in order to obtain flotation samples in an attempt to determine what kinds of plants were being roasted in this feature. Since the 1992 excavations did not extend to sterile till in the southern part of the test trench, this was reopened and finished in 1997 (**Fig. 2**). Unfortunately, no identifiable plant remains besides wood charcoal

were obtained from the flotation samples, however, the feature was dated to 1580 BP, that is, contemporaneous with the major occupation of the site.

Excavators in 1992 distinguished 5 different strata within this feature, although in 1997, the excavator only distinguished 3 strata (**Fig. 2**). In both cases, it was clear that the feature had undoubtedly been used many times. This is also apparent from the extensive debris cone that has accumulated downslope from the central depression and from the apparent slope of the till under the south rim which may indicate the location of an earlier roasting pit under the debris cone. Except for the surface accumulations (Stratum III), it was difficult to identify distinct separations of the strata largely because of the intense dark color of all strata and the constant occurrence of FCR.

Stratigraphy

Stratum I: This was defined as the extant organic litter mat.

Stratum II: This was identified as thrown up debris cone material consisting of very dark sandy silt with charcoal flecks and moderate amounts of FCR. A few bone fragments occurred in the deposit, but no lithic materials.

Stratum III: This appears to represent reworked debris cone material that has been transported by runoff back into the central depression, although it contains considerable FCR as well as a few flakes and bone fragments.

Stratum IV: This is probably the main matrix remaining from cooking episodes. It has the highest amount of FCR (up to 105 per 10 cm level for a single subsquare--i.e., 40% of the matrix), and also displays patches of

reddish-brown soil within an overall black matrix, especially towards the bottom of the stratum. Charcoal flecks occurred throughout and 2 lithic flakes were recovered from these levels.

Stratum V: In places, this was indistinguishable from Stratum IV, and was initially only identified because of some local fire-reddening at the top of the stratum. This stratum, too, probably represents matrix from roasting events. Towards the center of the feature, very black, baked soil was noted by one excavator. Small amounts of burned bone were recovered from this stratum, but no lithics.

Stratum VI: This is described as sterile till which has been discolored from staining or fire-reddening from the activities in the overlying strata.

While it has not been possible to positively identify the materials being roasted in this feature, it is interesting to note that there are no boulder sized, or even large cobble sized heating elements associated with this feature, whereas very large heating elements were associated with the larger roasting pits on the southern terraces of the site (EHPE 33 and 35). It is possible that between major large scale use episodes of this feature, in which the entire area was in active use, smaller use episodes may have occurred in which only a portion of the feature was used, as perhaps indicated by the relatively small but sharp pit outline in the till at the north end of the 1997 profile.

It is also interesting that the till contact slopes down underneath the rim in the south end of this profile, possibly indicating the existence of an earlier roasting pit offset slightly to the south of the present depression. This is certainly one of the most important roasting pit features at the site in terms of its potential importance for feasting and cooperative exploitation of plant resources, and it could be investigated in greater depth with

considerable benefit. It certainly seems far from coincidental that this feature dates to the time of maximum sociopolitical complexity at the site and maximum housepit corporate group size. Whether it was used by members of a single corporate group or whether it was used for inter-group feasting events remains to be determined by future research.

Figures

Figure 1: General plan of the large roasting pit EHPE 20 in the upstream part of the Keatley Creek streambed.

Figure 2: Stratigraphic cross-section of the east and west walls of the test trench in EHPE 20.

Figure 1. General plan of the large roasting pit EHPE 20 in the upstream part of the Keatley Creek streambed.

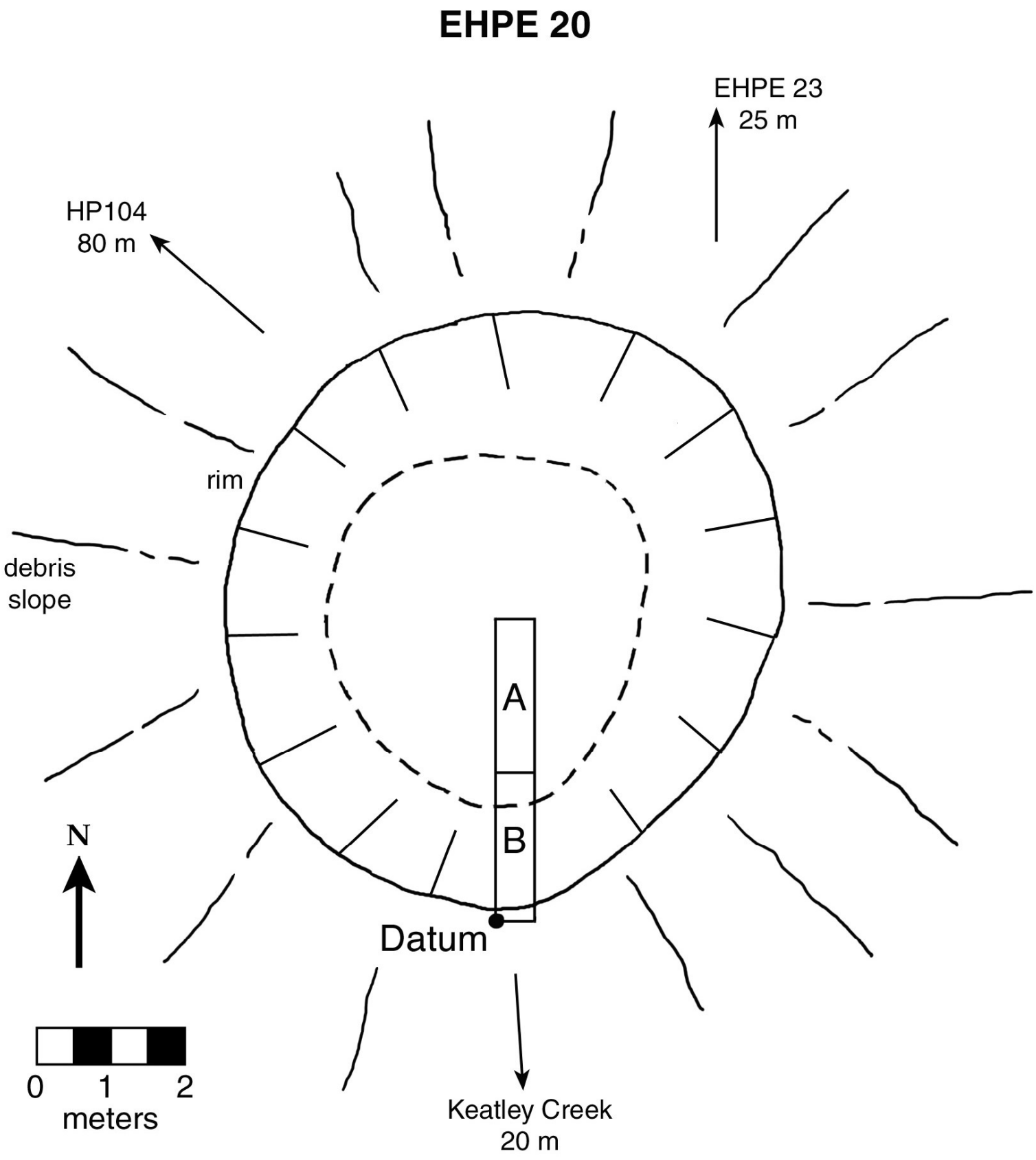
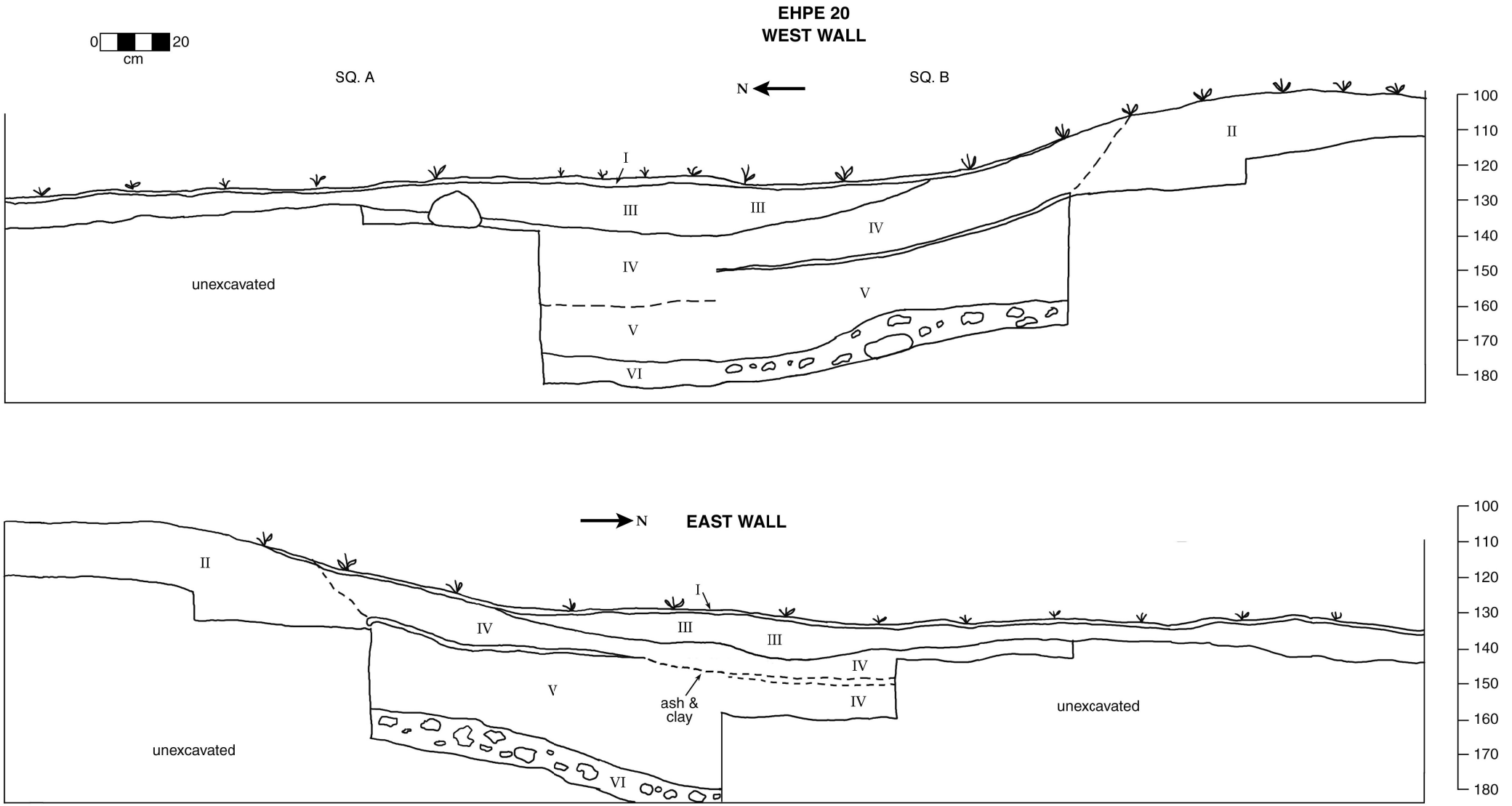


Figure 2. Stratigraphic cross-section of the east and west walls of the test trench in EHPE 20.



Excavation Summary for Extra-Housepit Excavation 21

Terry Clouthier

Extra-Housepit Excavation 21 (EHPE 21) is located south of the main site, overlooking the Fraser Canyon (This Volume, Preface, **Fig. 1**). Excavations were undertaken in order to determine the function and, if possible, the age of the feature.

Indications were that one pit (Stratum I) was dug into a previous pit. This was visible in the stratigraphy of the west wall (**Fig. 1**). Stratum II consists of the earlier pit. Material found in context in Stratum II below the bottom of pit 1 included 1 stone flake, one salmon vertebrae, and one horse foot. Two points from Stratum I (one Kamloops side notched and one Kamloops multi notched point) appear to have been dropped or placed where they were found but the possibility that they were part of the backfill for pit 1 should not be discounted. An analysis of cut marks on the horse foot may help clarify this. The cut marks appear to have been made by a metal and not a stone blade. Therefore, the points may have been part of the back fill.

Given the depth of this feature, and the lack of charcoal, FCR, and bone, the excavation results point to a cache pit function. It is interesting to note that the pit was located on the edge of a ridge, a somewhat unusual location for a cache pit. Snow in the winter, however, would be blown off the top of the pit and therefore maintain year round accessibility. The presence of a Kamloops point and cut marks made by a metal tool indicate that the pit was used within the last 250 years. Under microscopic examination, the cut marks had clean v-shaped features. These marks were fine "hairline" cuts with none of the ragged edges or interior parallel lines

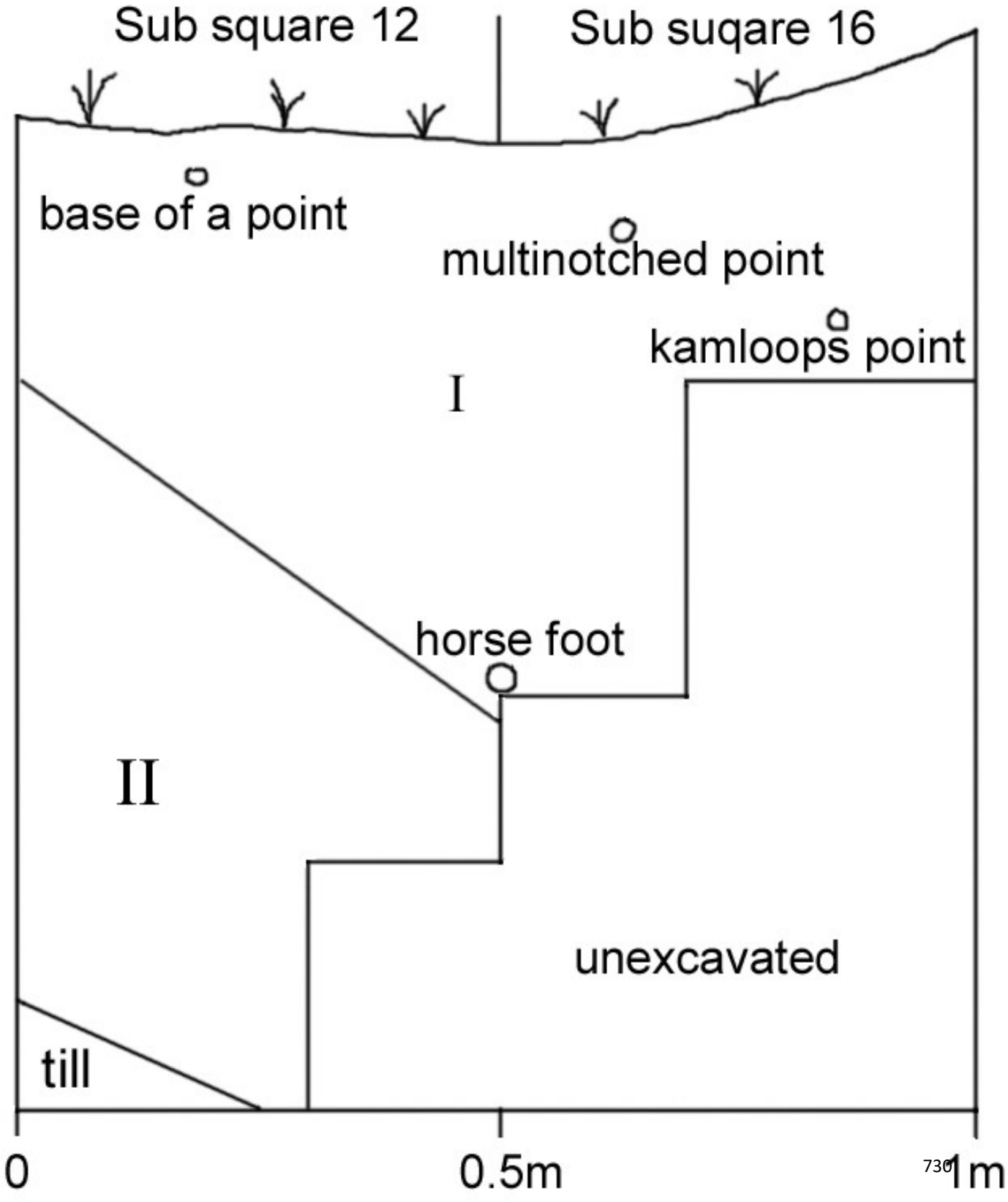
that characterize stone tool or tooth marks. These marks also occur in locations logical for disarticulation cuts.

Figures

Figure 1: Surface plan and cross section of EHPE 21.

Extra Housepit Excavation 21
Square A - West Wall Profile

Figure 1. Surface plan and cross section of EHPE 21.



Extra-Housepit Excavation 22—Summary of Excavation

Andrew Hunt

Approximately ten depressions were recorded on the ridge overlooking the Fraser Canyon to the south of the site, and two were chosen for investigation. Although the group of depressions are located on the opposite side of Keatley Creek from the main group of house pit house depressions, it was suggested that the ridge might have served as a lookout position due to its unique view of the river terraces to the south and west of the site. It was thought that the depressions, with diameters between three and four meters each, might have been the remains of structures which served as sentinel huts. The purpose of the investigation of two of the depressions that were situated on the edge of the ridge was to establish if, in fact, they were the remains of the huts. One of these two depressions was EHPE 22 (Volume III, Preface, **Fig. 1**).

If floors were discovered similar to the ones found in the house pit depressions at the other locations within the site, then it could be inferred that the depressions were the remains of structures. If the investigation showed that there were no identifiable floors then it could be established that the depressions served another purpose. Other possible uses of the depressions were as cache pits or roasting pits. Below surface disturbances tend to extend to a deeper level in cache pit depressions, containing obvious back fill strata and an admixture of faunal remains. Roasting pits may be shallow or deep but are most readily characterized by fill that is saturated with charcoal deposits. Therefore establishing the difference between a depression used as a living structure and ones used as caches or roasting pits is a straight forward matter, except in the situation where depressions have

had more than one use. EHPE 22 was investigated by excavating a trench 100 cm by 50 cm to a depth of 110 cm (**Fig. 1)**.

Stratigraphy

Stratum I: This stratum was composed of 20% rock and appears to be colluvium or fill that has filled in the depression. It conforms to the natural slope of the edge of the pit feature and at its center it is about 15 cm thick, thinning in an up slope direction.

Stratum II: This stratum appears to be a secondary pit feature used and filled in after the main cache pit was used. Stratum II is also composed of 20% rock and is mainly distinguishable from the Stratum I by an interface zone with slope lines. The infilled matrix conforms to a shape that drops in the south end of the depression indicating that the digging and filling of this stratum was an event taking place sometime after lower levels of the main fill were deposited.

Stratum III: This stratum represents the main depositional event and extends as deep as 110 cm below the surface. Disturbance by rodent burrowing is intensive. The matrix is looser and softer than the overlying strata. It is composed similarly of 20% rock but is also of a brown color, rather than a grayish color characterizing the overlying strata. Stratum III dips down even farther than 110 cm in the north end of the pit. Further investigation was not carried out due to the fact that enough information had been gathered to establish that the pit was not used as a residential structure.

All of the strata contained small amounts of charcoal. Stratum III particularly contained large chunks up to 5 cm in total length. The charcoal

appeared to be part of the pit fill due to the fact that it was randomly dispersed throughout the stratum. There was a notable increase in the amount of charcoal in a downwards direction in Stratum III. Near the top, the concentration was below 2% and near the bottom it approached closer to 5% charcoal concentration. Due to the fact that there was no evidence of fire it is difficult to pinpoint the source of the charcoal. Nevertheless the source of the charcoal was not *in situ* because of its random placement. In addition, concentrations of charcoal were not great enough to indicate that the pit was used for roasting activities.

Within Stratum I or at the interface between Stratum I and II, a tip of a projectile point was found. The point was not likely associated with pit digging, caching, or infilling activities but may have been deposited before or after these activities took place. If it was deposited before, then it was probably secondarily deposited during back filling or through down slope movement of Stratum I material. It seems more likely that it was in primary context due to the fact that two similar projectile point fragments were found in the same level in EHPE 21, less than 5 m away.

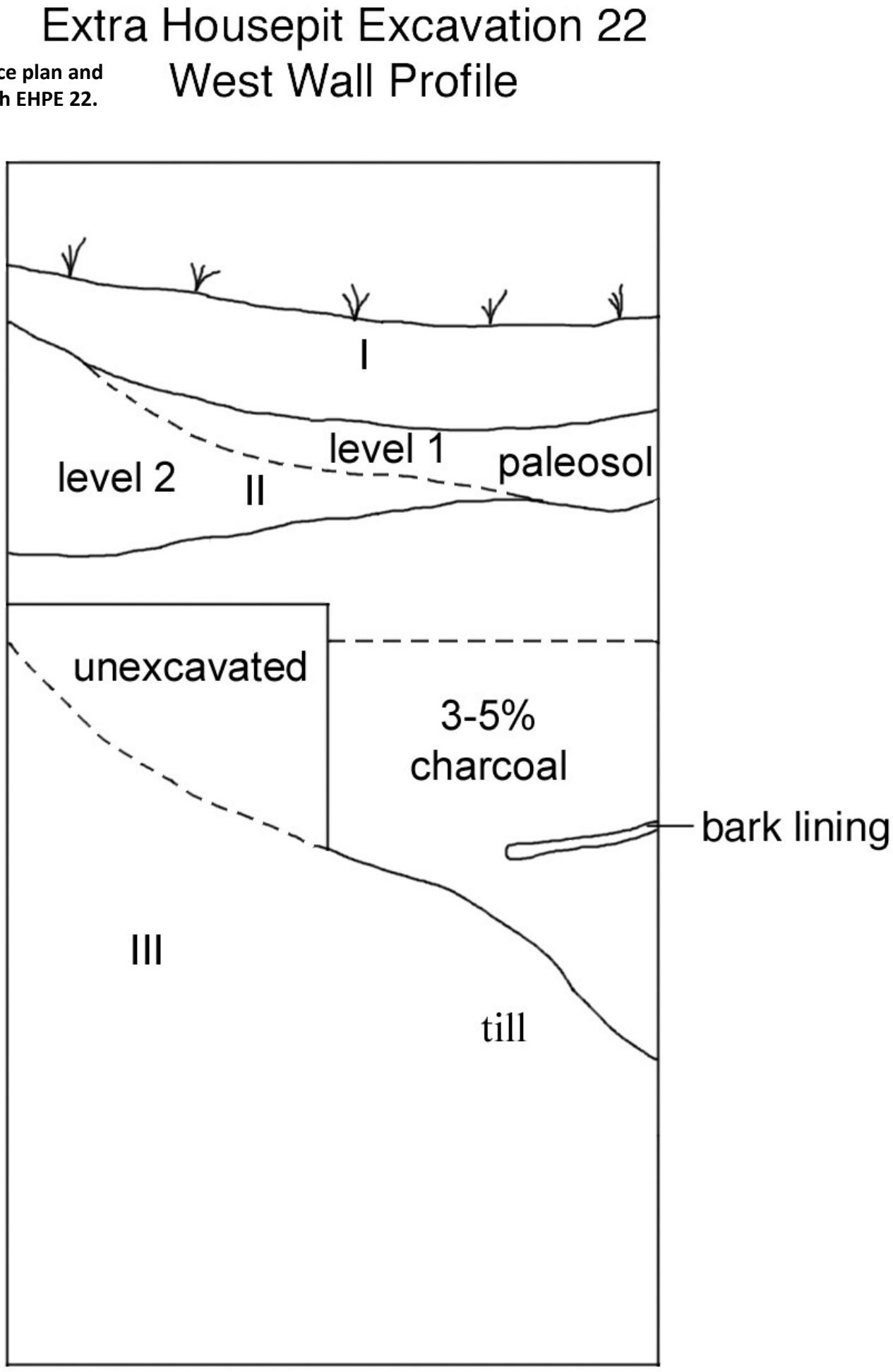
Stratum I and II contained faunal and lithic materials in small amounts. Fish, bird, and mammal bone (one of each), and fragments of fish skull were recovered in Stratum II. Four lithic flakes were found. All of these materials were probably part of the backfill materials. One stone flake was found in Stratum III. None of these materials independently or together indicates what the cache pit was used for. The faunal remains may have been brought to the site by animals for example, where they were left and eventually mixed with cache pit fill. Lithic materials could be at this location due to lithic reduction behavior, and were then secondarily deposited with pit fill.

No living floor was discovered, but the excavating showed that the depression had been used as a cache pit. The strongest evidence for the use of the ridge as a cache pit location is the shape and depth of the culturally removed and re-deposited pit fill along with large pieces of bark liner and rolls of bark found near the bottom of the pit. The extent of depth was greater than 110 cm below the surface; much deeper than would be expected in a living structure. Near the bottom of the main fill zone large fragments of bark were discovered. The bark may have originally been used as a liner protecting cached food from the surrounding matrix. Interestingly, underlying a large bark fragment were a number of smaller pieces of rolled bark. Both the bark liner and the rolled bark were kept as samples. It is difficult to establish whether the rolled bark was cached or served some role in preservation similar to the bark liner.

Figures

Figure 1: Surface plan and cross section oh EHPE 22.

Figure 1. Surface plan and cross section oh EHPE 22.



EHPE 23—Summary of Excavation

Sara Mossop Cousins

Extra-Housepit Excavation (EHPE) 23 was tested in 1997 in order to determine its function, the reason behind its isolated location, and the dates it was in use. The small pit was not clearly associated with a pithouse and was some distance from the main part of the village (Vol. III, Preface, **Fig. 1**). EHPE 20, located approximately 20 m downslope east of EHPE 23, was also tested and found to be a roasting pit. EHPE 23 was approximately 90 m east of HP 106 and Terrace 2, and was on a small platform itself, situated on a long, steep, south-facing slope above Keatley Creek, approximately 60 m to the southeast. The slope remaining below and to the south of the pit feature consisted of darker soil than the upper slope and the surface was littered with FCR and charcoal debris, presumably from roasting activities on the terrace. EHPE 23 was approximately 2 m in diameter and the center was about 23 cm below the outer rim level before excavation (**Fig. 1**). The area today is forested with ponderosa pine (*Pinus ponderosa*), although it is burned over from the recent fire, and plenty of rocks are available, as is water from Keatley Creek.

Three 50 cm x 50 cm pits were excavated in a 50 cm x 150 cm trench running north-south. The two units including the center of the pit were excavated until sterile glacial till was encountered, while the rim pit fill unit appeared to continue into the slope. At the time this became apparent, excavation was stopped due to time restrictions. Arbitrary 10 cm levels were excavated following surface deposits until new strata became apparent. Subsquare 9 of Square A included the center of the depression.

Stratigraphy

Stratum I: This stratum contained less than 5% charcoal mixed with brown silty sand with approximately 50% of the fill being cobbles ranging in size from 4-10 cm in maximum length.

Stratum II: This stratum was encountered about 18 cm below the surface and contained 20 to 30% charcoal, which consisted of generally fine fragments of wood and bark with several well preserved complete sections of wood with the bark intact, averaging 10 cm in length and 2 cm in diameter. One of these sections was put aside for dating and identification purposes. The soil was blackened silty sand with approximately 50% FCR. Cobbles ranged in size from 6-36 cm in maximum length. The largest of these were found near the bottom of the stratum. Stratum II appeared to include the remains a roasting area and a 1 liter flotation sample was taken for identification of the charred remains, which appeared to be floral and generally woody. Glacial till was encountered at 64 cm below the surface. The rocks that appeared to line the pit continue into Subsquare 5.

Subsquare 5 of Square A appeared to also include part of the roasting area and its rock lining. The surface of Subsquare 5 included a small depression whose function did not become apparent in the excavation, and some unassociated charred wood and bark that was likely from the recent fire and appeared to be ponderosa pine (*Pinus ponderosa*).

Subsquare 1 of Square A included the rim of the roasting pit, and possibly the remains of an earlier roasting pit event below the pit outlined in Subsquares 5 and 9. A mammal first phalange was recovered at a depth of 4 cm below the surface. There was evidence of fire reddening in a lens along

the boundary of the rock lining in Subsquare 5, which continued for approximately 25 cm horizontally at 4 cm in depth.

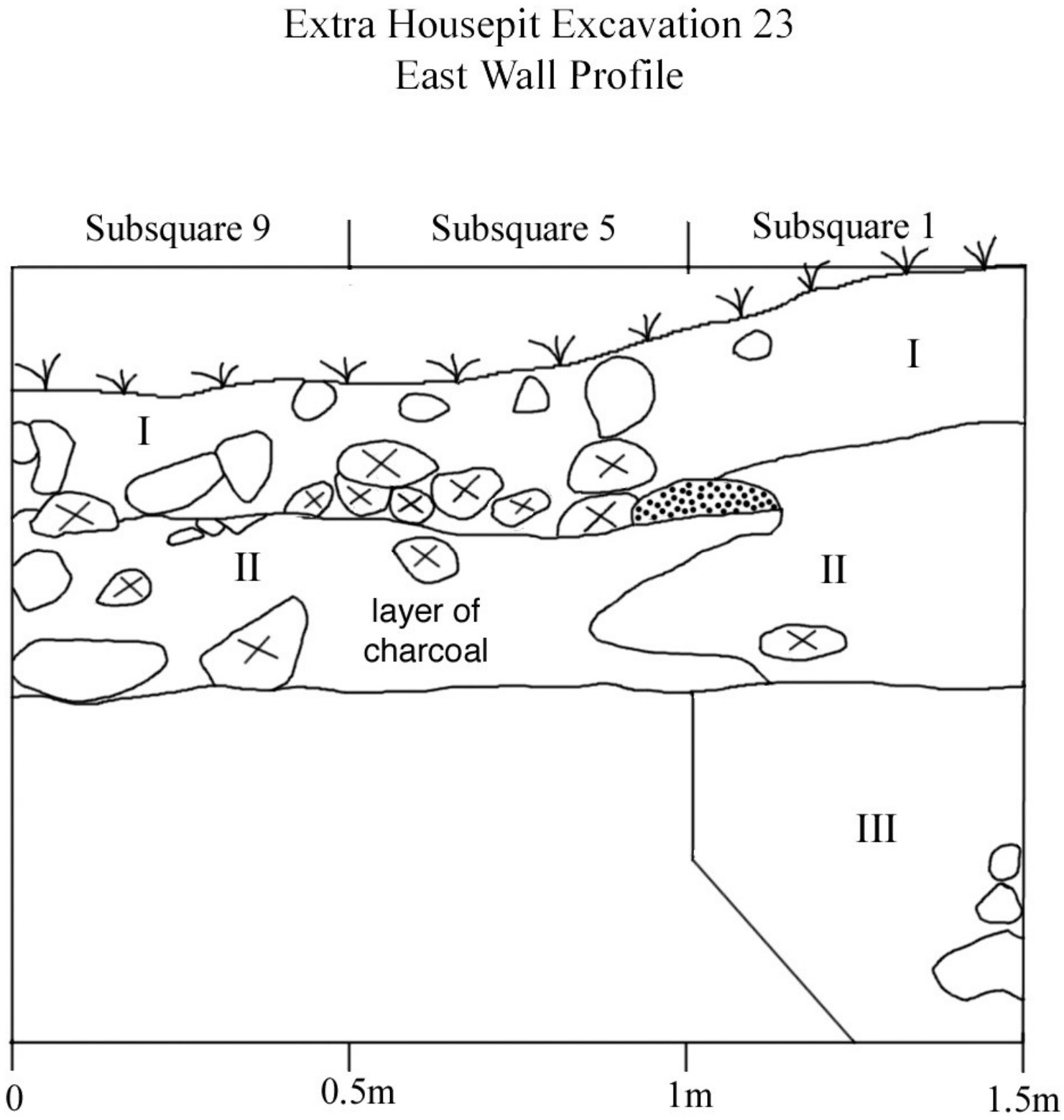
Stratum III: This stratum was only observed in Subsquare 1 and was encountered at 32 cm below the surface, which is lower than the glacial till of Subsquares 5 and 9. Glacial till was encountered in Subsquare 1 sloping from north to south in line with the slope below the terrace. Stratum III contained less than 5% charcoal but the soil was darker and appeared to contain a high percentage of carbon. Two small waste flakes (1 chert, 1 trachydacite) were recovered during the screening of the fill from about 105 cm BS. Stratum III appeared to continue deeper than the 116 cm level where excavation was halted (due to time restrictions). This stratum may have contained material from previous roasting events and a carbon sample was taken for dating purposes. If this is true, the material may extend into the slope of the hill.

EHPE 23 does not appear to have been a meat roasting pit, is not clearly associated with a pithouse, and may or may not contain vegetable matter other than wood charcoal. This pit depression on the surface of the small platform may represent the latest roasting event, which may have occurred more recently than the main occupation of the site, as the wood charcoal is well preserved and appears relatively undisturbed. The more recent pit may overlie earlier roasting events which have left debris eroding downslope from the terrace where the events likely took place.

EHPE 23 was dated to approximately 30 BP and flotation samples identified root tissues including *Allium* sp and *Lomatium* sp.

Figures

Figure 1. EHPE 23 stratigraphy profile.



Excavation Summary for Extra-Housepit Excavation 24

Sara Mossop Cousins

Extra-Housepit Excavation 24 (EHPE 24) is a fairly shallow depression (about 35 cm in depth at center before excavation) located about 3 meters to the east of HP 109 on Terrace 1 (Vol. III, Preface, **Fig 1**). It is approximately 3 meters in diameter and roughly circular (**Fig. 1**). This feature was tested in 1998 to determine if roasting pits (for either meats or vegetables) were associated with HP 109, with the idea that such pits might indicate feasting.

Subsquares 1 and 13 of Square A were excavated first, but neither of these subsquares demonstrated any clear evidence for plant or animal roasting. The soil was blackened, however, and there were a few scattered flakes of charcoal. A few trachydacite flakes were recovered, but no plant or animal remains, or fire-cracked rock. When Subsquare 9 was excavated, some mammal bone fragments were recovered near the surface, which were probably relatively recent. At about 35 cm below surface, there was a "pavement" of reddened and fire-cracked cobbles (making up 50% of the matrix). This rock concentration extended to 50 cm below surface, after which sterile till was encountered.

Excavation of Subsquare 5 was undertaken to explore more of this rock concentration. A small (1 cm in diameter by 2 cm thick) flat oval drilled shell bead was recovered near the surface of Subsquare 5. This type of bead had not been recovered before at the site, according to Brian Hayden. It was not associated with any other artifacts or features and appears to have been lost randomly. Several fire-cracked cobbles and a few flakes of charcoal were recovered at about 20 cm below surface. Below them, the soil

was darker and large, fire-cracked cobbles were found, along with a trachydacite flake. A flotation sample was taken from the matrix of FCR at about 35 cm BS. The amount of FCR and charcoal was much less than that encountered in other roasting pits, but it seems clear that something was cooked in EHPE 24.

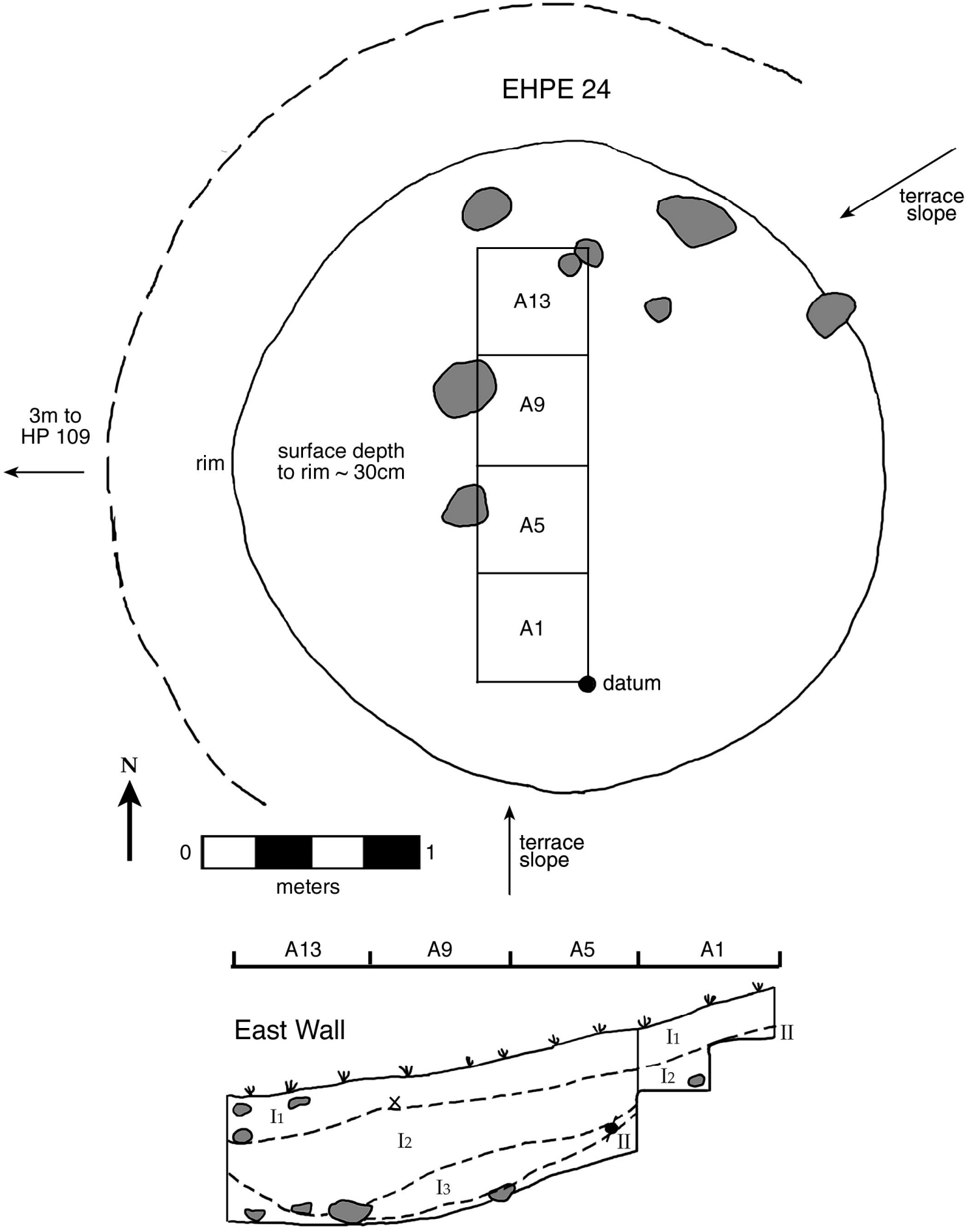
The boundaries of the pit are diffuse, seeming to start in Subsquare 5 and sloping into Subsquare 9 (see **Fig. 1**). It may have been used more than once, although the amount of charcoal and FCR does not suggest a great deal of use. EHPE 24 does not appear to be a particularly good example of a roasting pit, but may represent a functionally distinct type.

EHPE 24 has been dated to 490 BP, based on charred wood samples. No plant remains, other than charred wood, were recovered.

Figures

Figure 1: Surface plan and cross section oh EHPE 24.

Figure 1. Surface plan and cross section oh EHPE 24.



Excavation Summary for Extra-Housepit Excavation 25

Sara Mossop Cousins

Extra-Housepit Excavation 25 (EHPE 25) is a small, shallow depression located 16 meters to the north of HP 109 (Vol. III. Preface, **Fig. 1**). It was tested in 1998. Several flakes were recovered but there was no indication that this depression was a feature. The stratum did not change and sterile till was encountered without finding any clues pertaining to the formation of the depression. It appears not to have been cultural.

Excavation Summary for Extra-Housepit Excavation 26

Sara Mossop Cousins and Terry Clouthier

Extra-Housepit Excavation 26 (EHPE 26) is a fairly shallow depression located 11 m to the southeast of HP 109 (Vol. III, Preface, **Fig. 1**). It is approximately 4.5 m in diameter (including a 1 m wide rim, see **Fig. 1**). It was partially excavated in 1998 in order to determine its function, which was anticipated to be either a roasting pit or a small structure.

Extra-Housepit Excavation 26 did not demonstrate any characteristics of a roasting pit. It appears to have been a small structure, perhaps a menstrual "hut", although this is not clear. Subsquares 8 and 12 of Square B in the center of the depression included part of what appears to have been a small pit with some associated fire reddening (**Figs. 2 and 3**). The soil in the pit was blackened. A few pieces of burned bone were all that was recovered from this feature.

The non-sterile deposits are very shallow, even the pit feature does not extend below surface more than 17 cm. Due to its shallowness it may not be very old. Most bone fragments are too small to determine what they were.

Analysis of the Excavation

There is a lack of diagnostic artifacts throughout the entire depression. An average of only 3 cultural elements (bone or lithic) were recovered from each subsquare. The bone appears to be deer, as some diagnostic elements were recovered and interpreted. There is very little evidence of a floor, roof, or structure of any kind. There is a possibility that a bench of some kind was

situated around the hearth along the eastern side of the depression. This bench does not appear on the south or western side. Fire-cracked rock occurs throughout the first few centimeters of the depression. This FCR does not appear to be completely related to the hearth and it is possible that it may have been thrown out onto the roof or is associated with a possible post-structure camp occupation in the surface stratum (Stratum I). Such a post-structural occupation is indicated by fire-reddening in parts of Stratum I as well as by the occurrence of bone fragments and FCR in this stratum. In addition, practically all of the lithics that have been recovered from this excavation occur within the first five centimeters and are likely to have been deposited after the original depression was abandoned.

Interpretations Based on the Analysis

A number of possible interpretations are available from the excavations. The first interpretation would be a transitory encampment or an animal-processing place of some kind possibly for smoking meat or tanning. The occurrence of some bone fragments might support this. The next interpretation would be a ceremonial or limited use structure such as a menstrual hut. The apparent lack of lithics would support this; however, the occurrence of bone fragments recovered might contradict this according to ethnographic evidence. On the other hand, most bone fragments occurred in the surface levels (Stratum I) so that there may be an insignificant presence of mammal bones in the floor contexts. The depression may also have been used as a short term living area. It is possible that the depression was a mat lodge. Mat lodges generally have very little structure associated with them. Additionally, as this depression is quite shallow (approximately

30 cm), the only way a person could have lived in this depression would be for most of the structure to be built above ground. This could have been accomplished through the use of mats that would then be taken away when the structure was abandoned leaving little or no evidence for a structure, no roof deposits, and very little evidence for a floor.

Figures

Figure 1: Location and excavation units for EHPE 26.

Figure 2: Floor plan of the excavated areas of EHPE 26.

Figure 3: Cross-section of stratigraphic units excavated in EHPE 26.

Figure 1. Location and excavation units for EHPE 26.

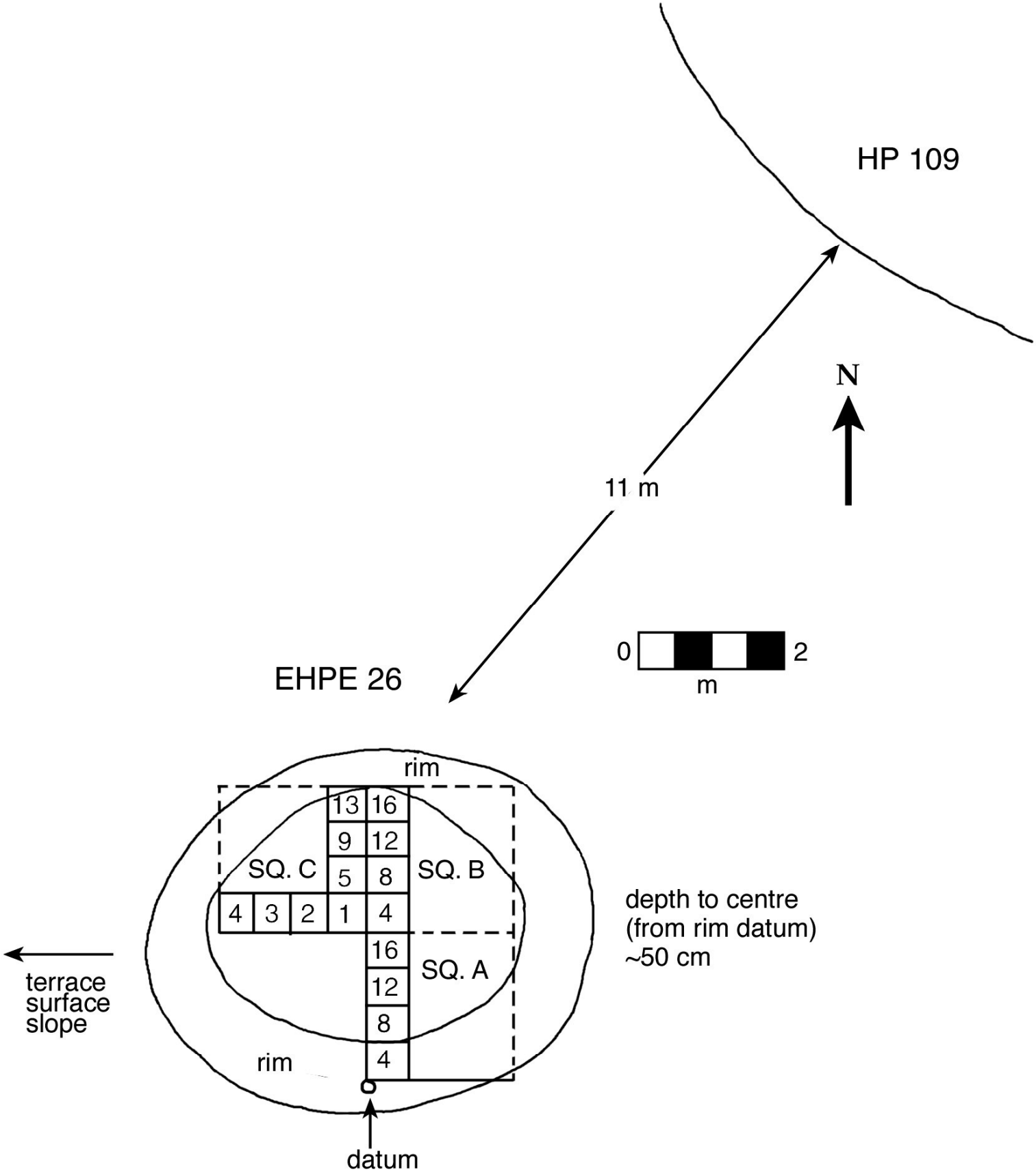


Figure 2: Floor plan of the excavated areas of EHPE 26.

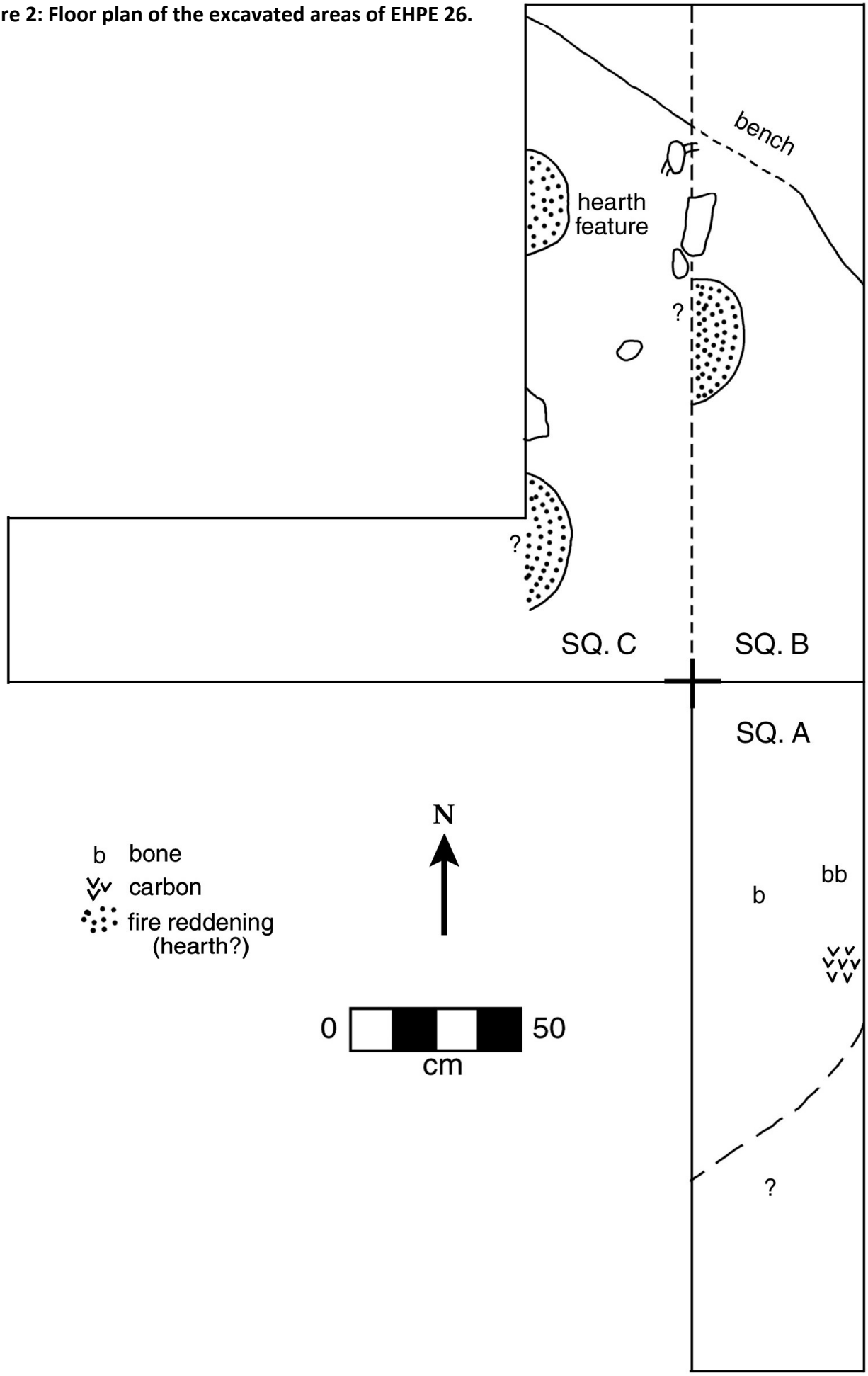
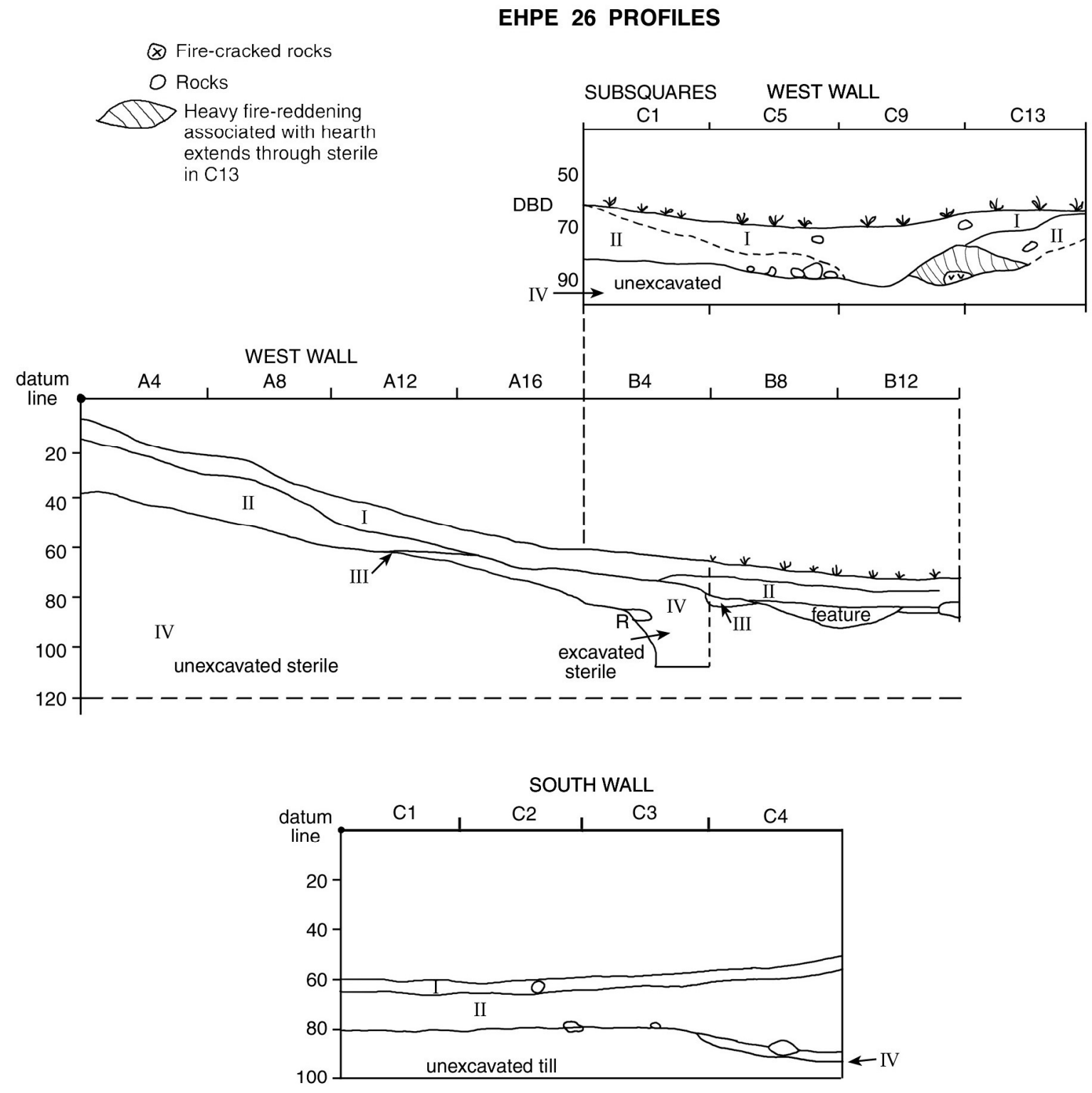


Figure 3: Cross-section of stratigraphic units excavated in EHPE 26.



Excavation Summary for Extra-Housepit Excavation 27

Sara Mossop CousinsExtra-Housepit Excavation 27 (EHPE 27) is a very shallow (4 cm in depth at the center before excavation) depression located just north of the rim of HP 8 and about 3 m east of EHPE 28 (Vol. III, Preface, **Fig. 1**). It is 3 m in diameter and roughly circular. EHPE 27 was partially excavated in 1998 to test its possible function as a roasting pit.

Subsquare 9 in Square A was opened up. At 7 cm below surface the soil was somewhat blackened and there were a few charcoal flecks showing up. There were clear indications of bioturbation (cicada burrows and bodies). The dark soil continued for 25 cm without any cobbles, with few pebbles and no modified artifacts. Some flakes of trachydacite were recovered. A large boulder was encountered at 29 cm below surface. More flakes showed up, and fire-cracked cobbles were found around the large boulder. A piece of utilized block shatter, perhaps a "notch," was also recovered. The pebble concentration and the cobble increased, and more flakes were recovered. Small pieces of charcoal were found, with 4 salmon vertebrae, several mammal bone fragments, and what may be a canine metacarpal or metatarsal, at about 45 cm below surface.

The excavation was halted at 52 cm below surface. Artifacts were still occurring, but it seemed clear that EHPE 27 was a cache pit, or even simply a natural depression in the debris-flow from the rim of HP 8. EHPE 27 was closed without reaching sterile. It may be of interest to return and check the distribution of boulders, cobbles, and FCR, but it does not seem to be a plant roasting pit. The artifacts recovered are of a similar density and distribution to EHPE's 29-31 which appear to have been cache pits associated with HP 1.

Interpretations of Extra-Housepit Excavation 28

Sara Mossop Cousins

Extra-Housepit Excavation 28 (EHPE 28) is a fairly shallow depression (20 cm in depth at the pre-excavation center) located just north of the rim of HP 8, and about 3 meters west of EHPE 27 (Vol. III, Preface, **Fig. 1**). It is roughly square in shape, with a basin shaped bottom. This feature was tested as a potential roasting pit in 1998.

Subsquare 9 of Square A was excavated at what appeared to be the center of the depression. Aeolian deposits contained several lithics, as did the darker layer underneath it. At 20 cm below surface, carbon staining was apparent and some FCR (mostly pebbles), and small pieces of charcoal began showing up. Crushed mammal bone fragments were recovered in the next 10 cm and then a decorated bone haft (broken at one end) was recovered. The haft is about 6 x 2.5 cm and is decorated with incised dots in a pattern of horizontal lines along the two edges (Vol. III, Chap. 2, **Fig. 11**). More trachydacite flakes were recovered below this. A new stratum of yellow-brown sandy silt began at about 28 cm below surface, until an apparent high point in the south-east corner of the feature, perhaps indicating rim material from HP 8. This "rim material" was then mixed with a darker, browner stratum that included FCR, trachydacite and chert flecks, as well as some flakes of charcoal. Subsquare 9 was excavated to 42 cm below surface and was not yet sterile, but in the interest of time and research goals it was closed. It was thought that EHPE 28 represents debris from HP 8. It was not clearly a cache pit, and it did not appear to have a roasting function. Extra Housepit Excavations 30 and 31 were excavated to well over a meter in depth. The salmon, mammal bones, and lithics within them indicated that

they were cache pits. The first 50 cm or so of these features were similar to the matrix and materials in EHPE's 27 and 28. EHPE's 27-31 are all likely cache pits. One useful reason for looking at these features was that their lithics may correspond to the "family" lithics of their associated large housepits (see EHPE's 29-31, and Vol. I, Chap. 16).

Interpretations of Extra-Housepit Excavation 29

Sara Mossop Cousins

Extra-Housepit Excavation 29 (EHPE 29) is one of three roughly circular depressions associated with HP 1 (Vol. III, Chap. 11.1, **Fig. 1**). The surface is approximately 12 cm deep at the center (pre-excavation) and roughly 2 m in diameter. Its northern edge is difficult to distinguish due to the intersection of the rim of HP 1. EHPE 29 was tested as a potential roasting pit in 1998.

Subsquare 9 of Square A was excavated. An initial 8 cm of aeolian deposits were followed by fine darker soil, with very few cobbles or pebbles. Cicada burrows indicated bioturbation, and trachydacite flakes continued to show up along with two small bone fragments and 3 chalcedony flakes. At 26 cm below surface, the soil was significantly rockier, however the artifacts remained similar, with the addition of a retouched trachydacite flake and most of a beaver tooth. Excavation halted at about 40 cm below surface, due to time constraints and lack of any indication of use as a roasting pit. EHPE 29 appears to have been a cache pit, or perhaps a barrow pit that gradually filled in. It was certainly finer and more artifact rich than the sterile pebble and gravel rich till typical of the slope only a few meters away. One of the more potentially interesting aspects of this feature was the presence of pisolite flakes, the "household" material typical of HP 1 (Vol. I, Chap. 16), although there were only three such flakes among the trachydacite remainder.

Excavation Summary for Extra-Housepit Excavation 30

Terry Clouthier

Extra-Housepit Excavation 30 (EHPE 30) is one of three small depressions associated with HP 1 (Vol. III, Preface, **Fig. 1**; and Chap. 11.1, **Fig. 1**). It was excavated to determine its functional relationship to HP 1. Two pisolite flakes excavated from the pit also suggest an association with the housepit, since pisolite is the material of choice in HP 1, and is not as commonly associated with other housepits (Vol. I, Chap. 16).

It was initially suspected that EHPE's 29-31 were roasting pits. However, the excavation of EHPE 30 suggests that this feature was not used for roasting. This has been determined by the near absence of FCR, ash, or charcoal within the feature, whereas if it were a roasting pit, a much greater amount of these should be present. The feature was excavated to a depth of 120 cm below surface level, where sterile glacial till was encountered. The depth and lack of FCR suggests that this feature was in fact a cache or storage pit. EHPE 30 appears to have been used to store fish, as the majority of bones uncovered within the pit were fish bones, with many grouped together at the bottom.

Excavation Summary for Extra-Housepit Excavation 31

Terry Clouthier

Extra-Housepit Excavation 31 (EHPE 31) is one of three small depressions associated with HP 1 (Vol. III, Preface, **Fig. 1**). It was excavated to determine its functional relationship to HP 1. Since no pisolite was recovered from this feature, its association to HP 1 is a result of its proximity to the housepit.

EHPE 31 was initially excavated to determine if it was a roasting pit. However, the near absence of FCR, charcoal, or ash within the pit, suggests that it is a cache pit. Roasting pits usually contain large amounts of ash, charcoal, and FCR. The feature was excavated to a depth of 131 cm below surface level. Sterile till was not encountered at this depth, and it became very hazardous to continue excavating this unit without opening up an additional subsquare. At 131 cm below surface, a charcoal lens was encountered along the bottom, and probably extended into subsquare 12 of the next square to the east. It was not clear what was being stored in this cache pit, as the few faunal remains were relatively evenly distributed between fish, bird, and mammal.

Excavation Summary for Extra-Housepit Excavation 32

Sara Mossop Cousins and Terry Clouthier

Extra-Housepit Excavation 32 (EHPE 32) was partially excavated in 1998 as part of a roasting pit testing program at Keatley. It is small in terms of diameter and depth in comparison to other roasting pits identified at the site to date (**Fig. 1**). It measures approximately 2 m in diameter across the high points of the rim, while other roasting pits at the site have measured up to 8 m in diameter. It is located on a terrace approximately 50 m northeast of HP 115, an historic housepit (Vol. III, Preface, **Fig. 1**). The surface depression of EHPE 32 is approximately 18 cm deep in the center, which is shallower than most other roasting pits measured to date which have ranged from 15-40 cm in depth. The shape of EHPE 36 is roughly circular. The "debris flow" is pronounced along the southwestern edge of the pit and the soil on its surface is darkened and ashy. The rim is poorly defined. The ash and FCR, along with a general lack of lithics on the surface provided a fairly clear indicator that EHPE 32 was a roasting pit. EHPE is the only recognizable feature on this small terrace. Other roasting pits are located about 100-150 m downslope (southwest) of HP 115, however.

Charcoal samples from EHPE 32 have since been dated to 90 and 120 BP. It was expected during excavation that EHPE 32 would fall somewhere in the middle to recent range of the dates of other pits at the site. These range from less than 100 to 1500 years in age. The oldest pits have been large, while the middle range and youngest have been small to medium in size.

The sub-surface characteristics of EHPE 32 also identified it as a plant roasting pit. The pit is approximately 65 cm deep and contains a central group of cobbles about 25 cm below the surface, typical of a roasting pit at

Keatley Creek. The quantity of FCR (up to 90% of the fill), charred plant material and fire-blackening also suggest that it was a plant roasting pit that was used on more than one occasion, as does the hump or "debris flow".

A trachydacite biface and a core were recovered approximately 10 m southwest of EHPE 32. The surface deposits of EHPE were about 6 cm thick and were quite black and ashy. Subsquares 5 and 9 of Square A were tested (**Fig. 1**). A trachydacite flake was recovered from the surface deposits of Subsquare 9. Occasional charcoal flecks and small FCR were replaced by an almost solid "pavement" of fire-cracked, reddened and blackened cobbles, making up 80-90% of the matrix. They appeared to be more blackened on the bottom and extended downwards for at least 10 cm. The soil was very black under the FCR and several soil samples were taken, as were samples of a few pieces of charred plant material that did not appear to be woody.

At 25 cm below the surface, a group of large, fire-cracked cobbles emerged (**Fig. 2**). The cobbles in Square 5, in fact, appear to be reddened on the inside of the "circle". The cobbles seem to be in two rings, perhaps indicating re-use of the pit. The dates may also suggest this, although they are not separated enough to be sure, given the margin of error.

Below the cobbles in Subsquare 5 there was an area of compact, very carbonized soil. After a few centimetres of charcoal-rich matrix, there was about 15 cm of less-charcoal-rich matrix and then another "pavement" of small, fire-cracked cobbles at 50 cm BS. A probable hammerstone, perhaps used for processing roots, was recovered within the "pavement" in Subsquare 9. This was the only smooth stone in the entire pit. It was fist-sized and pitted at one end. Several pieces of charcoal were set aside for identification and several flotation samples were taken below this layer of fire-cracked cobbles.

At 60 cm below surface, in the southwest corner of Subsquare 5, glacial till began to appear, sloping down to the northeast and into Subsquare 9 at 70 cm. Large pieces of charcoal were removed from the bottom for dating. Till was encountered across both units, and there was an absence of fire-cracked rock in the till.

Use

"Root" plants that may have been cooked in this pit include Wild Onion (*Allium cernuum*), Mariposa Lily (*Calochortus macrcarpus*) and Desert Parsley (*Lomatium spp*.), all of which grow on the site today. Other plants that may have been available and which do not require a lot of cooking to make them palatable, according to Turner (1997) and Pokotylo and Froese (1983), include *Yellowbells (Fritillaria pudica*), Wild Carrot (*Lomatium macrocarpum*), Chocolate *Tips (Lomatium dissectum*), Bitter-root (*Lewisia rediviva*), and Wild Thistle (*Cirsium edule*). Prickly Pear (*Opuntia fragilis*), lichens and various berry species were also occasionally pit-cooked (Pokotylo and Froese 1983:131). Remains of two bulbs (unidentified as to species) were recovered from flotation samples as well as 6 unidentifiable seeds (1 probable *Ericaceae*), and conifer needles.

Meat and fish were also pit-cooked. No bones have been recovered from any of the roasting pits excavated at the Keatley site to date, but the flesh may have been removed from the bones prior to roasting (Peters 1999). Meat and fish were usually cooked with plant materials as well (Pokotylo and Froese 1983, Peters 1999).

The cooking time was probably not long, based on the size of the fire-cracked cobbles, so a species like Balsamroot (*Balsamorrhiza sagittata*) which required days of cooking is not likely to have been cooked in this pit.

Conclusion

It appears that EHPE 32 was used, and probably re-used at least several times, for plant roasting. There has been no animal bone found so far and at least some of the charred material does not appear to be wood.

References

Peters, Desmond

1999 Personal Communication. Desmond Peters is an elder and past chief of the Ts'kw'aylaxw (Pavilion Band).

Pokotylo, David and Patricia Froese

1983 Archaeological Evidence for Prehistoric Root Gathering on the Southern Interior Plateau of British Columbia. *Canadian Journal of Archaeology* 7(2): 127-158.

Turner, Nancy

1997 *Food Plants of the Interior First Peoples*. Royal British Columbia Museum Handbook, Victoria.

Figures

Figure 1: Extra-Housepit Excavation 32 general pre-excavation view, showing Square A, Subsquares 5 and 9 and excavated floor plan.

Figure 2: Extra-Housepit Excavation 32 stratigraphic cross-section showing large cobble feature at 25-30 cm BS.

Figure 1: Extra-Housepit Excavation 32 general pre-excavation view, showing Square A, Subsquares 5 and 9 and excavated floor plan.

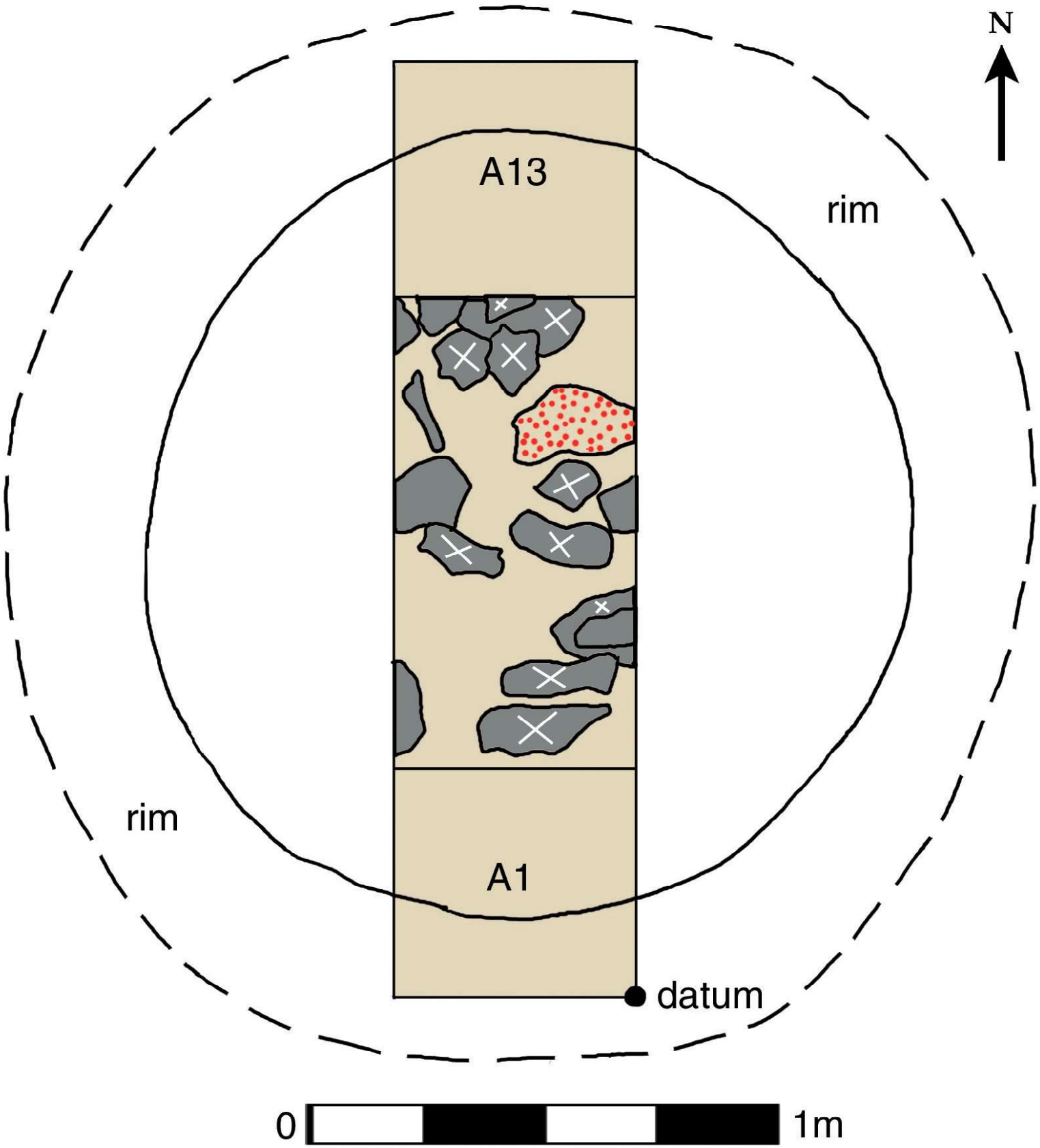
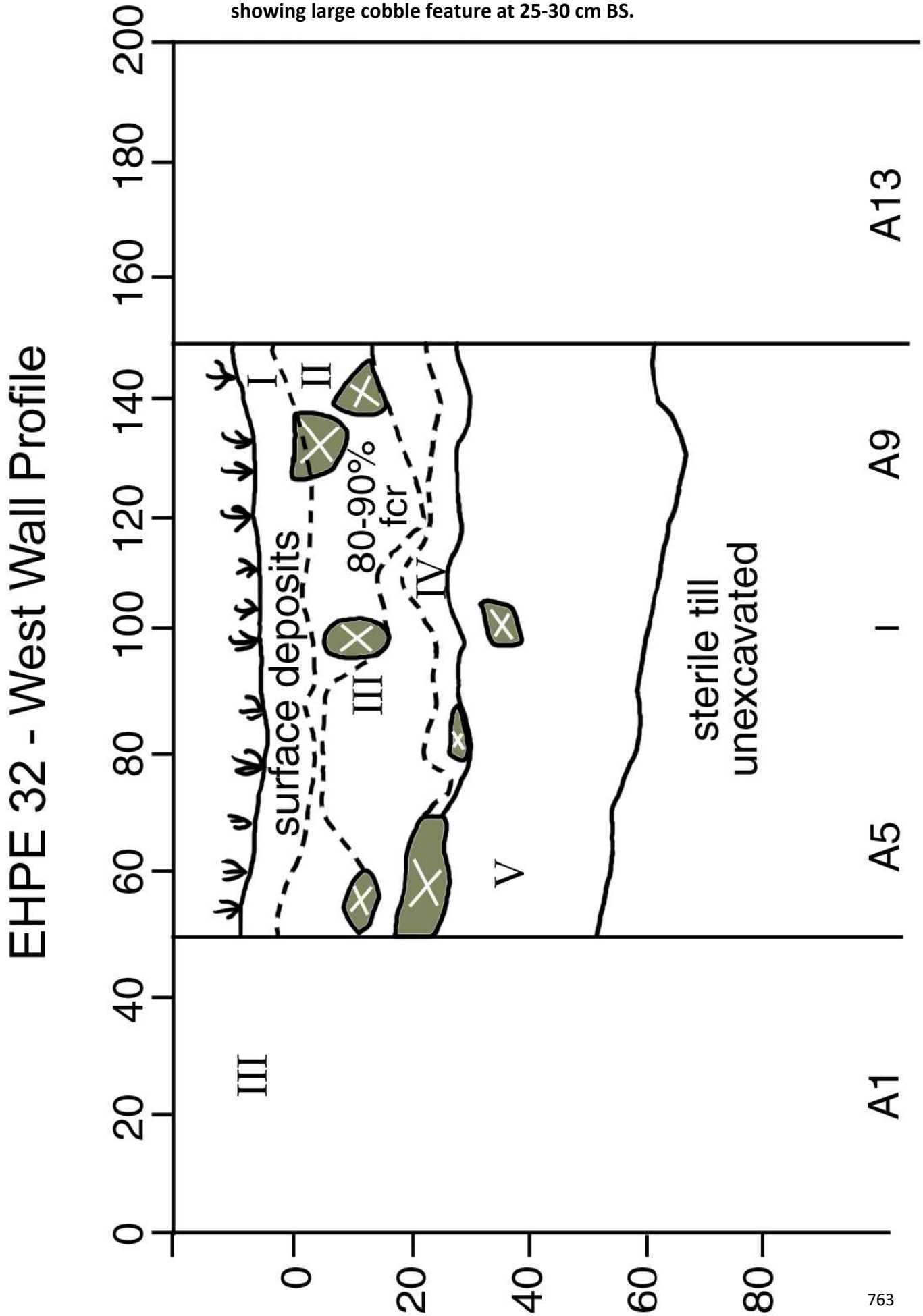


Figure 2: Extra-Housepit Excavation 32 stratigraphic cross-section showing large cobble feature at 25-30 cm BS.



Excavation Summary for Extra Housepit Excavation 33

Sara Mossop Cousins

Extra Housepit Excavation 33 (EHPE 33) was excavated as part of a roasting pit testing program at Keatley Creek site in 1998 and 1999. It is one of the largest roasting pits identified at the site to date. It measures approximately 7.5 m in diameter across the high points of the rim, while other roasting pits at the site have measured between 2 m - 8 m in diameter. It is located on a terrace to the south of the main village site (Vol. III, Preface, **Fig. 1**). Housepits 9 and 107 are located approximately 60 meters to the north-west. The surface depression is 40 cm in depth at the center and roughly oval in shape. The "debris flow", consisting of a hump of ashy, darkened soil and small pieces of fire-cracked rock, is located along the west side of the poorly-defined rim (**Fig. 1**). It is one of the oldest roasting pits tested at the site to date, with a C14 date of 1540 BP. This places its use squarely within the main Plateau occupation at the site. The high concentration of fire-blackened soil, charred plant material and fire-cracked rock, the large, fire-cracked cobble and boulder accumulation near the bottom of the pit, and the complete lack of bone found during the excavation of EHPE 33, clearly indicate that it was a plant roasting pit.

Excavation and Ground Survey Summary

A non-intensive survey of the ground surface was completed in a 5 m radius of the pit. The artifacts recovered included a trachydacite Kamloops point (which is presumably not associated given the early date of EHPE 33),

several trachydacite flakes (including a small pressure flake and several battered flakes) and a small scatter of 18 flakes, including one made from a multi-colored chert.

A 2.5 m by 50 cm trench was excavated in an east to west direction from near the center of the pit to its western rim (Subsquares A13, A14, A15, A16 and B13, **Fig. 1**). This trench uncovered a portion of a large fire-cracked cobble and boulder feature (Feature 1) located in the center of the pit at approximately 30 -50 cm below the ground surface (**Fig. 2**). The bottom of the pit at the center was located approximately 70 cm below the surface. The pit appears to have been basin-shaped, based on the slope of the sterile till near its western edge (**Fig. 2**.). Large amounts of charred wood were recovered from the edge of the cobble feature, some of which was retained for dating and identification. Soil samples were removed for flotation from above, beside, within and below the feature. No bone items and very few lithics were recovered.

A 50 cm by 50 cm subsquare was also excavated in the debris flow hump (Ssq. C13, **Fig. 2**). It was anticipated that the hump would contain charred plant material discarded with the ash and other material removed when the pit was re-opened and cleaned out following cooking events. This subsquare exhibited a high concentration of ash as well as some charred plant material. Several color and textural changes in the ashy deposits may suggest that there was more than one dumping event. Several soil samples were removed for flotation.

Use

The large cobble and boulder feature that was found in the center of the pit is thought to have been the main heating element of the roasting pit. The size of the rocks used, and the size of the pit itself, may suggest that a lengthy cooking time was required, that a very large amount of material was being cooked, or both. There are ethnographic accounts of very large amounts of plant foods being pit roasted (Teit 1900, in Pokotylo and Froese 1983:130) and this may have occurred in prehistory as well. Certain plants are known to have required a lot of cooking to make them edible. For example, Balsamroot (*Balsamorrhiza sagittata*) is noted to have required a cooking time of several days (Dawson 1891, and Teit 1900, in Pokotylo and Froese 1983:131).

There is no Balsamroot on the site or near to it today, however. This may be a result of cattle-grazing or other post-occupational factors. Wild onion (*Allium cernuum*) is found at the Keatley site today on the edges of the eastern slopes but wild onion does not require much cooking to make it palatable (Turner 1997:62). Mariposa Lily (*Calochortus macrocarpus*) and Desert Parsley (*Lomatium* spp.) are also found in the site area today, but again, are not known to have required a particularly lengthy cooking time (Turner 1997:65, 85). Other edible root plants that may have grown near the village site on dry, open slopes and in wooded areas include Yellowbells (*Fritillaria pudica*), Wild Carrot (*Lomatium macrocarpum*), Chocolate Tips (*Lomatium dissectum*), Bitter-root (*Lewisia rediviva*) or Wild Thistle (*Cirsium edule*) (Pokotylo and Froese 1983:130). Bulbous plant tissues (unidentifiable as to species), plus 6 seeds (5 *Ericaceae* sp.; 1 *Similacina racemosa*) and some conifer needles were recovered from the flotation samples.

Meat was not normally pit roasted for more than a few hours, and neither was fish (Peters 1999), which suggests that this pit was not used for cooking meat or fish. In addition, no bones have been recovered from EHPE 33 to date. However, meat, berries and lichen were occasionally prepared in cooking pits to flavour bland-tasting roots (Steedman 1930, Teit 1900, Turner, Bouchard and Kennedy 1980, in Pokotylo and Froese 1983:131).

It seems clear that vegetable rather than animal material was being roasted, that the quantity of material was large and/or that the cooking time was lengthy, and that the roasting occurred during the main Plateau occupation of the village. It is also assumed that EHPE 33 was used more than once, given the concentration of fire-blackened soil and fire-cracked rock, and the large debris rim. Other roasting pits tested at the site have demonstrated lower concentrations of these characteristics, although this may also be a result of their smaller size. Depositional processes and the resulting stratigraphy of roasting pits are not well understood at this point and EHPE 33 has not been fully excavated.

Stratigraphic Details

Subsquares A13-B13

The south wall of the excavation trench is profiled in **Figure 2**. The trench passed through the centre of the pit and continued to its western edge.

Stratum I included the soil just below the ground surface down to the cobble feature (0-30 cm depth below surface). It was made up of fire-blackened, dark brown silty loam with small fire-cracked pebbles and flakes of charred wood. The percentage of fire-cracked pebbles rapidly increased

from 10 to 50%, with as much as 25% in the 4-6 cm size range. A few fire-cracked cobbles were located in the first 10 cm level and formed up to 20% of the matrix. Charred wood made up between 0 and 5 %. A large piece of charred wood was recovered from Subsquares 13 and 14 in Square A at approximately 24 cm below the ground surface. This wood was not considered to be root material, based on its flattened shape, its deteriorated state, and its alignment in the ground. This wood was put aside for dating purposes. Subsquare 16 in Square A was located between the cobble feature found in the centre of the pit and the edge of the rim. This subsquare contained a much higher percentage of the 4-6 cm size fire-cracked pebbles, fire-cracked cobbles and charred wood than the other subsquares. This may suggest that the charred wood and other materials were pushed aside from the centre of the pit following roasting in order to remove the cooked plant material. The only lithic artifacts recovered from the pit were located in Stratum I and are limited to several trachydacite flakes, which appear to be accidental inclusions and are likely waste flakes.

Stratum II included the large fire-cracked cobble and boulder feature in the center of the pit (31-50 cm depth below surface). This was referred to as Feature 1 (**Fig. 2**). The large cobbles made up approximately 70% of the matrix at this point. The surrounding soil was especially fire-blackened and charcoal-rich. A few large fragments of charred wood were located just above it, but most of the charred wood came from outside of the feature in Subsquare A16, as discussed above.

Stratum III was located below the large cobble layer (at 51-70 cm depth below surface) and was very similar in content and color to Stratum I, with a slightly lower concentration of fire-cracked rock and charred wood.

No artifacts were recovered from this stratum, other than the fire-cracked rock.

The sterile, yellow-brown, compact gravely till located at the bottom of the pit (70 cm depth BS) was referred to as Stratum IV in the wall profile. This till is assumed to be sterile and was not excavated beyond the first two centimetres, which were sterile.

Subsquares C13

The south wall of the excavation unit is profiled in **Figure 2**. This subsquare was placed in the debris flow. It was not excavated to sterile due to time constraints.

Stratum I consisted of grey-brown sandy loam mixed with ash, small flecks of charcoal and small fire-cracked pebbles. The average percentage of pebbles varied from 10% to 25%. As the excavation progressed, differences in color and compactness were observed that might suggest two separate types of debris in the two halves of the unit. At 20 cm below the ground surface fire-cracked pebbles began to be recovered that were coated in a white substance, which may have been ash. Three trachydacite flakes were recovered from Stratum I, all of which appeared to be waste flakes.

Stratum II consisted of the layer of whitened pebbles that can clearly be seen in the wall profile. The percentage of charred wood increased from approximately 0.5% to 1%. The percentage of ash in the soil also increased. At approximately 33 cm below the ground surface the soil became more sandy and light brown in color, rather than grey-brown. This change does not show in the wall profile and was not assigned a stratum of its own.

Stratum III began at approximately 40 cm below the ground surface and consisted of nearly pure, very fine ash. The percentages of fire-cracked pebbles and charred wood decreased to 20% and 0.5%, respectively. The excavation was closed at this point, due to time constraints.

Discussion and Conclusions

Extra Housepit Excavation 33 is quite large in comparison to roasting pits located at Hat Creek (Pokotylo and Froese 1983) and Scheidam Flats (Peacock 1999); it is also large for a roasting pit at Keatley Creek. It is large in terms of both diameter and depth. It is also old. With a carbon date of 1540 BP it is associated with the main Plateau occupation at the Keatley site and it is contemporaneous with the larger roasting pits at Hat Creek and Scheidam Flats. Together with Extra Housepit Excavation 20, which is also more than 1500 years old and measures approximately 8 metres in diameter, EHPE 33 contributes to the current theory (Pokotylo and Froese 1983, Peacock 1999) that these larger roasting pits were used when the population groups were larger and more complex. It also demonstrates again that the availability of large amounts of plant foods, as well as salmon, may have played a part in allowing these groups to form.

Extra Housepit Excavation 33 appears to have been used on more than one occasion, based on its large debris hump, the apparent lenses of ashy soil within that hump, and the high concentration of fire-cracked rock within the pit itself. It is not yet clear what was being roasted in the pit, but it is fairly clear that it was plant material, rather than animal, based on the size of the pit, its large cooking elements, and the lack of bone artifacts recovered.

References

Peacock, Sandy

1999 Personal communication.

Peters, Desmond Sr.

1999 Personal communication.

Pokotylo, David and Patricia Froese

1983 Archaeological Evidence for Prehistoric Root Gathering on the Southern Interior Plateau of British Columbia: A Case Study from Upper Hat Creek Valley. *Canadian Journal of Archaeology* 7(2): 127-157.

Turner, Nancy

1997 *Food Plants of Interior First Peoples*, Royal British Columbia Museum Handbook, UBC Press, Vancouver.

Figures

Figure 1: Extra-Housepit Excavation 33 showing excavation units and surface cross-sections.

Figure 2: Extra-Housepit Excavation 33 floor plan and profile of south wall of excavation trench.

Figure 1: Extra-Housepit Excavation 33 showing excavation units and surface cross-sections.

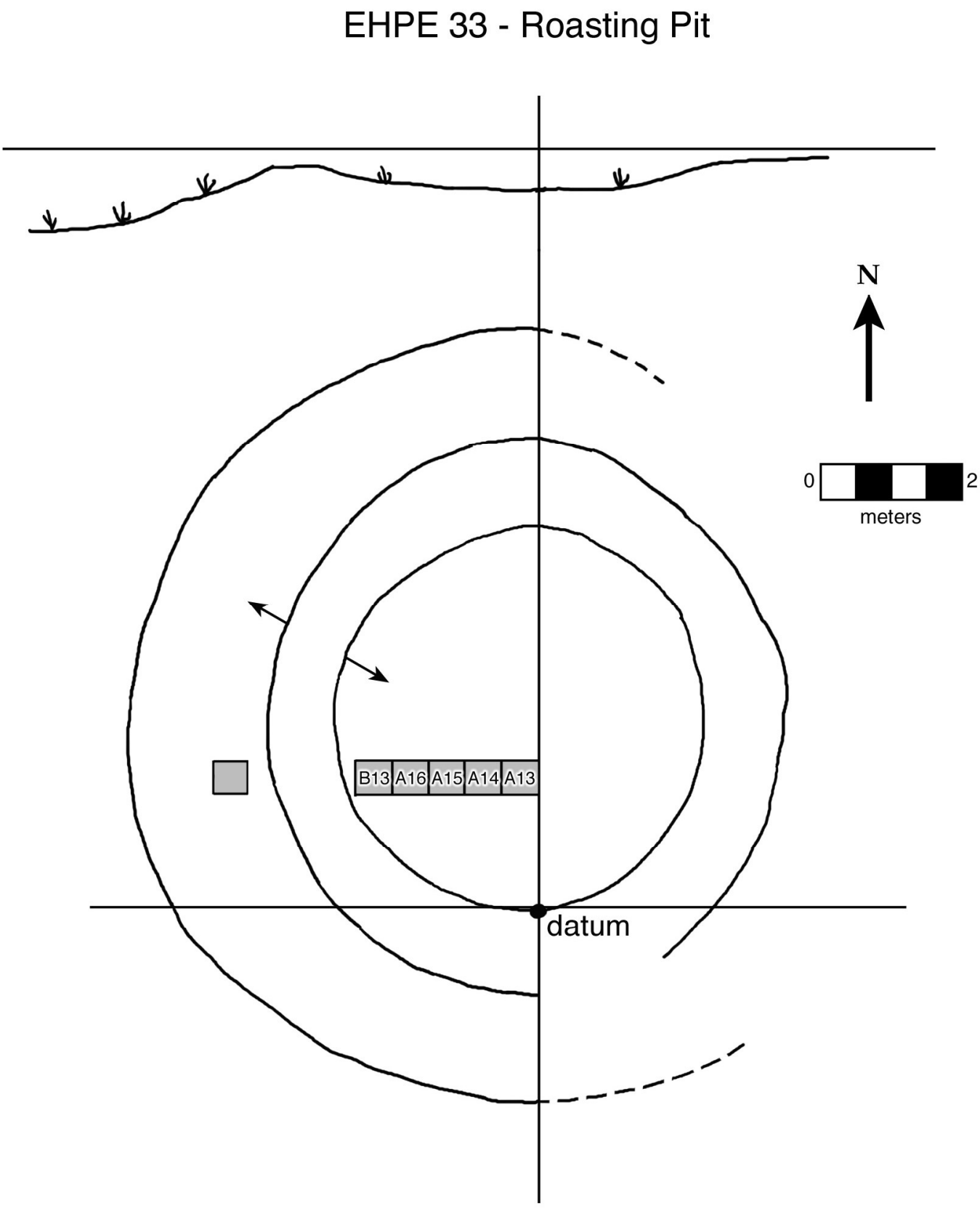
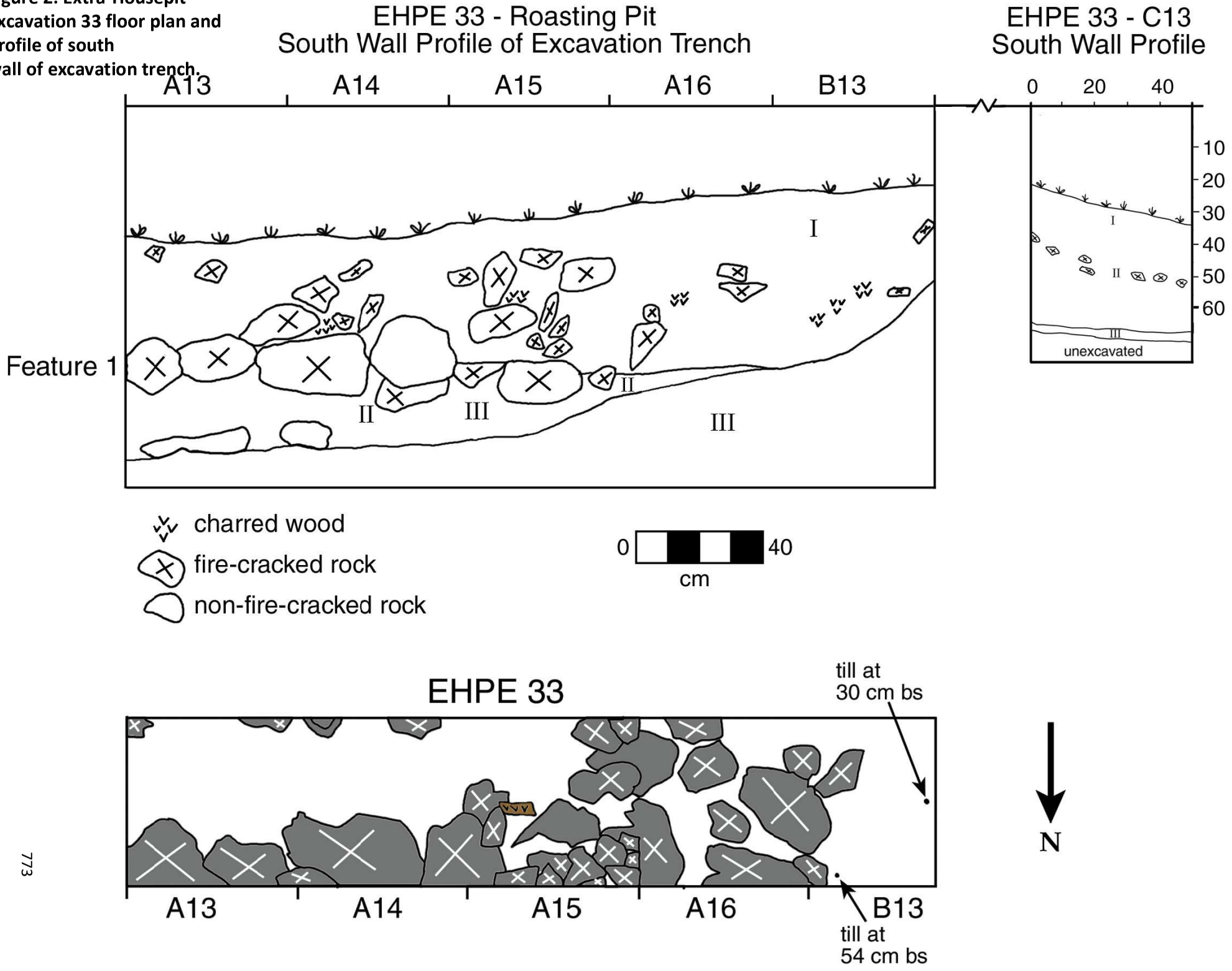


Figure 2: Extra-Housepit Excavation 33 floor plan and profile of south wall of excavation trench.



Excavation Summary for Extra-Housepit Excavation 34

Terry Clouthier and Catherine Adler

Extra-Housepit Excavation 34 (EHPE 34) is a small shallow depression, with a diameter of 1.25 m, and a depth of approximately 35 cm. It is located on the terrace slope, 45 m south of HP 108 (This Volume, Preface, Fig. 1), and has been dated to 120 BP.

Two Subsquares (4 and 8) were excavated through the center of the small circular depression, uncovering four clearly defined strata:

- Stratum I: Surface - tan coloured gravely loam with modern organics;

- Stratum II: Orange/brown gravely loam with charcoal flecks. One basalt flake fragment was also recovered at this level;

- Stratum III: Black charcoal rich layer with some carbon stained gravely loam. A great deal of FCR ranging in size from gravel to large cobbles;

- Stratum IV: Orange/brown gravely loam with occasional charcoal flecks.

The feature is clearly a roasting pit consisting of several large cobbles resting on fire-reddened ash and till. Above the large cobbles is a layer of smaller FCR and carbon. Above this is a deposit of fire-reddened loam with charcoal flecks. The west wall of Subsquare 8 appears to be over the center of the feature.

Conclusions

EHPE 34 appears to be the result of a single roasting "event". A shallow pit was dug (ca. 30-40cm deep x 1.0-1.5 m in diameter). Several large cobble/small boulders were placed in the center of the pit, possibly with small amounts of wood beneath them. A fire was kindled above them, and additional rocks (smaller cobbles) were placed around, in, or on top of the fire. Presumably something was placed in the pit to be roasted, once the rocks were hot. What this would have been is unknown. The pit may then have been covered with earth, or alternatively a large fire may have been built on top of the pit full of rocks. Ultimately, it appears that whatever was cooked was removed from the pit, possibly disturbing many of the smaller rocks but without disturbing the larger cobbles/boulders. This is inferred on the basis of the circular arrangement of the large cobbles and the multitude of large chunks of charcoal found immediately above them, and between them, but not under them.

Excavation Summary for Extra-Housepit Excavation 35

Sara Mossop Cousins

Extra-Housepit Excavation 35 (EHPE 35) was partially excavated in 1999 as part of a roasting pit testing program at the Keatley Creek. It is medium-sized in terms of diameter in comparison to other roasting pits identified at the site to date. It measures approximately 4.5 m in diameter across the high points of the rim, while other roasting pits at the site have measured between 2 -8 m in diameter. It is located on a terrace approximately 55 m south of HP 108 (Vol. III, Preface, **Fig. 1**). The surface depression of Extra-Housepit Excavation 35 is shallow. Other pit surface depressions have ranged from 15-40 cm in depth. The shape of EHPE 35 is roughly oval (**Fig. 1)**. The "debris flow" of darkened, ashy soil, is most developed along the north-western edge of the pit. The rim is poorly defined. Based on previous survey and excavations at the site, EHPE 35 was clearly a plant roasting pit. EHPE 35 is one of several roasting pits located on the large south terrace above the creek.

Charcoal samples from EHPE 35 have been dated to 1460 and 1530 BP. It was expected from the surface size that EHPE 35 would fall somewhere in the middle to older range of the dates of other pits at the site. These range from less than 100 to 1500 years in age. The oldest pits have been large, while the middle range and youngest have been small to medium in size.

The sub-surface characteristics of EHPE 35 also identified it as a plant roasting pit. The pit is approximately 50 cm deep and contains a central group of cobbles 29-40 cm below the surface, which is typical of a roasting pit. The quantity of fire-cracked rock (up to 30% of the fill), charred plant material and fire-blackening also suggest that it was a plant roasting pit that

was used on more than one occasion, as does the accumulated "debris flow". The pit appeared basin-shaped as can be seen in the wall profile (**Fig. 2**).

Excavation Summary

Subsquares 5, 9, and 13 of Square A were tested (**Fig. 1**). The surrounding surface was also surveyed for lithics, to 5 m beyond the rim, in all directions. Surface finds included 6 trachydacite flakes, including a pressure flake and a retouched flake, and a small trachydacite core.

Stratum I:

0-10 cm below surface: The surface deposits of EHPE were about 10 cm thick and were dark brown, silty loam with a few fire-cracked pebbles and little ash or charcoal. A small flake of unknown material, and a trachydacite flake, were recovered from the surface deposits of Subsquare 13.

Stratum II:

11-25 cm below surface: Soil is black with increasing FCR (20-30% of matrix), flecks of wood charcoal, wood charcoal pieces, (charred material 5% of matrix), and some trachydacite flakes. A flotation sample was taken.

Feature I:

26-30 cm below surface: This is a fire-cracked small-cobble feature (**Fig. 2**), with blackened soil and charred wood. A flotation sample was taken.

Feature II (Stratum III)

31-40 cm below surface: This is a fire-cracked large-cobble feature (**Fig. 2**), surrounded by large pieces of charred wood. Some pieces of wood were retained for dating and a flotation sample was taken. Large FCR consisted of up to 75% of the black matrix.

Stratum IV

41-46 cm below surface: No cobbles, 12% FCR, 0.5% charcoal. Excavated to till. Fire-reddening existed at the bottom of Subsquare 9.

Use

"Root" plants that may have been cooked in this pit include Wild Onion (*Allium cernuum*), Mariposa Lily (*Calochortus macrcarpus*) and Desert Parsley (*Lomatium spp*.), all of which grow on the site today. Other plants that may have been available and which do not require a great deal of cooking to make them palatable, according to Turner (1997) and Pokotylo and Froese (1983), include *Yellowbells (Fritillaria pudica*), Wild Carrot (*Lomatium macrocarpum*), Chocolate *Tips (Lomatium dissectum*), Bitter-root (*Lewisia rediviva*), and Wild Thistle (*Cirsium edule*). Prickly Pear (*Opuntia fragilis*), lichens and various berry species were also occasionally pit-cooked (Pokotylo and Froese 1983:131). No identifiable seeds or geophyte remains were recovered from this roasting pit.

Meat and fish were also pit-cooked. No bones have been recovered from any of the roasting pits excavated at the Keatley site to date, but the flesh may have been removed from the bones prior to roasting (Peters 1999). Meat and fish were usually cooked with plant materials as well (Pokotylo and Froese 1983, Peters 1999).

The cooking time was probably not long, based on the size of the fire-cracked cobbles, so a species like Balsamroot (*Balsamorrhiza sagittata*) which required days of cooking is not likely to have been cooked in this pit.

Conclusion

It appears that EHPE 35 was used, and probably re-used at least several times, for plant roasting. There has been no animal bone found so far and at least some of the charred material does not appear to be wood.

References

Peters, Desmond

1999 Personal Communication. Desmond Peters is an elder and past chief of the Ts'kw'aylaxw (Pavilion Band).

Pokotylo, David and Patricia Froese

1983 Archaeological Evidence for Prehistoric Root Gathering on the Southern Interior Plateau of British Columbia. *Canadian Journal of Archaeology* 7(2): 127-158.

Turner, Nancy

1997 *Food Plants of the Interior First Peoples*. Royal British Columbia Museum Handbook, Victoria.

Figures

Figure 1: Extra-Housepit Excavation 35 surface view and excavation unit layout before excavation.

Figure 2: Extra-Housepit Excavation 35 profile of east wall of excavation trench and floor plan showing locations of fire-cracked rocks.

Figure 1: Extra-Housepit Excavation 35 surface view and excavation unit layout before excavation.

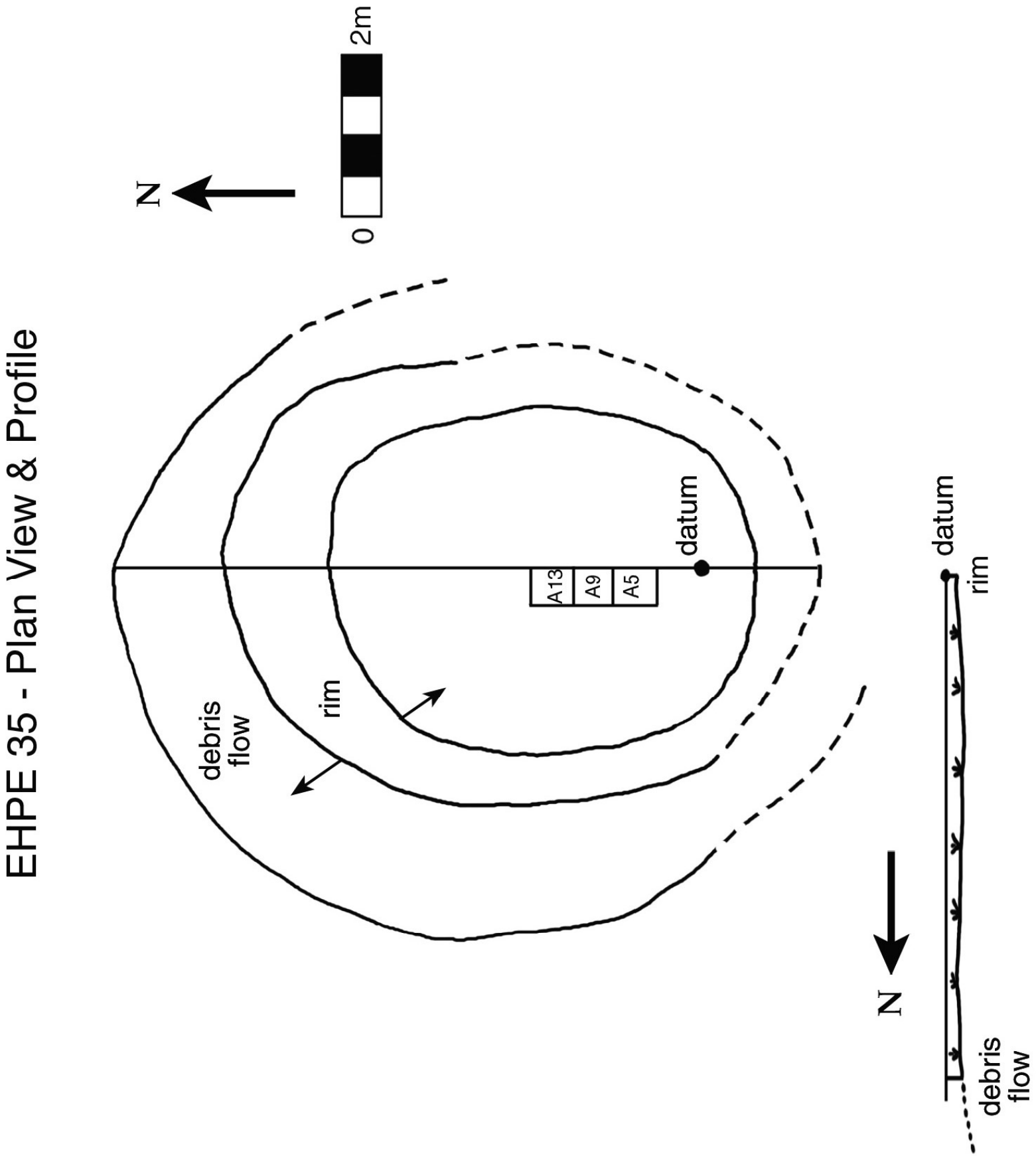
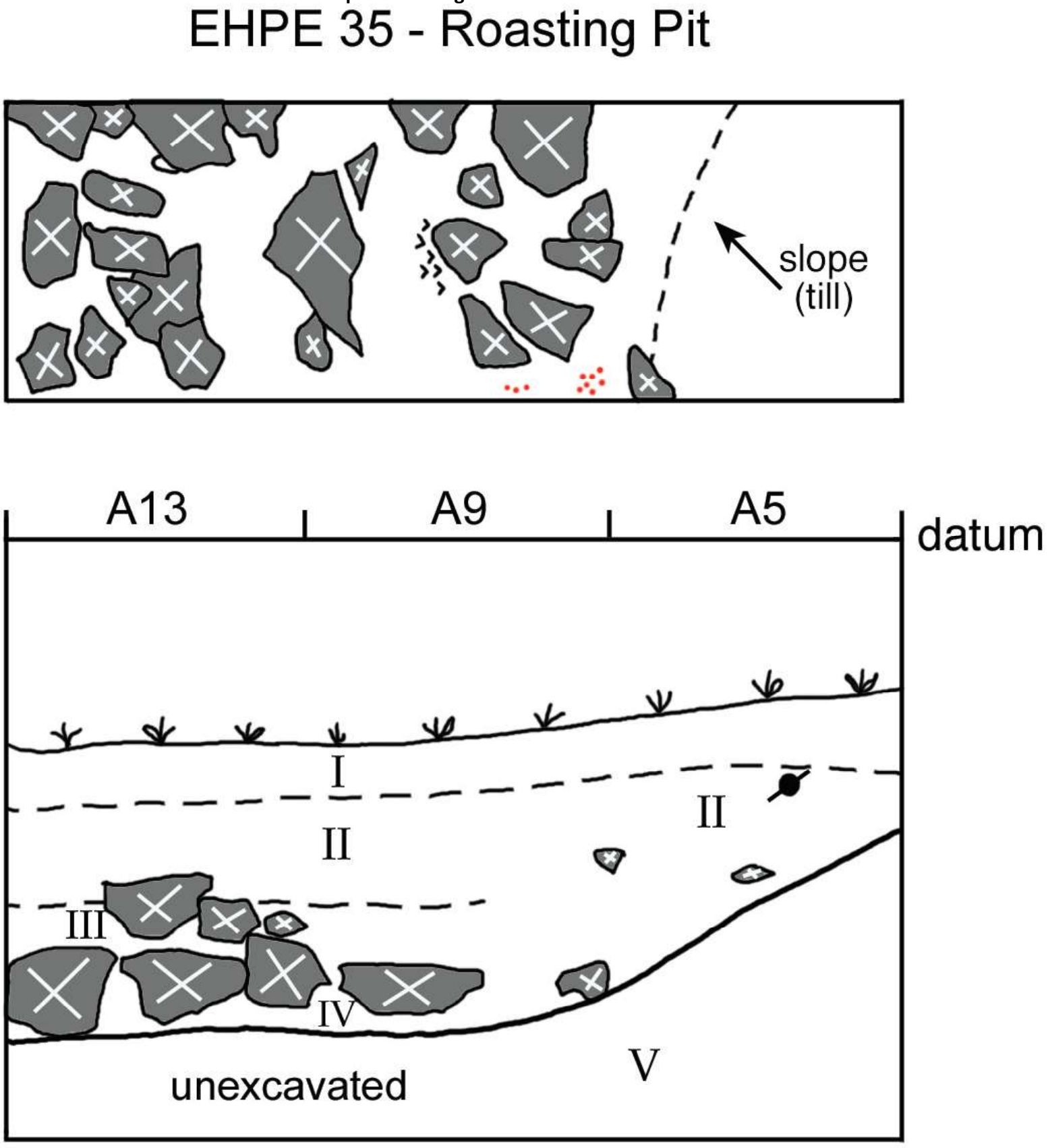


Figure 2: Extra-Housepit Excavation 35 profile of east wall of excavation trench and floor plan showing locations of fire-cracked rocks.



Excavation Summary for Extra-Housepit Excavation 36

Sara Mossop Cousins

Extra-Housepit Excavation 36 (EHPE 36) was partially excavated in 1999 as part of a roasting pit testing program at Keatley Creek. It is medium-sized in terms of diameter and depth in comparison to other roasting pits identified at the site to date. It measures approximately 4.5 m in diameter across the high points of the rim, while other roasting pits at the site have measured between 2-8 m in diameter. It is located on a terrace approximately 60 m north of HP's 9 and 107 (Vol. III, Preface, **Fig. 1**). Several other roasting pits of various sizes have been identified on this terrace, although they have not been tested at this point. The surface depression of EHPE 36 is approximately 15 cm deep in the center, which is shallower than most other pits measured to date. Other pit surface depressions have ranged from 15-40 cm in depth. The shape of EHPE 36 is roughly oval and it is bisected by a horse trail running north-south along its eastern edge (**Fig. 1)**. The "debris flow" is pronounced along the southwestern edge of the pit and the soil on its surface is darkened and ashy. The eastern rim is poorly defined, due in part to the horse trail noted above. EHPE 36 has all of the surface characteristics of a Keatley Creek roasting pit. Charcoal samples from EHPE 36 have been dated to 870 and 770 BP

The sub-surface characteristics of EHPE 36 also identify it as a plant roasting pit. The pit is approximately knee-deep and contains a central group of large cobbles near the bottom, which is typical of a roasting pit. The quantity of fire-cracked rock, charred plant material and fire-blackening also suggest that it was a plant roasting pit that was used on more than one occasion. It may be superimposed over an earlier pit, as well, a characteristic

that has not been observed in other roasting pits at the site. This was suggested by the presence of several different strata below the first cobble layer, including a possible second cobble layer, and by the fact that sterility was not reached in the center of the pit. Due to time constraints during the excavation, this has not been determined.

Excavation and Ground Survey Summary

A non-intensive survey of the ground surface was completed in a 5 meter radius of the pit. No artifacts were recovered. This was unusual. Most pits have had a number of waste flakes and even tools on the surrounding ground surface. Other areas of the terrace surface were littered with lithic artifacts.

A 1.5 m by 50 cm trench was excavated in a north to south direction from near the center of the pit to its southern rim (Ssq.'s A5, A9 and A13; see **Fig. 1**). This trench uncovered a portion of a fire-cracked cobble feature located in the center of the pit located approximately 30-35 cm below the ground surface. The bottom of the pit was unclear and a second pit may be underneath. In Subsquare A9 sterile till was encountered at 40 cm below the surface but in Subsquare A13 several more layers were uncovered to a depth of 65 cm below the surface. A second cobble feature may have been found, and perhaps also evidence of a third pit, but the excavation was not completed to sterile in all areas. Extra-Housepit Excavation 36 appears to have been basin-shaped, based on the slope of the sterile till near its southern edge (**Fig. 3**). A fair amount of charred wood was recovered and several samples were retained for dating purposes. Samples of charcoal from what may be non-woody plants were also retained for identification purposes. Four root skin fragments may be from *Lomatium* roots. Several

flotation samples were taken from various strata, including from within the cobble feature. Very few lithics and no bone artifacts were recovered.

Use

The cobble feature found in the centre of EHPE 36 is thought to have been the main heating element of the roasting pit. The cobbles that made up the feature were not particularly large, however, which may suggest that a lengthy cooking time was not required. It is possible that larger cobbles were removed when the food was removed, but very large cobbles have been left in other pits at the site.

"Root" plants that may have been cooked in this pit include Wild Onion (*Allium cernuum*), Mariposa Lily (*Calochortus macrcarpus*) and Desert Parsley (*Lomatium spp*.), all of which grow on the site today. Other plants that may have been available and which do not require a lot of cooking to make them palatable, according to Turner (1997) and Pokotylo and Froese (1983), include *Yellowbells (Fritillaria pudica*), Wild Carrot (*Lomatium macrocarpum*), Chocolate *Tips (Lomatium dissectum*), Bitter-root (*Lewisia rediviva*), and Wild Thistle (*Cirsium edule*). Prickly Pear (*Opuntia fragilis*), lichens and various berry species were also occasionally pit-cooked (Pokotylo and Froese 1983:131). Root skin fragments, tentatively identified as *Lomatium sp*., have been recovered from flotation samples.

Meat and fish were also pit-cooked. No bones have been recovered from any of the roasting pits excavated at the Keatley site to date, but the flesh may have been removed from the bones prior to roasting (Peters 1999). Meat and fish were usually cooked with plant materials as well (Pokotylo and Froese 1983, Peters 1999).

It seems clear that plant materials were roasted based on the amount of charred vegetable material, perhaps along with meat or fish. The cooking time was probably not long, based on the size of the fire-cracked cobbles, so a species like Balsamroot (*Balsamorrhiza sagittata*) which required days of cooking is not likely to have been cooked in this pit.

Stratigraphic Details

The west wall of the excavation trench is profiled in **Figure 2**. The trench began at the centre of the pit and continued to its southern edge.

Stratum I included the soil just below the ground surface to approximately 10-15 cm below surface. It was made up of fire-darkened, dark brown silty loam with fire-cracked pebbles and small flecks of charred wood. The percentage of fire-cracked pebbles increased from 15-20%, with approximately 5% falling in the 4-6cm size. A patch of fire-reddening was identified in Subsquare A9 at about 10 cm BS. The percentage of charred wood and fire-cracked rock increased over the last three centimetres of the stratum. One small trachydacite flake was recovered. It is probably an accidental inclusion.

Stratum II included soil that was much darker in color due to its charcoal content. Stratum II included soil from between 16 and 25 cm below the ground surface. Stratum II was not found in Subsquare A5. Larger pieces of charred material were recovered, a number of which were retained for carbon dating and for identification. Approximately 2% of the matrix consisted of charred material. The percentage of fire-cracked rock increased to 25%, with approximately 10% falling in the 4-6 cm size. A flotation sample was taken from approximately 17 cm below the surface. One small flake of pisolite was recovered.

Stratum III included the large cobble feature and surrounding soil to approximately 35 cm below the surface. Stratum III was not found in Subsquare A5. The color of the soil remained black due to the continued high percentage of charcoal. The percentage of fire-cracked rock increased to approximately 50%, with approximately 35% being the cobbles which formed Feature 1. Dating, identification and flotation samples were retained from this stratum. No artifacts were found within it.

Stratum IV was located beneath the cobble feature and may also be found in Subsquare A5 (**Fig. 2**). It may represent the soil that the upper pit was dug into. The soil was loamier than the soil above it and the matrix was made up of approximately 20% fire-cracked rock, none of which were cobble-sized. In Subsquare A5 it was brown rather than dark brown-black in color. No artifacts were found in this stratum other than fire-cracked rock and small amounts of charred wood. This stratum was followed by sterile till in Subsquares A5 and A9, which sloped down toward the centre of the pit. (Note: in Ssq. A5 the till contained a shallow post-hole like depression)

Stratum V was located in Subsquare A13 only. There was an increase in the percentage of cobbles from 0 to 10% in this stratum. This may represent a second cobble layer, which would imply an earlier roasting event. A dating sample was retained from this stratum. No artifacts were recovered.

Stratum VI was also only located in Subsquare A13. It consisted of fire-blackened soil mixed with approximately 25% fire-cracked rock. Till was reached in the eastern half of the subsquare but not in the western half. The soil in the western half of the unit was still very black and soft for several centimetres at the time the excavation was halted. A third pit may be indicated. No artifacts were recovered from Stratum VI.

Discussion and Conclusion

Extra-Housepit Excavation 36 is of medium size in comparison to other roasting pits located at Keatley Creek. It exhibited the typical characteristics of a plant roasting pit at the site. There may be several roasting pits lying on top of each other in this case. While such superposition has not been observed in any of the other pits excavated, this may be the result of the position of the trenches, and such overlapping use may have occurred.

References

Peters, Desmond

1999 Personal Communication. Desmond Peters is an elder and past chief of the Ts'kw'aylaxw (Pavilion Band).

Pokotylo, David and Patricia Froese

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Figures

Figure 1: Surface plan and excavation units of EHPE 36. Surface cross-section is illustrated below.

Figure 2: Stratigraphic profile and floor plan of EHPE 36.

Figure 1: Surface plan and excavation units of EHPE 36. Surface crosssection is illustrated below.

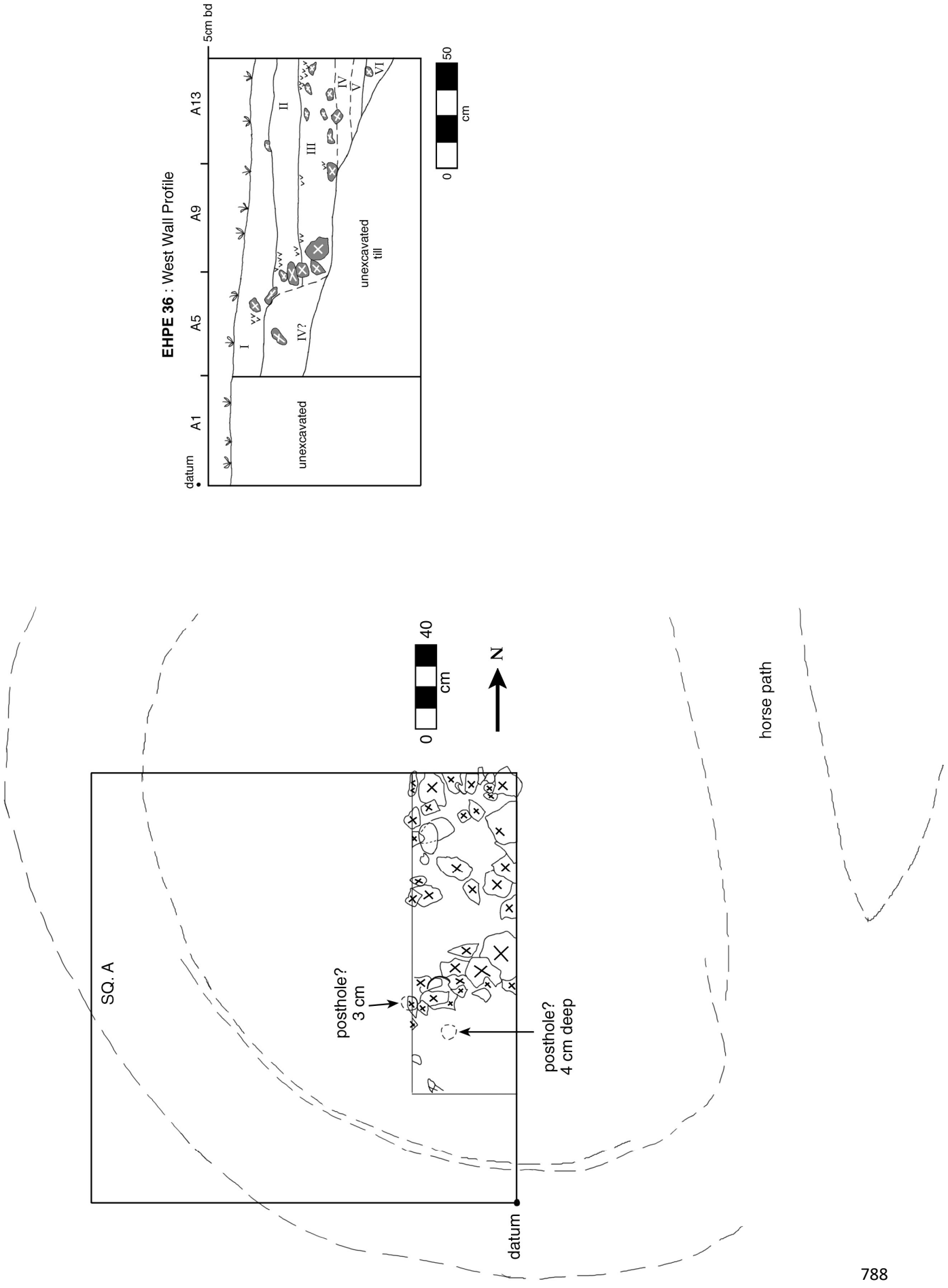
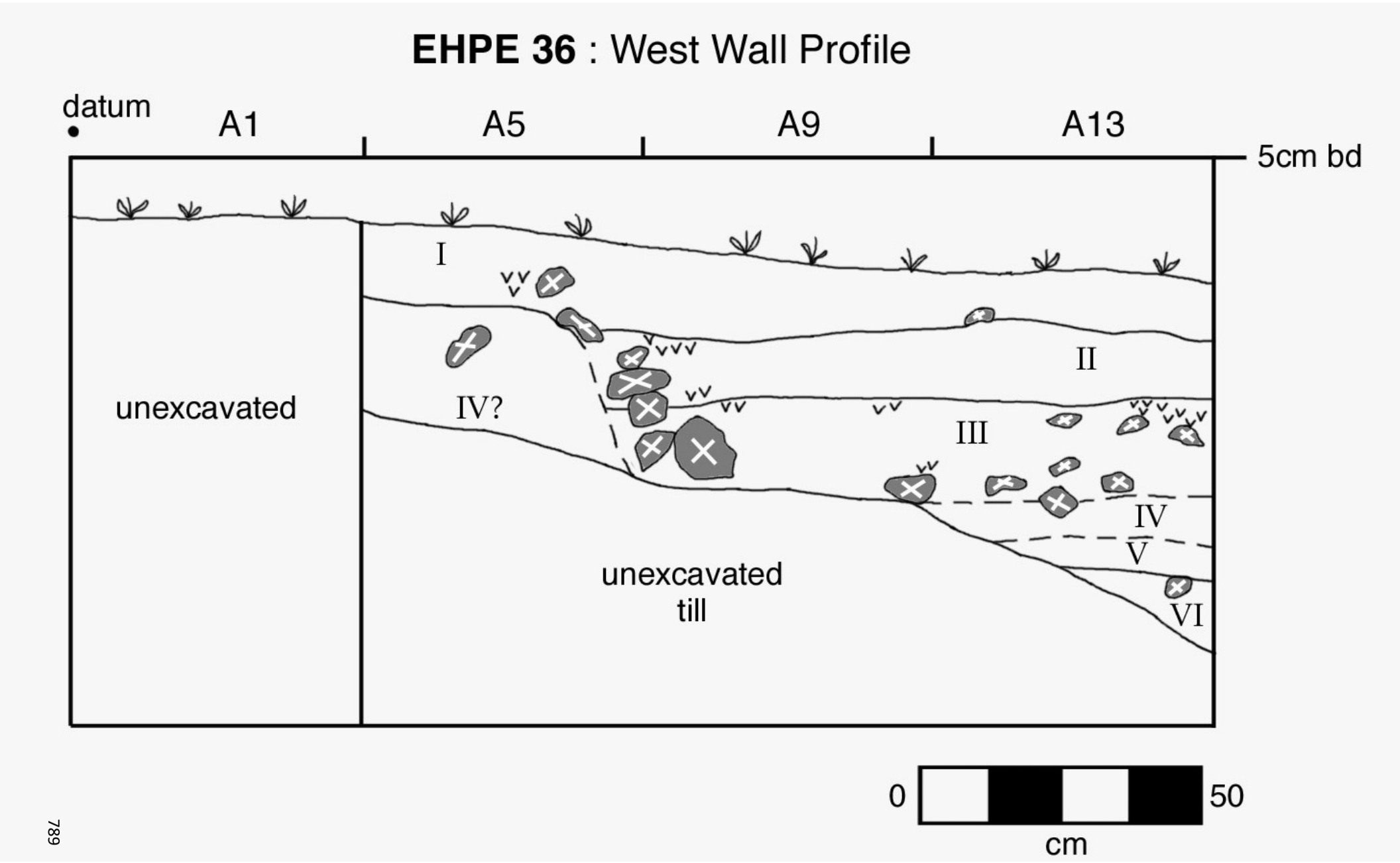


Figure 2: Stratigraphic profile and floor plan of EHPE 36.




Intense hearth-like reddened area


Superficial fire-reddening


Rock


Fire-cracked rock

Post hole with depth below floor (in cm.)


Most recent post hole


With in situ post remains


Possible post hole

Pit feature with depth below floor (in cm.)

Fish bones, Articulated fish ribs

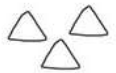
Mammal bone or fragments


Mammal bone, Mammal ribs

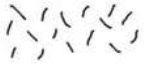
Flake


Most recent pit feature


Older (capped) pit feature


Rim midden


Roof deposits


Fir Needles


Bark roll


Charcoal


Floor


Surface


Surface


Stratum boundary


Possible Stratum boundary

I, II, III Stratum Numbers

BD, BTD Below datum, Below temporay datum

BS Below surface


Root


Wood