The Archaeology of Kamloops

Department of Archaeology
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Publication Number 7

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Publication of this volume has been
assisted by a generous grant from the

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KAMLOOPS

by

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Publication Number 7
1980

Burnaby, British Columbia

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ARCHAEOLOGICAL INVESTIGATIONS NEAR KAMLOOPS

ROBERT L. WILSON

I INTRODUCTION

This report is concerned with archaeological excavations in the south-central interior of British Columbia, in the vicinity of Kamloops. The principal results of the research are the description and incorporation of new archaeological data into a cultural-historical synthesis for the Kamloops locality. The purpose of the first section is to introduce the objectives of the research, the area investigated, previous archaeology, and the list of archaeological units utilized to interpret the new data.

Research Objectives

The ultimate research objective is the reconstruction of the culture history for the Kamloops locality. Since at the outset of the research, the prehistory was very little known, the immediate research objective was to sample a selection of sites to determine their cultural content and temporal range. As the funding for field research was directed towards salvage of threatened sites, the sites chosen were, for the most part, those in the greatest immediate danger of destruction. In the reconstruction of the culture history for the locality, the archaeological features and materials are described in detail, and a sequence of archaeological units is devised. This sequence is then compared to cultural sequences for other localities in the Interior Plateau of British Columbia.

Research Area

The research area is termed the Kamloops locality, the definition of locality being an archaeological unit "...small enough to permit the working assumption of complete cultural homogeneity at any given time" (Willey and Phillips 1958:18). The Kamloops locality has as its focal point the confluence of the North and South Thompson Rivers. It extends along the river valleys eastwards to Monte Creek, northwards to Rayleigh, and westwards to the shores of Lake Kamloops. Figure 1 shows the location in south-central British Columbia of the Kamloops and other archaeological localities mentioned in the text.

Archaeological research was concentrated on the narrow north shore floodplain of the South Thompson River, eastwards from Kamloops for a distance of approximately 30 km. The entire length of this floodplain from Kamloops to Chase consists of one long continuum of prehistoric sites, but the density of sites directly to the north and east of Kamloops allowed for an adequate investigation to occur within an area of less than 30 square kilometres. Figure 2 shows the South Thompson River Valley looking west towards Kamloops from the eastern boundary of the locality.

Geographical Setting

As designated by Bostock (1948) and Holland (1964), the Kamloops locality lies in the south-central portion of the Interior Plateau of the Interior System of the province. The vast rolling uplands and steep valleys of the Interior Plateau are bounded by the Coast Range on the west and by the Rocky Mountains on the east. Its northern limit reaches to the bend in the Fraser River at Prince George, and southwardly it extends into Washington State, where it is known as the Columbia Plateau. More specifically, the Interior Plateau consists of a number of individual plateaux and highland areas, of which the Thompson Plateau is the most southern, and contains the Kamloops locality.

The Thompson Plateau is a gently rolling upland of low relief ranging from 1200 to 1500 metres above sea level, with only occasional mountain peak elevations of above 1800 metres (Holland 1964:71). It is the most deeply dissected section of the Interior Plateau, as evidenced by the South Thompson River Valley. It is steeply incised, averaging 3.5 km in width, and whose floor ranges from 600 to 1200 metres below the plateau level (Fulton 1967:1; Tipper 1971:11).

Studies on glacial lake history for the Kamloops region have been conducted by Mathews (1944) and Fulton (1965, 1967, 1969). Fulton has estimated that the area was ice free, with all glacial lakes drained and modern drainage established prior to 8,900 years B.P. (Fulton 1969:3). Downwasting of the last glaciation created a large glacial lake, named Lake Thompson by Mathews, in the

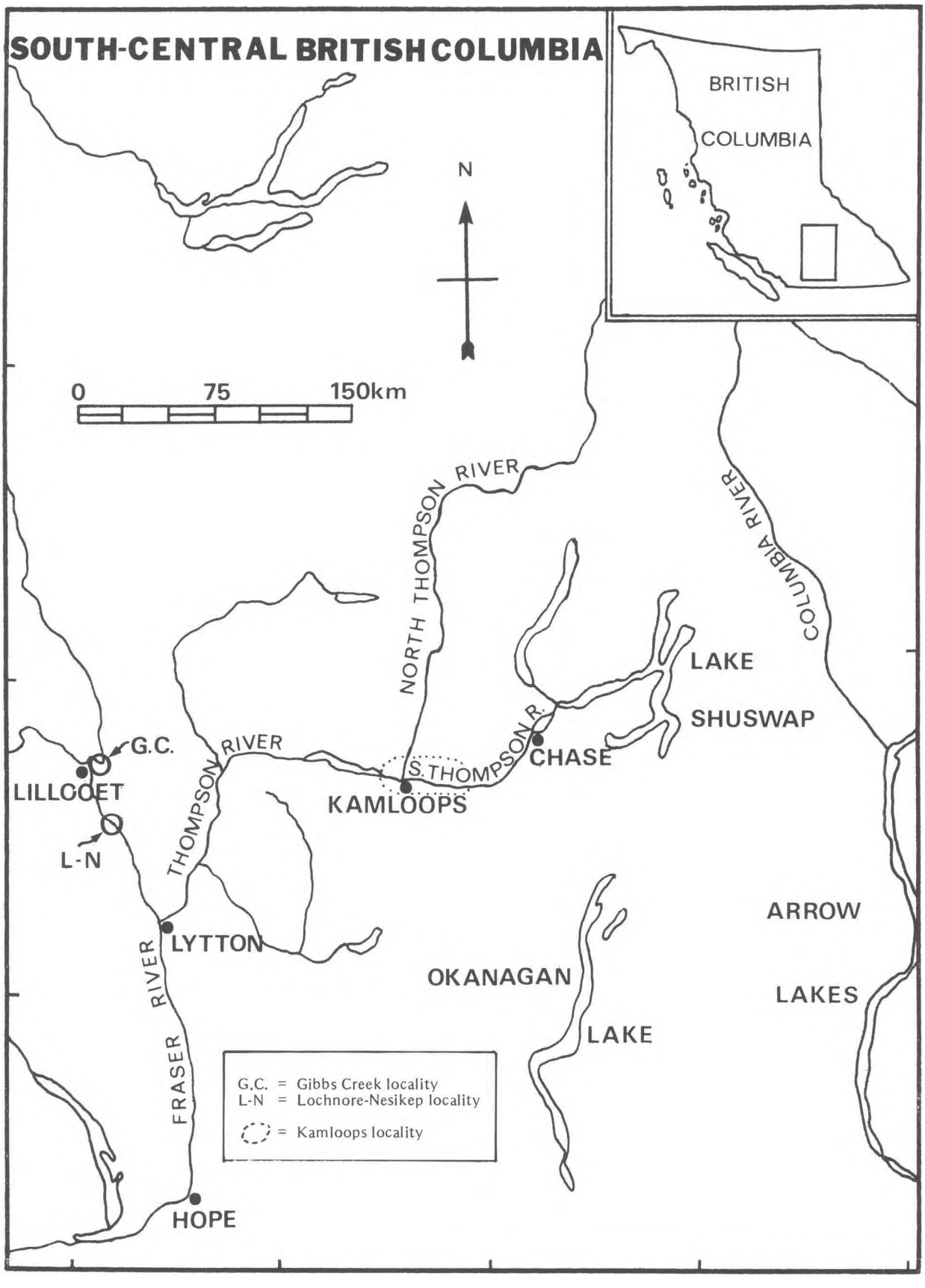


Fig. 1. South-central British Columbia, locating the Kamloops and other archaeological localities.

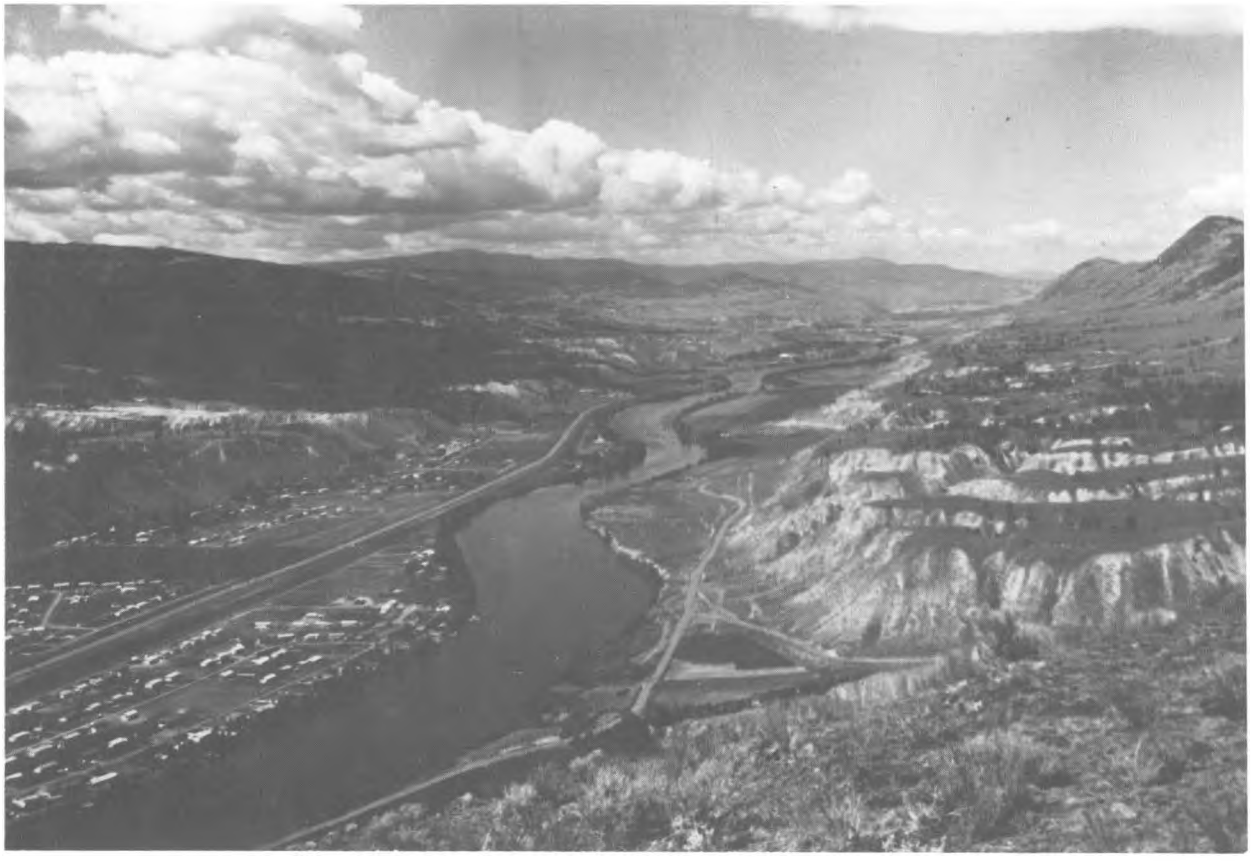


Fig. 2. South Thompson River Valley looking west from the eastern limit of the Kamloops locality, approximately 20 km east of Kamloops.

South Thompson River Valley. This lake deposited medium- to coarse-grained stratified silt throughout the valley bottom to a depth of at least 150 metres, during what Fulton (1969) refers to as the South Thompson stage of the Thompson Basin glacial lake history. Till and glaciofluvial sand and gravel underlie this formation, while fine-grained aeolian, silty sand, from 0.75 to three metres thick, cap it. Terraces of this silt, 90 to 120 metres high have been cut by the entrenching South Thompson River above both shores of the present floodplain, and since then they have been eroded by ephemeral streams, forming alluvial fans along the valley wall edges. The geological deposits of the upland areas above the valley are comprised of till and colluvium.

The plateau is divided by altitude into a succession of biogeoclimatic zones (Krajina 1965; Brayshaw 1970). The valley lowlands around Kamloops lie in the Ponderosa Pine-Bunchgrass zone, characterized by hot summers and cold winters, and an annual total of 150–200 frost-free days. Comparative climatic data for selected valley lowland areas in the south-central interior are summarized in Table 1.

Table 1. Temperature and precipitation data from selected stations in south-central British Columbia. Values represent a 30 year average from 1931–1960.
(Temperature and precipitation tables for British Columbia 1967.)

Station	Altitude		Mean daily temperature				Mean annual precipitation	
	feet	metres	January		July		inches	mm.
			°F	°C	°F	°C		
Kamloops (airport)	1133	346	21.4	-5.9	69.6	20.9	9.71	246.63
Lytton	574	175	27.1	-2.7	72.3	22.4	18.22	462.79
Merritt	1920	585	20.4	-6.4	93.7	17.6	9.20	233.68
Vernon	1383	422	23.2	-4.9	68.4	20.2	15.56	395.22

The semi-desert lowlands in the Kamloops locality were originally comprised of native grasses, including bluebunch wheatgrass *(Agropyron spicatum),* sandberg bluegrass *(Poa secunda),* and rough fescue *(Festuca scabrella).* However, farming and intensive grazing by horses and cattle

in the early post-contact period decreased much of this vegetation (Tisdale 1947). Present floodplain vegetation is still dominated by these grasses, but is supplemented by such xero-thermic flora as thick-rooted sagebrush *(Artemisia tridentata)* and smaller patches of cactus *(Opuntia fragilis).* Red cedars, cottonwoods, salmon berries and chokecherries are representative flora of the moister deposits of stream and river shorelines (Tisdale 1947; Palmer 1974b).

The bench lands directly above the floodplains support an open parkland forest of yellow pine *(Pinus ponderosa)* as either a climax or a seral dominant, with very little underbrush. This forest zone merges into the Caribou-Aspen-Lodgepole pine-Douglas fir zone, which offers the best deer-hunting in the whole region (Palmer 1974b:18). The remaining biotic zones in order of altitude are the Interior Douglas fir, followed by the Engelmann spruce-Subalpine fir zone, and finally there are patches of alpine parkland, whose upper limit is approximately 2100 metres above sea level (Dawson 1894:9).

The present range of vegetation supports a varied faunal population, including the following land mammals: badger, beaver, black bear, coyote, gopher, hare, marmot, moose, and mule deer *(Odocoileus hemionus hemionus).* The latter was the major land mammal staple of aboriginal subsistence. The most abundant riverine resource is the anadramous salmon, of which the sockeye was the most important aboriginally. Of somewhat lesser importance were the chinook and the steelhead salmon runs.

History of Interior Plateau Archaeology

Archaeology in the Interior Plateau has had a relatively short history. Except for cursory excavations conducted by Smith near Lytton and Kamloops at the turn of the century (Smith 1899, 1900), serious research did not begin until the 1950's, with reconnaissance work by Borden in Tweedsmuir Park, in north-central British Columbia (Borden 1952a).

Research in south-central British Columbia was initiated by Sanger, with the excavation of the Chase Burial site in 1960 (Sanger 1968). This was followed by four years of excavation, between 1961–1965, in the Lochnore-Nesikep locality, which is situated between Lytton and Lillooet on the mid-Fraser River (Sanger 1969, 1970). This research resulted in the interpretation of a prehistoric cultural sequence of more than 7000 years duration. One of the most important of Sanger's early conclusions from this study was:

> "... the realization that the prehistory of the Columbia-Snake River system is distinct from the prehistory of the Mid-Fraser-Thompson system until a relatively recent cultural convergence within the last 2000 years" (Sanger 1969:191).

Stryd has continued the research on the mid-Fraser in the Lillooet area, 40 km north of Lochnore-Nesikep, and his study is primarily concerned with the last 3000 years of Sanger's original cultural chronology (Stryd 1973a, 1973b). Other regions of the Interior Plateau have also now been investigated, including areal studies of the Okanagan Valley by Grabert (1971, 1974), of the Nicola Valley by Wyatt (1971, 1972), and of the Arrow Lakes by Turnbull (1971, 1973). Less comprehensive studies of smaller areas and/or individual sites have been conducted on the Chilcotin Plateau by Mitchell (1970); at the confluence of the Chilcotin and Fraser Rivers by Ham (1975); in the South Thompson River Valley by Wilson (1972, 1974), Johnson-Fladmark (1972), Blake (1974) and Eldridge (1974); and in the southern Okanagan by Copp (1975, 1976).

Since the early 1960's, the principal concern of archaeological study in the south-central interior has been the interpretation of cultural chronology. Emphasis has been initially placed upon the collection and analysis of data, and secondly upon experimentation in the selection and definition of chronological terms, or archaeological units, most suitable to describe the cultures and their evolution. As these prehistoric cultures existed primarily at the band level of social organization, practising nomadic hunting and gathering subsistence economies, the interpretations of their culture histories have stressed the evolution of ecological adaptation efficiencies, concentrating on the changes through time of technology and settlement patterns.

Archaeological Unit Concepts

The concept of tradition has been used as one of the most appropriate archaeological units for arranging the chronology of the south-central interior. As there are several meanings to the term "tradition", this study will use

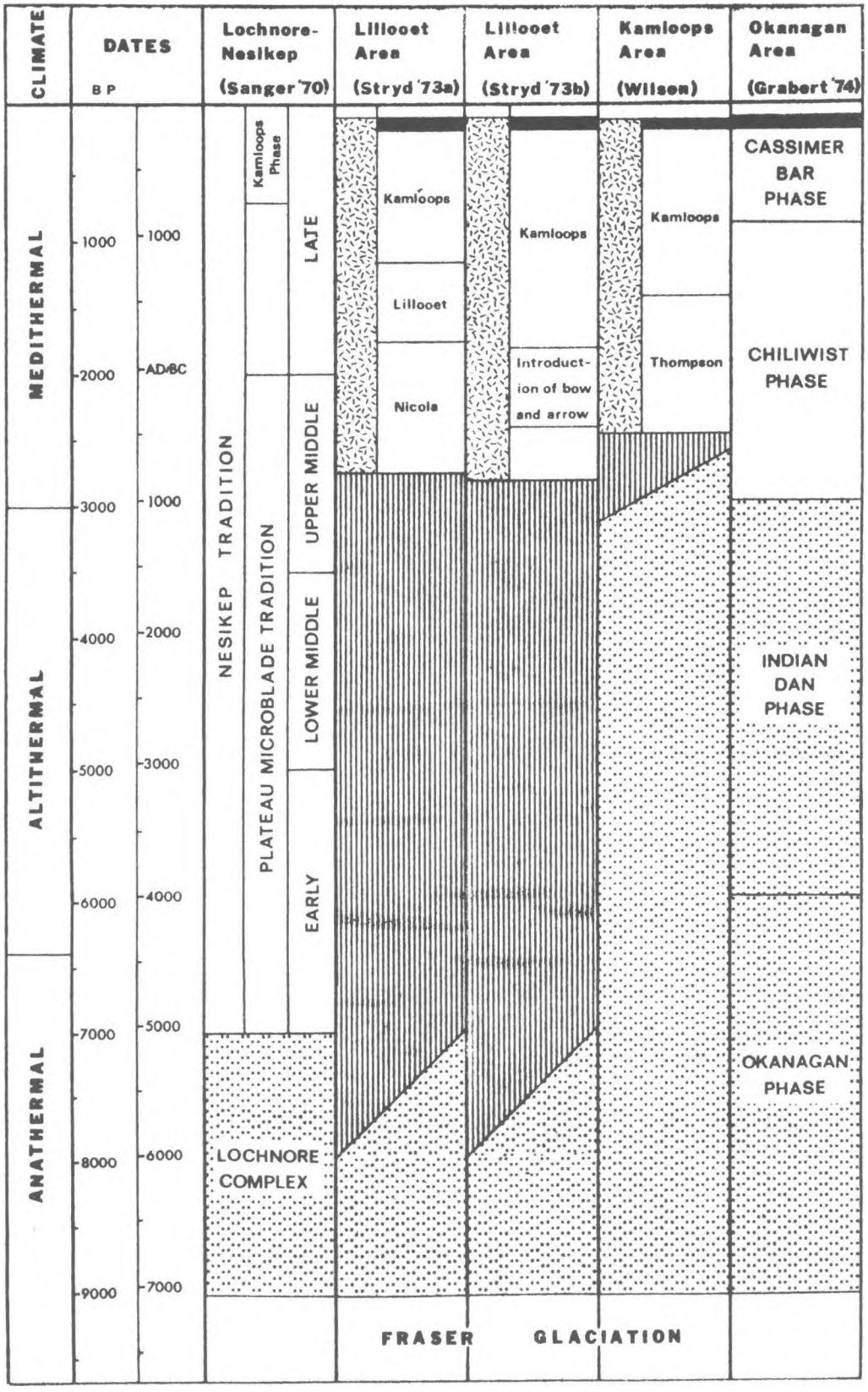


Fig. 3. Selected schemes of archaeological units for the Interior Plateau. Symbols are:

Old Cordilleran Tradition

Early Nesikep Tradition

Late Nesikep Tradition

Proto-historic

the terminology of Sanger (1969) and Stryd (1973a), by referring to the technological tradition with a small "t", and to the larger, more culturally inclusive unit as "Tradition".

Several schemes of archaeological units have been proposed for the culture histories of the Interior Plateau, each new one being based upon more detailed information, as the research continues. A summary of selected schemes is presented in Figure 3. All the schemes portray culture histories that represent two major population movements (Sanger 1969), or what Stryd (1971) prefers to regard as two different adaptive strategies.

The initial occupation of the Interior Plateau represents a northward movement of people from the non-glaciated Columbia Plateau, possibly as early as 8,900 B.P., the date by which the Interior Plateau was free of ice and modern drainage patterns had been established (Fulton 1969:3; Sanger 1969:194). The cultures of the two plateaux at this time appear to be quite similar, both representing a land-oriented economic adaptation (Butler 1961:66; Stryd 1971:7). Characteristic artifacts of these cultures include the following: leaf-shaped bifaces, including Cascade points (Warren 1968:27), edge-ground and edge-battered cobbles, macroblades, hammerstones, milling stones, scrapers, antler and bone industries, and stone perforators (Stryd 1973b). These early cultures have been given several different names, including Protowestern Cultural Tradition (Borden 1969), Old Cordilleran Culture (Butler 1961), Old Cordilleran pattern (Warren 1968), and Old Cordilleran Tradition (Stryd 1973b). Stryd refers to this cultural pattern as being characterized ". . .by a generalized adaptive strategy" that is ". . .capable of exploiting varied ecozones of different carrying capacities with adaptive flexibility replacing adaptive efficiency" (Stryd 1971:7). Specialized economic activities in the Columbia Plateau at this time include fishing at the Five Mile Rapids site, gathering at the Goldendale site, and hunting at the Ash Cave site (Warren, Bryan, and Tuohy 1963:9) as quoted in Warren (1968:28).

The Old Cordilleran Tradition in the Interior Plateau is best defined in the relatively small Lochnore Complex from the Lochnore-Nesikep locality (Sanger 1969). It is also represented in individual components in a few sites distributed throughout the south-central interior, including Tonasket (45-OK-29) in the Okanagan Valley, EcQu 2 near Falkland, EbQq 1 at Rawlings Lake, and possibly the Moulton Creek site, Zone II, and the Scotch Creek site, both near Chase (Stryd 1973b).

In addition to the Old Cordilleran Tradition, a second possible early post-Pleistocene adaptation to the south-central interior may be represented by a Tradition containing Plano-like points. However, data about its cultural contents and contexts are scarce, and it is only briefly mentioned by Sanger (1969:192) and Stryd (1973b) as probably being prior to the Nesikep Tradition, having a date in excess of 7500 B.P.

The initial occupations of the south-central interior were replaced by a new cultural type, termed the Nesikep Tradition, by about 7000 B.P. The introduction and development of this new tradition is associated with a climatic change to much warmer and drier conditions, known as the Altithermal. It is characterized by a change in adaptive strategy towards a dry forest-adapted culture that was dominated by specialized riverine exploitation. "Adaptive efficiency replaced adaptive flexibility", according to Stryd (1971:8). This change in lifestyle occurred earliest and is best documented in the mid-Fraser region of the Interior Plateau. Beyond this area, it is limited to the Thompson drainage, where it probably occurred much later in time, and it cannot be used to describe the prehistory of the Arrow lakes region in southeastern British Columbia (Turnbull 1973), nor that of the Okanagan Valley either (Grabert 1974). More detailed inter-areal comparisons will be discussed later in the text.

In the mid-Fraser area the Nesikep Tradition has two major periods. The earlier one is characterized by a microlithic prepared core and blade industry, called the Plateau Microblade tradition by Sanger (1969) and lasts from the beginning of the Tradition to 2800 B.P. (Stryd 1973a:24). The later period lasts to the end of the Tradition, and lacks the Plateau Microblade tradition.

Theories concerning the origin of the Nesikep Tradition are based on very scant evidence, and mainly concern population movements. The most plausible one to date is a movement of peoples from the Arctic, bearing microlithic technologies, which Borden (1969) names the Early Boreal Cultural Tradition. But if as Sanger (1969:197) suggests, ". . .the Nesikep Tradition can be viewed as the prehistory of people whose language evolved into the historic Interior Salish", then it may have originated in the Gulf of Georgia-Puget Sound lowlands, which as reported by Stryd (1973b) might be the Proto-Salish homeland.

The later period of the Nesikep Tradition is the much better archaeologicaliy documented one, and is thus the one that creates the most debate concerning interpretation of chronology. The following discussion will briefly outline the initial chronology established by Stryd (1973a) for the Lillooet area, followed by his revised version (Stryd 1973b). The chronology established for the Kamloops locality is somewhat divergent from both the above, and is discussed in the following section. It must be kept in mind that archaeological chronology in the south-central interior is in a state of flux, and respective schemes portray the available data to date. They are all thus susceptible to change.

Stryd (1973a) divides the chronology of the later period of the Nesikep Tradition into four consecutive

phases, and lists the following cultural traits as attributable to the entire period (1973a:25–26):

"– a hunting, gathering and fishing economy similar to that of the ethnographic Shuswap and Thompson
– domesticated dog *(Canis familiaris)*
– pithouses as the dominant form of winter dwelling
– flexed internments
– ground stone tools rare; primarily chipped stone
– chipping detritus (debitage) usually plentiful
– black to grey vitreous basalt the major lithic material with chalcedony of secondary importance
– retouched and utilized flakes most common artifact classes
– microblades and microblade cores absent
– projectile point stem grinding rare
– ground nephrite tools
– nipple-top mauls
– pièces esquillées
– pebble hammerstones
– multidirectional flake cores
– sandstone abraders and grinding slabs
– retouched and utilized blades not struck from prepared cores
– reground rodent incisor chisels
– bone pendants
– antler splitting wedges
– antler digging stick handles
– unilaterally barbed bone and antler points
– unifacial and bifacial pebble tools (choppers and chopping tools)
– large spear points, predominantly corner-notched
– red ochre
– all types of bone awls
– all types of blanks
– all types of bifaces except pentagonal biface
– all types of gravers
– all types of perforators
– all types of scrapers except crescents
– all types of drills"

The four phases of Stryd's initial chronology are termed Nicola, Lillooet, Kamloops, and Proto-historic. The Nicola Phase, 2750–1750 B.P., is characterized by large to medium corner-notched dart projectile points, and by the absence of microlithics and arrow points. The Lillooet Phase, 1750–1150 B.P., is defined by the presence of small corner- and side-notched arrow points, excluding the Kamloops Side-notched point. The Kamloops Phase, 1150–200 B.P., represents the final manifestations of prehistoric cultural development in the south-central interior, and is characterized by the presence of Kamloops Side-notched arrow points and an increase in art work. The Proto-historic Phase, 200–100 B.P., is defined by the introduction of non-aboriginally manufactured goods, and designates the end of the Nesikep Tradition. Stryd indicates that most differences between the Early and Late periods of the Nesikep Tradition ". . .are quantitative rather than qualitative, as in the higher incidence of black vitreous basalt and the near absence of projectile point stem grinding in the later Nesikep Tradition" (Stryd 1973a:26). The only trait diagnostic of the entire Late Nesikep appears to be the absence of blades struck from prepared cores.

In revising the chronology of the Late period, Stryd (1973b) re-evaluates the concept and use of "phase" as it applies to the Interior Plateau. The early part of the Late Nesikep is divided into two chronological periods, both of which represent continued adjustments to the onset of cooler, moister climatic conditions, known as the Medithermal. The first period dates from 2800–2400 B.P., and is characterized by two negative traits: the absence of both microliths and of arrow points. The second period dates from 2400–1800 B.P., and is distinguished by the introduction of the bow and arrow, and the use of large- to medium-sized corner-notched points.

A third period in Stryd's revised chronology (Stryd 1973b) is known as the Kamloops Phase. Even though the cultural elements of this phase most closely resemble the ethnographic pattern of the Interior Salish, there has been confusion concerning its specific diagnostic traits. The only generally-accepted diagnostic trait to date for this phase is the presence of small triangular, side-notched arrow points, known as Kamloops Side-notched points (Sanger 1968). Other cultural traits may be restricted to this phase, and they are listed by Stryd (1973b) as follows:

"– steatite carving complex
– carved antler figures
– zoomorphic hand mauls
– pecten shell *(Pecten caurinus)* rattles
– tubular steatite pipes
– bird bone beads?
– chipped and drilled slate pendants
– spindle whorls and weaving (inferential)
– spall tools"

There is a wide range to the radiocarbon dates that possibly signify the beginning of the Kamloops Phase. However, Stryd (1973b) regards a date of *ca.* 1800–1600 B.P. as the most suitable for the commencement of this phase.

The last period of the Nesikep Tradition is the proto-historic, which commences around 200 B.P. with introduction of non-aboriginally manufactured goods. The date of the discovery of gold on the mid-Fraser, at approximately 100 B.P., signifies the end of the Nesikep Tradition.

Kamloops Locality Archaeological Units

The basic cultural pattern of the Late Nesikep Tradition for the mid-Fraser is also present in the Kamloops locality. However, cultural adaptations within the two areas diverged to such a degree that separate chronological sequences are distinguished. In contrast to the mid-Fraser, two prehistoric cultural phases and one chronological period are delineated for the Kamloops locality: the Thompson Phase, *ca.* 2000–1400 B.P., the Kamloops Phase, 1400–200 B.P., and the Proto-historic period, 200–125 B.P.

The individual cultural adaptations in the two areas were influenced by several factors, the primary ones being ecological, including differences in topography, and in the nature and availability of water and other subsistence resources. The nature and frequency of trade and communication with other groups would have also been an important influence in cultural adaptation. These factors will be analyzed in more detail in subsequent discussions.

There is little archaeological evidence for pre-Late Nesikep occupation on the river floodplains in the Kamloops locality. Occupation of the locality at this time might have occurred at higher elevations, as intensive riverine exploitation had yet to develop, and it would have resembled the Old Cordilleran pattern of generalized adaptive efficiency. The only possible evidence to date for the Old Cordilleran in the South Thompson River Valley is Component 2 of the Moulton Creek site near Chase (Eldridge 1974). There is also a noticeable lack of microlithic technologies in the Kamloops and South Thompson areas, indicating that the adaptation of the Early Nesikep Tradition in the mid-Fraser did not evolve here.

Investigations to date interpret the earliest concrete evidence, exclusive of Moulton Creek, for occupation of the Kamloops locality to be just prior to 2000 B.P., and to represent Late Nesikep winter pit house village occupations. This is related to the fact that in the mid-Fraser area, the beginning of the Late Nesikep is associated with the onset of the cooler and moister Medithermal, and also roughly corresponds to the initial use of semi-subterranean dwellings, although Stryd (1973b) emphasized that there may not be any causal relationship between the two. The onset of the Medithermal in the South Thompson area may have influenced the initial occupation of the river floodplains in the Kamloops locality. This and other data, especially Elmendorf's linguistic studies of the Interior Salish, and Palmer's cultural ecology studies of the southern Shuswap, all suggest that the initial intensive occupation of the Kamloops locality started around 2000 B.P.

Taking into account diverse sampling techniques and differential preservation, the differences in the archaeological assemblages between the Kamloops locality and the Lillooet area nonetheless represent some variation in cultural adaptation. In general terms, the occupation of the Kamloops locality was more nomadic with a slightly heavier reliance upon hunting, than the more sedentary, fishing subsistences of the mid-Fraser. In the Kamloops locality the division of the archaeological sequence into three phases is based upon the recognition of distinct cultural aggregates, each showing a high degree of homogeneity.

Thompson Phase

The Thompson Phase represents the initial occupation of the Kamloops locality floodplains. It incorporates most of the cultural elements of Stryd's (1973a) Nicola and Lillooet Phases, and also includes some cultural elements remaining from the earlier Old Cordilleran Tradition. The criteria used to distinguish the Nicola and Lillooet Phases (Stryd 1973a), or the first two periods of the Late Nesikep Tradition (Stryd 1973b), in the mid-Fraser area, are not present to the same degree in the Kamloops locality.

The characteristic traits of the Thompson Phase, as represented by the Kamloops locality are as follows:

- small round housepits without ridges
- use of darts (including spear and spear-thrower projectiles)
- much less use of bow and arrow, and that only towards the end of the phase
- many types of corner-notched projectile points
- many types of leaf-shaped and stemmed projectile points
- macroblades and microblades
- spall tools
- ground and pecked stone
- chipped stone drills
- relatively higher incidence of cryptocrystalline tools
- relatively higher incidence of antler tools

Two radiocarbon dates, of 1920 ± 100 B.P. (Gak-3902), from the occupation of House pit 19 in the Kamloops

Reserve site, and 1950 ± 130 B.P. (Gak-4915), from the lowest occupation of House pit 4 in the Harper Ranch site, indicate the Thompson Phase was in existence by about 2000 B.P. How soon it began before 2000 B.P. will depend upon a wider range of radiocarbon dates. The terminal date for the end of this phase is in doubt, but it may be around 1400 B.P.

Kamloops Phase

This is the best established archaeological unit in the south-central interior, but there is still considerable conflicting evidence as to its time span and cultural composition. Most of the Kamloops Phase in the Kamloops locality appears to be a period of increased adaptive specialization and cultural development. Only towards the very end of the phase, is there any inferential evidence for cultural decline, as is hypothesized by Stryd (1971:11).

Whereas the bow and arrow was introduced in the Thompson Phase, it did not wholly replace the dart until the Kamloops Phase. Characteristic traits of this phase for the Kamloops locality are as follows:

- large circular and oval house pits with ridges
- cache pits
- side-notched arrow points, including the Kamloops side-notched points
- relatively higher incidence of bone tools
- ornaments
- incised motif decoration on bone
- hand mauls
- chipped stone pendants

For the most part, the ethnographic material culture described by Teit (1909) and the archaeological material excavated by Smith (1900) belong to this phase.

There is conflicting evidence for the beginning of the Kamloops Phase in the south-central interior. The earliest radiocarbon date for this phase in the Kamloops locality is 1140 ± 100 B.P. (Gak-4916) from the latest occupation of House pit 4 in the Harper Ranch site. This occupation indicates that the Kamloops Phase was well established by this time. Stryd's (1973a) date of 1800 B.P. might be too early for the Kamloops locality. This is because initial intensive riverine exploitation of the anadromous salmon occurred much later in the Kamloops area than it did in the mid-Fraser area, and subsequent culture change in the former would thus tend to postdate that of the latter, especially if the culture traits of this phase diffused eastwards from the mid-Fraser area. A "tentative" date of 1400 B.P. is set for the beginning of the Kamloops Phase in the Kamloops locality, keeping in mind that the change itself is of far more significance than the date of the change. The terminal date for the Kamloops Phase coincides with the introduction of Euro-Canadian trade goods.

Proto-historic Period

This is the last chronological unit of the Nesikep Tradition, and is characterized by the presence of non-aboriginally manufactured items in an otherwise completely aboriginal context. Iron had been introduced into the interior by 200 B.P. (Teit 1909:475), and this serves as a convenient initial date for this phase. Whereas the introduction of "European" trade items would not have altered aboriginal lifestyles to a great degree, the introduction of the horse at approximately this time helped to reshape aboriginal economic values. The first evidence of their use comes from the records of Simon Fraser (1889) as he recalls encountering several mounted parties of Indians on his journey down the Fraser River in 1808.

The establishment of two trading posts at Kamloops in 1812, by the Pacific Fur Company and the Northwest Company, initiated the beginning of the end of aboriginal subsistence patterns in the Kamloops locality. Overtrapping and the demand for salmon by the fur-trading companies resulted in severe food shortages, which were not sufficiently compensated for by the introduction of potato growing (Balf 1969:3). An approximate date of 125 B.P. is chosen for the end of the Proto-historic Phase.

Report Outline

The first section has described the location of the research and its archaeological framework. The second presents an outline of significant ethnographic data used for analogy, and briefly compares some opposing aspects of the ethnographies of the mid-Fraser and Kamloops areas. The third section discusses in detail the nature of the archaeological investigations and the sites examined, and the fourth gives a detailed description of the recovered archaeological materials. The final section attempts to reconstruct the archaeological cultures of the Kamloops locality within the larger cultural-historical framework of the south-central interior.

II ETHNOGRAPHY

At the commencement of the historic period early in the nineteenth century, the South Thompson River region was inhabited by the Shuswap language group, one of four ethnographic Interior Salish language groups of the south-central plateau. The Shuswap territory covered an area of approximately 182,000 square kilometres (Palmer 1974b: 13), from the Fraser River eastward to the Columbia River, and northward from the Arrow Lakes to the great bend in the Fraser. The Shuswaps that occupied the territory surrounding the confluence of the North and South Thompson Rivers comprised the Kamloops Band, which, together with the Savona Band from the western reaches of Lake Kamloops, formed one of seven Shuswap territorial and dialectic tribal divisions (Teit 1909:455). Figure 4 shows the ethnographic Shuswap territory and the neighbouring aboriginal territories of the Salish, Athabascan, Kutenai, and Algonkin language stocks.

Comprehensive ethnographies on the Interior Salish have been recorded by James Teit (1900, 1906, 1909), Franz Boas (1890), and by George Dawson (1892). These were later supplemented by Verne Ray's distribution analyses of aboriginal Plateau cultural elements (1939, 1942). Interpretations of prehistoric and early contact cultural ecology of the southern Shuswap have been provided by Gary Palmer (1974a, b). It must be noted that analogies made to the early ethnographies should warrant careful analysis. Even though the ethnographies attempted, for the most part, to record aboriginal Plateau culture prior to European contact, they described the Interior Salish only after they had been introduced to and severely decimated by European social values and disease, the Christian Church, and the reservation system.

As portrayed in the ethnographies, the culture of the Shuswaps was representative of the overall aboriginal lifestyles of all four Interior Salish language groups. Boas (1890:632) states that the customs of the Thompson, Lillooet, and Okanagan ". . .differ very slightly from those of the Shuswap," while Ray (1939:145) describes the Shuswap as retaining ". . .Plateau culture in almost full measure," without modification from the Coast or the Plains. Representative elements of Plateau culture include emphasis on pacifism, egalitarianism, the Guardian Spirit Concept, and a material culture which reflects an adaptation to a wide range of plateau resources. A list of manufactured items utilized in subsistence activities, storage, ornamentation, and warfare is given in Appendix A.

Traditionally, the Shuswap developed a semi-nomadic riverine settlement pattern based upon a hunting, fishing and gathering subsistence. The short-range altitudinal distribution of biotic zones of the plateau permitted an intensely diversified economy, utilizing several ecological habitats. This economy was characterized by a specialized exploitation of intermittently abundant resources such as deer, elk, Pacific salmon, and several species of berries and roots (Teit 1909; Palmer 1974b; Surtees 1974). The land mammals and species of berries and roots available for Shuswap subsistence in and around the Kamloops locality in ethnographic times are listed in Appendices B and C respectively.

Seasonal transhumance maximized exploitation of plateau resources, and formed the basis for Shuswap social and political patterns. Permanent settlement did occur however from December to March of each year in semi-subterranean dwellings, constructed together in large numbers to form winter villages. Non-habitation features, such as storage pits and sweat lodges, were often associated with these permanent dwellings. The winter villages were situated in the larger valleys close to the shores of the major rivers, usually on sandy, well-drained soil (Dawson 1892:18; Teit 1900:192), close to fresh water and berrying and root-digging grounds (Smith 1899:129), and preferably with a sunny, southern exposure.

Teit (1900:192) records that in contact times winter dwellings rarely occurred in groups of more than three to four at one place, and often occurred individually. The archaeological record, on the other hand, implies much larger groupings of dwellings, thus possibly indicating a late aboriginal trend away from winter settlement in large villages. The dwellings themselves, commonly known as pit houses, consisted of a conical-shaped, wood-framed and earth-covered structure, built above a large round hole, excavated up to two metres deep and, according to Smith (1900:404), from seven to ten metres in diameter. Pit house dimensions varied depending on the nature of the village and on the number of families residing in the dwelling (Hill-Tout 1907:56; Teit 1900:192).

Seasonal residence for the non-winter months occurred in temporary, easily constructed frame lodges, covered

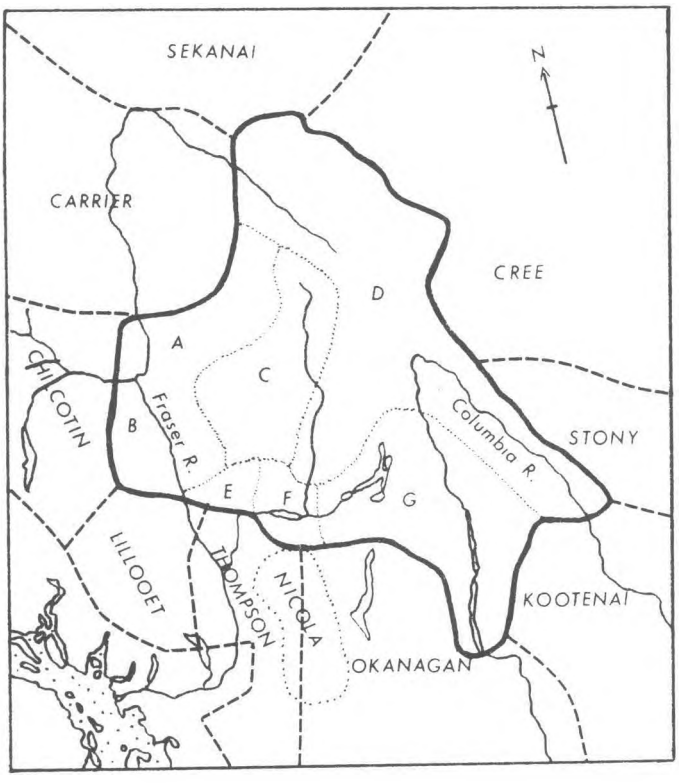


Fig. 4. Territory of the ethnographic Shuswap, showing the seven tribal divisions (taken from Teit 1909:450). (A) Fraser River Division; (B) Canon Division (by 1909 largely occupied by the Chilcotin); (C) Lake Division; (D) North Thompson Division; (E) Bonaparte Division; (F) Kamloops Division; (G) Shuswap Lake Division.

with bark, grass mats, or skins. Typical summer dwellings are illustrated in a photograph by Hill-Tout (1907:57).

Both Teit (1900:192–199) and Boas (1890:632–635) graphically describe the construction of all types of aboriginal habitation used by the Interior Salish. Aboriginal frame lodges and pit houses are no longer extant, but the pit house depressions themselves, referred to as house pits, still indicate the presence and location of former winter dwellings and villages. The reader is referred to Smyly (1973) and to Surtees (1975) for discussions on the recent construction of two pit house replicas near Salmon Arm and Chase, B.C., based on information gathered from older members of the Salmon Arm and Nisconlith Indian Bands.

The large Shuswap villages were autonomous, but might be associated with others through intermarriage and the sharing of common hunting and berrying grounds (Teit 1909:569). Smaller villages would frequently vary location and size from winter to winter, as family units would not traditionally winter in the same place. Generally however, Shuswap bands consisted of closely related families who wintered within a definite locality, at or near a large village (Teit 1909:457).

Springtime saw the dispersal of winter village inhabitants into individual family units, which would hunt, fish, pick berries and dig roots in the more elevated, forested and lake regions of the plateau, or congregate at summer fishing stations beside the major rivers, such as at Pavilion on the Fraser (Wade 1907:14). Maximum resource exploitation occurred during early autumn when all the bands would gather at fishing stations on the rivers for the annual Pacific salmon runs. Dawson (1892:15) emphasizes the importance of this resource:

> Dried salmon. . .before attempts at agriculture. . . constituted the sole winter staple. The right to occupy certain salmon-fishing places, with the annual visit to these of the more remote families, and the congregation of large numbers of Indians at specially favourable places, largely influenced the life and customs of the Shuswaps.

Sanger suggests that this seasonal transhumance might have been minimal among the peoples of the South Thompson, because of the relatively close proximity of the summer hunting and fishing grounds (Sanger 1968:128). However, as an example of the distance travelled for food procurement, Dawson mentions that aboriginally, the Shuswaps who lived west of Kamloops along the banks of the Thompson River to the mouth of the Bonaparte River, and in the Bonaparte Valley itself, took their winter stock of salmon from the Fraser River, at the western base of Pavilion Mountain, a distance of well over 80 km (50 mi.) (Dawson 1892:24).

This seasonal economic pattern influenced the egalitarian nature of Shuswap society. There were few restrictions upon the open achievement of non-hereditary status, with little emphasis upon nobility, clans, or "societies". Village or band leaders represented little authority or prestige beyond the supervision of economic and social activities. Hunting grounds, fishing stations, berrying and root-digging grounds were all common tribal property. The sexual division of labour resembled traditional nomadic hunting and gathering patterns, with tool manufacturing and the procurement of meat and fish being male-oriented activities, and the gathering of roots and berries, and household maintenance being female-oriented activities.

The above description of social organization by Teit (1909:569–575) and Ray (1939) pertains to all but the westernmost divisions of the ethnographic Shuswap. As recorded by Teit (1909:575–583) and Boas (1890), the social organization of the Canyon and Fraser River Divisions, by contact times, had become increasingly influenced by the social systems of the neighbouring Athabascans and Coast Salish, and included such "coastal" institutions as

rank, wealth, hereditary nobility, crest groups, and potlatching. These social patterns reflect still another variant by the Canyon Division to the overall cultural system of the plateau. These people were almost completely sedentary, with most inhabiting the same site both winter and summer, and giving ". . .all their energies to salmon fishing, the preparation of oil, and trading," and doing ". . .very little travelling or hunting" (Teit 1909:535).

There was much social intercourse between all the Interior Salish bands, and also with the neighbouring Nicolas, Chilcotins, Carriers, and Kutenais. Sharing of common hunting and fishing grounds, trading of food stuffs, skins, utilitarian and wealth items, and the selling of slaves (Teit 1909:536) were reasons for bringing people together, and this often resulted in intermarriage (Teit 1909:468).

The Kamloops Division had the most intercourse of any of the Shuswap divisions, because of its central location and relatively easy access by water. Teit (1909:536) records that they traded dentalia, copper, marmot and rabbit skin robes, dressed moose and caribou skins, snowshoes, and a little paint with the Okanagan and Thompson, in exchange for certain kinds of roots, Indian-hemp bark and thread, dried salmon, salmon oil, woven bags and baskets, buffalo robes, parfleches, wampum beads, and horses.

Warfare, based upon revenge, plunder, or as a means of acquiring distinction, was also practised by the Interior Salish, but was conducted only by small raiding parties (Teit 1900:267–271; Smith 1900;406–407).

The introduction of the horse late in the eighteenth century (Teit 1909:533) created much change in the social and economic structure of the Shuswaps. The possession of good and many horses became ". . .the most important element of wealth and social prominence" (Dawson 1892: 14). The horse must have also been a factor in increased mobility and greater diffusion of cultural elements between bands (Ray 1939:137).

The advent of the early contact period saw the elimination of at least two-thirds of the aboriginal population (Teit 1909:463–466; Mayne 1861:216). The estimated population size of the Kamloops Division in 1850 was approximately 900 individuals, and of the entire Shuswap tribe was about 7200 individuals. Teit (1909:463) states that the latter figure was ". . .probably less than one-third of what it was fifty years ago", and he attributes smallpox epidemics to be the primary cause of the decrease. Coinciding with this decline in population was the partial or complete loss of traditional subsistence patterns, and of aboriginal political, social, and religious values.

III ARCHAEOLOGICAL INVESTIGATION

This section discusses factors influencing the objectives of the research, research methodology, some of the problems encountered in the interpretation of the house pit stratigraphy, and fourthly, the description and contents of each site investigated.

Scope of Investigation

As already mentioned, this was the first scientific archaeological investigation in the Kamloops locality, and its primary objective was the description of local prehistoric culture history. In meeting this objective there were several factors that influenced the investigative procedure, and these are as follows:

(1) the investigation was concerned with the salvage of threatened archaeological sites;
(2) the sites were selected upon a priority system in which the most seriously threatened sites had the highest priority;
(3) non-threatened sites were not investigated;
(4) the investigation was restricted to the location of most of the threatened sites in the locality, that is, the floodplain of the South Thompson River;
(5) nearly all of the threatened sites were winter habitation house pit sites; and
(6) in some instances, length of time for investigation was severely restricted.

Under these conditions, the time spent upon the investigation of each individual site became an important factor, and by adequately testing as many sites as possible, it was hoped to satisfy both the primary objective of the research, and to also complete the goals of the salvage priorities.

In two seasons fieldwork, 1971 and 1973, four house pit village sites, one non-habitation cache pit site, and two burial sites were excavated. All but the burial sites are located on the north shore floodplain of the South Thompson River, with three of the house pit sites being located near the confluence of the North and South Thompson Rivers, directly across the latter from the city of Kamloops. The remaining village site and the cache pit site are approximately 20 km upstream on the South Thompson River. The two single-individual burial sites are located on the north shore of the Thompson River, east of Kamloops (Fig. 5). Research was concentrated on the north shore of the South Thompson River because its relative lack of industrial and urban development to date is being threatened.

Research Methodology

In the selection and excavation of sites, the research methodology was based upon the requirements of salvage archaeology. It was biased towards the collecting of data that would lead to the interpretation of a local prehistoric cultural sequence, through the excavation of threatened archaeological sites. Since previous archaeology in the South Thompson region had been primarily limited to the excavation of burial components, the new investigation was oriented towards the salvage of threatened pit house village sites, in which prehistoric Shuswap settlement and subsistence patterns might be determined. The sites were chosen solely on the basis of salvage priorities.

The excavation of each site attempted to recover the maximum possible range of temporal and spatial cultural data, within the time and financial limitations of the field work. Excavation units were arbitrarily selected initially, in an attempt to test the range of the nature of the surface features in each site, and secondly, to collect the maximum amount of artifactual and architectural data possible. Investigations were thus concentrated within the pit house depressions, as the preliminary testing revealed comparatively little cultural data outside the house pits.

The cultural sequence of the Kamloops locality is divided into two phases and one chronological period, dating from *ca.* 2000–125 B.P. The use of the concept of phase in the archaeology of the Interior Plateau is in much dispute, mainly because of controversy over its definition and meaning. The use of phase is justified, however, when distinct clusterings of components can be identified in both time and space (Willey and Phillips 1958:22). This situation is interpreted for the Kamloops sequence where there are definite distinctions between the several cultural components of the Thompson and Kamloops Phases. The introduction of the Thompson Phase into the Kamloops sequence is based upon the presence of discrete cultural features that

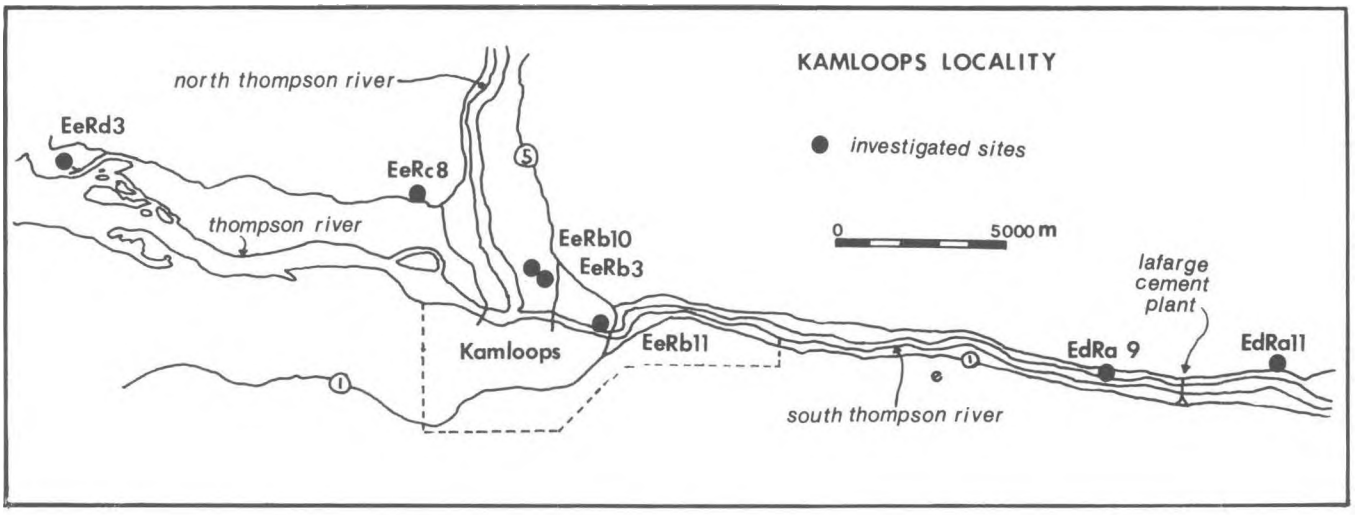


Fig. 5. Kamloops locality showing the investigated sites.

are present to a much lesser degree, or not at all, in the early Late Nesikep Tradition in the Lochnore-Nesikep or Gibbs Creek localities.

The use of phase in chronology formation is an arbitrary method for labelling cultural events, and is based upon the nature of the cultural sequence and the researcher's own attempt to interpret and classify change within the sequence. Stryd states the use of phases:

> . . .permits us to translate the alternations and fluctuations in material culture into an orderly and more manageable sequence of units without necessarily implying drastic changes in the life ways of people responsible for that material culture (Stryd 1975a:22).

In applying the use of phase to Interior Plateau archaeology, Browman and Munsell clearly recognize that even though the pattern of environmental exploitation in the Plateau persisted essentially unchanged from 2000–200 B.P., it is possible to subdivide this time period ". . .into several subphases based on changes in projectile point types and frequencies and such other factors. . ." (Browman and Munsell 1972:547–548). According to Willey and Phillips a subphase is a cultural unit that can only be described in terms of ". . .what went before or came after . . .". In other words, subphases are appropriate labels for cultural units that differ only in the content of a few specific items, or in variations in frequency (Willey and Phillips 1958:24). Investigations to date indicate that the differences in cultural units in the Kamloops locality are of greater magnitude than this, and at present warrant being called phases. This chronology is, of course, subject to change, especially if future archaeology discovers a greater degree of similarity between the phases. Also, in delineating the research area, the boundaries of the Kamloops locality are by no means fixed, as further research may well establish discrepancies in the cultural homogeneity that the locality presently displays.

Interpretation of House Pit Stratigraphy

In the investigation of house pit sites, it is necessary to interpret the relationship between the cultural assemblages and the features of pit house construction. To describe the events that occurred in a house pit site, we must consider four separate, yet related, sets of data: firstly, the procedure and materials involved in the original construction of a pit house; secondly, whether or not the depression was excavated into an existing cultural or non-cultural deposit; thirdly, the daily activities associated with living in a semi-subterranean dwelling; and fourthly, the abandonment of the house, which was followed either by reoccupation of the house pit, or by removal or eventual collapse of the roof structure. Hanson (1973:68–72) and von Krogh (1976:50–54) list aspects of the above processes, which will be summarized here and expanded upon in relation to specific problems encountered in the interpretation of stratigraphy in the Kamloops locality.

One of the major concerns in this analysis of house pit sites is the relationship between the pit house floors and associated cultural assemblages that appear above, beneath, and even some distance away from them. This is to say, how can distinct occupations be isolated within a site, especially when considerable mixing and displacement of deposits occurs when house pits may have been occupied

more than once over a long period of time. The following sequential list of events would have caused mixing and displacement of deposits in a house pit site, and must be recognized in order to interpret the relationships between occupation zones and cultural assemblages:

(1) the original construction of a pit house involves excavating a large circular pit, often with a circumscribing bench; placing support posts in the ground around the pit; lashing a wooden framework to the posts; covering this framework with matting; and finally covering the matting with the excavated fill. The common model for a plateau pit house is described by Teit (1900:192–195), variants of which are described by Ray (1939:132–137). The Teit model is generally well recognized, and further details about it will not be discussed. Concerning house pit size however, Ray (1942:177) records that the ethnographic house pits of the Canyon Shuswap were approximately five feet (1.5 metres) in depth and had a maximum diameter of 26 feet (8.0 metres).

(2) the buildup of the floor, or occupation zone, deposit within the structure was a result of normal daily activities, including food processing and implement manufacture, combined with roof deposit filtering through the roof matting. Most of the activity within a house pit occurred around the perimeter of the floor on or near the bench, where present, and not in the centre, which often contained the hearth area. Sometimes in excavation the floor zone is poorly defined, as in House Pit 3 in the Van Male site, and can only be distinguished by slight changes in soil colour and by increased concentrations of artifacts, chipping debitage and/or faunal remains. Cultural material found beneath floor zones is a consequence of its being constantly trodden on and slowly being pushed further down below the floor. Again in excavation, most of this material is found beneath the perimeter and bench areas of the house pit floors. This is also very well exemplified by House Pit 3 in the Van Male site.

(3) deposits outside pit houses, either on their roofs or between them were a result of normal outdoor activities, and accumulation of debris from the daily cleaning out of the pit houses. Debitage, for example, would be dispersed throughout the roof deposit if implements were manufactured on the roof. Teit (1900:295) mentions that it was women's regular duty to keep the dwellings clean on the inside. Marian Smith's informants from the mid-Fraser "...always stress the careful housekeeping involved in pit house living" (M. Smith 1947:258). Stratigraphy of house pit sites in the Kamloops locality indicates that waste debris might have been dumped rather close to the dwellings. An excellent example of a pit house being abandoned prior to its being cleaned out is House Pit 8 in the Harper Ranch site. Finally, habitation of house pit sites in autumn, before the pit houses were occupied for the winter, would also have contributed to deposition of cultural material in and between the depressions. House pit sites near fishing stations may have been inhabited during the annual Pacific salmon runs. Autumn occupation can be inferred by large quantities of fish vertebrae, indicating processing or consumption of fresh fish, that are found both inside and outside house pit depressions in certain sites, because in winter there was a much higher reliance upon the consumption of dried fish, which would have left few visible traces in the archaeological record assuming the bones were removed before drying. Also, as noted by Ham (1975:219–220), another important autumn activity besides the storing of salmon, roots and berries, would have been the construction or repair of dwellings for the coming winter.

(4) abandonment of a pit house was followed by several events that determine much of house pit stratigraphy. Data from the Kamloops locality indicate these events were, firstly, the slumpage of roof deposit down off the roof, forming a ridge around the depression, which either preceded or followed the rotting of roof matting and falling through of roof deposit onto the floor. These occurrences would lead to a greater buildup of roof deposit on the inside slopes of house pit depressions, around the floor perimeter, rather than in the house pit centre. The second event was the collapse into the depression of the wooden roof framework, if it had not been removed for construction of another dwelling.

(5) problems in stratigraphic interpretation would be compounded if the same depression was occupied more than once over a long period of time, and especially if succeeding occupations altered the original house pit dimensions.

The above discussion has outlined reasons for the mixing and displacement of deposits in a house pit context, indicating how it is oftentimes impossible to relate specific cultural materials to a specific occupation.

Kamloops Reserve Site (EeRb 3)

Located on the Kamloops Indian Reserve, the Kamloops Reserve site was originally one of the largest recorded prehistoric archaeological sites in the south-central interior. Figure 6, reproduced from aerial photographs taken in 1969, shows over 200 depressions bordering the entire bank of what was formerly a huge slough. Photographs on file at the Kamloops City Museum record that this slough was still in existence at the turn of this century. Harlan I. Smith (1900:402) records this large village site, and also a "burial-place", separated by a slough, and that this place "...has for a long time been used by Indians as a camping-ground". Between 1897–1899 he conducted "a series of explorations" concentrating on the burial site and also on graves associated with the Government site and the Government Hill site, which are both several hundred metres to the northeast (Smith 1900:434–437).

The large burial site, or mound, designated as EeRb 4, was approximately four metres high when it was completely levelled for industrial expansion in 1968 (Schurman 1969). Much of what was recovered from this destruction is now on display in several private collections in Kamloops. Much of the artifact description by Smith (1900) concerns implements and items of ornamentation from this site.

By 1968 construction of four industrial facilities and a road north of the former slough had disturbed an indeterminable amount of the Kamloops Reserve site. Since then, and before archaeological investigation occurred, the construction of a racetrack and parking lot destroyed all but the northeast portion of the site, leaving undisturbed only 31 of the more than 200 original depressions. The remaining portion of the site is located directly north of a John Deere warehouse between two other industrial maintenance and storage yards, approximately 1000 metres north of the South Thompson River and 800 metres east of the North Thompson River.

Measuring approximately 85 x 55 metres, it occupies relatively flat terrain and is bounded by another former slough along its northern edge (Fig. 7). Vegetation on the site includes low-lying sage brush and grasses, while the former slough supports stands of poplar and alder. The deposits are composed of stratified loam sediments of varying sand and clay consistencies.

The 31 surface depressions are all rimless and are relatively small and shallow. Average depression diameter is approximately four metres, and all are much less than one metre in depth. Possible contemporaneity of the depressions is suggested by their even spacing without overlapping. The site has been thoroughly surface collected, but untouched by pothunters' shovels; however, four depressions at the east and west margins of the site have been partially disturbed by the construction of fences (Wilson 1972).

Table 2. Artifacts types and percentages from the excavated portion of EeRb 3. N=812.

Artifact Type	Number	Percentage of EeRb 3's assemblage	Percentage of total sample N=1951
Chipped stone	804	99.0	41.2
Projectile points	25	3.1	1.3
Leaf-shaped	2	0.2	
Corner-notched, straight-stem	7	0.9	
Corner-notched, expanding-stem	14	1.7	
Stemmed	2	0.2	
Bifaces	274	33.7	14.0
Formed	75	9.2	3.8
Ovate	1	0.1	
Quadrilateral	1	0.1	
Triangular	12	1.5	
Backed knives	4	0.5	
Biface ends	31	3.8	
Medial Sections	5	0.6	
Miscellaneous	21	2.5	
Non-formed	199	24.5	10.2
Unifaces	478	58.8	24.5
Formed	3	0.4	0.15
Non-formed	475	58.4	24.3
Retouched	351	43.2	
Utilized	124	15.2	
Scrapers	9	1.1	0.5
End	5	0.6	
Side	1	0.1	
Continuous	1	0.1	
End and side	1	0.1	
Miscellaneous	1	0.1	
Drills	5	0.6	0.25
Expanding base	1	0.1	
Notched	4	0.5	
Gravers	6	0.7	0.3
Wide spur	2	0.2	
Point	4	0.5	
Microblades	3	0.4	0.15
Spall tool	1	0.1	0.05
Miscellaneous chipped stone	3	0.4	0.15
Ground and pecked stone	3	0.4	0.15
Abrader	1	0.1	
Shaft smoother	1	0.1	
Hammerstone	1	0.1	
Bone	3	0.4	0.15
Points	2	0.2	
Miscellaneous	1	0.1	
Antler	2	0.2	0.1
Wedge	1	0.1	
Miscellaneous	1	0.1	

Excavation

In investigating the Kamloops Reserve site, selected areas from both inside and outside four arbitrarily-chosen depressions were tested. Twenty-four 1 x 2 metre squares

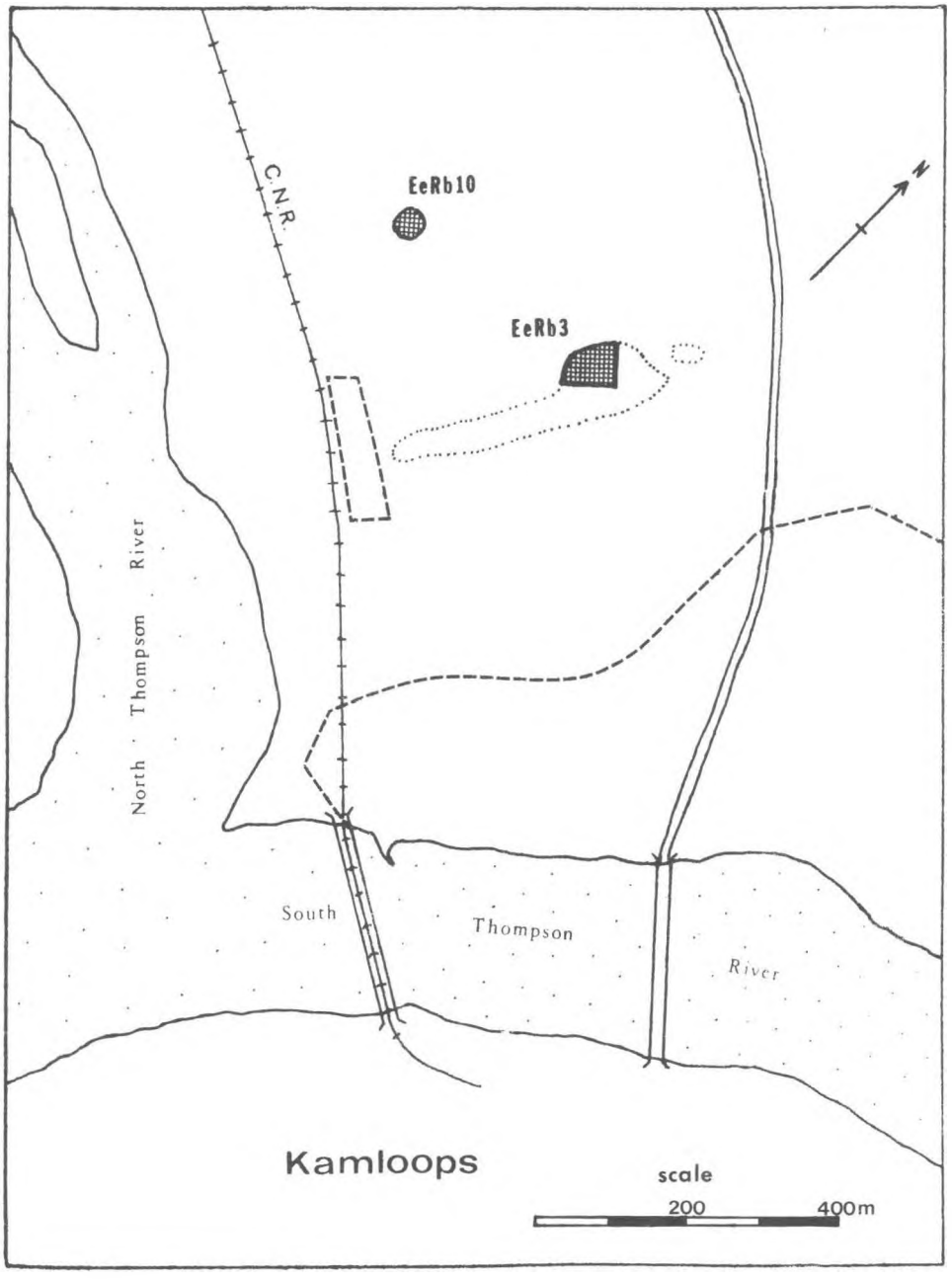


Fig. 6. Kamloops Indian Reserve showing extent of the Kamloops Reserve site as of 1968.

Extent of investigated archaeological sites as of 1971

Extent of Kamloops Reserve site, EeRb 3 as of 1968

Industrialized areas as of 1968

were dug in 10 cm arbitrary levels to sterile deposits, which averaged 110 cm below surface. Trenching and alternate-square excavation methods were employed in three of the depressions to produce information on natural and cultural stratigraphy, including pit house floor profiles, and to also obtain a cross-section or representative sample of cultural materials. Throughout some of the excavation a lack of distinct stratification in the loam deposits, including pit house floor compactness and colouration, made it difficult to expose entire floor surfaces, and to thus extract information concerning individual pit house activity areas.

A collection of artifacts from the surface of the disturbed portion of the site was also made in order to increase the size of the artifact sample.

Sample

A total of 812 artifacts and 6,284 pieces of debitage was excavated and 344 artifacts and 258 pieces of debitage were collected from the surface of the Kamloops Reserve site.Table 2 lists the excavated artifact types and their

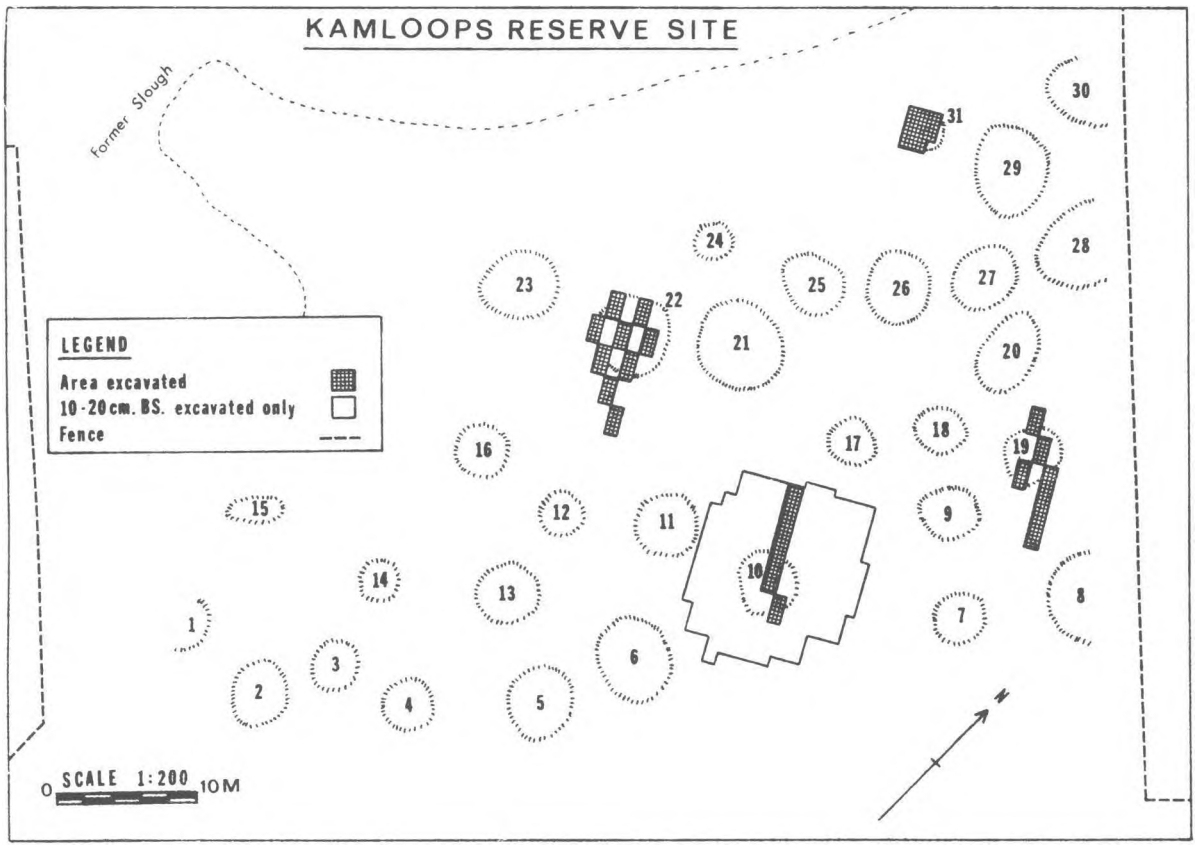


Fig. 7. The Kamloops Reserve site, EeRb 3.

percentages, both of this site's assemblage and of the total artifact sample from the four pit house village sites described in this study. Table 3 shows the distribution of artifact classes per excavated depression. Table 4 lists the artifact types from the surface collection. Large quantities of land mammal bone were excavated in comparison to the relatively small amounts of fish bone and shell.

Chronology

Excavation of the Kamloops Reserve site revealed four distinct living floors, in three of the four excavated depressions, and all four floors belong to the Thompson Phase.

The following is a detailed discussion of the excavation and contents of the four areas of excavation in the site. The descriptions of the excavation of inter-house pit areas (Fig. 7) are included with those of the nearest house pit, but it is not assumed that all the cultural materials found in the former are associated with the occupation of the latter.

House Pit 10

This is a shallow circular depression measuring five metres in diameter and 30–40 cm in depth.

Excavation

An 8 x 1 metre trench and a 2 x 1 metre square were excavated to an average depth of 130 cm below surface through the centre and outside of the depression. The surface sod was also scraped away from 68 2 x 1 metre squares in and surrounding the depression.

Stratigraphy and features

Excavation revealed the presence of one occupation floor associated with a small raised bench. It lies approximately 90 cm below surface and is composed of black loam. A second dark loam stratum with small bits of charcoal is discontinuous and lies about 20 cm above the floor and the bench. It represents the collapsed wooden roof structure of the pit house, as opposed to a second, later floor. The

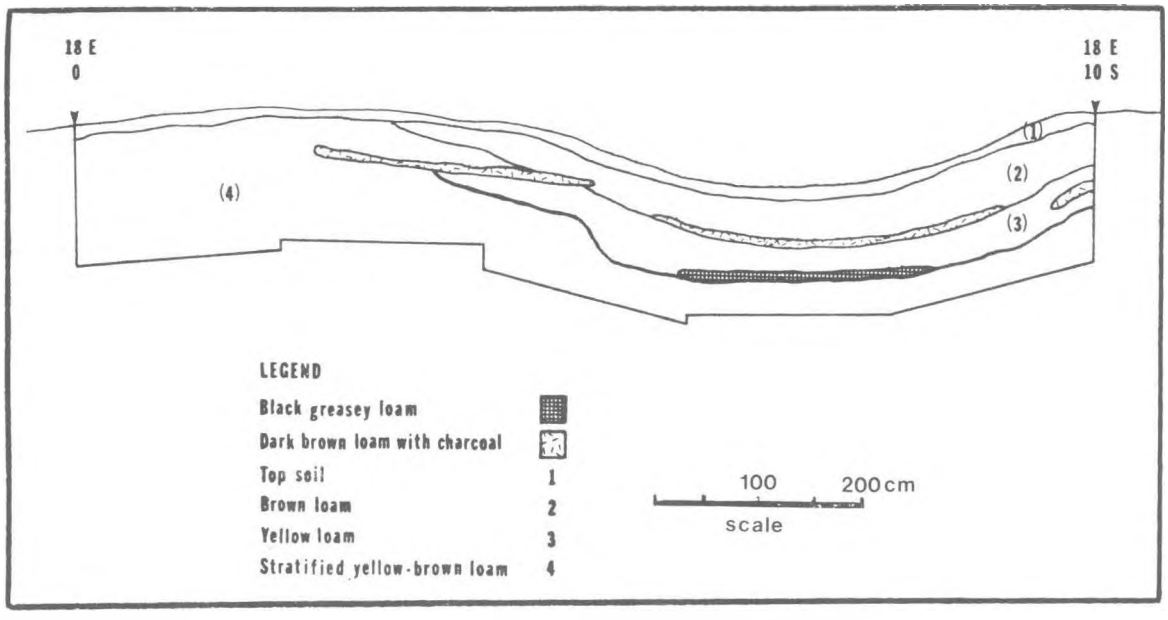


Fig. 8. Stratigraphic profile of House Pit 10, EeRb 3.

Table 3. Distribution of artifact classes from the excavated portion of EeRb 3 by depression. N=812.

Artifact Class	Depression			
	10	19	22	31
Projectile points	8	9	8	
Formed bifaces	23	27	25	
Non-formed bifaces	64	88	47	
Formed unifaces		2	1	
Non-formed unifaces	198	184	92	3
Scrapers	2	6	1	
Drills	1	1	3	
Gravers	4	1	1	
Microblades	3			
Spall tool		1		
Miscellaneous chipped stone	1			
Abrader	1			
Shaft smoother		1		
Hammerstone		1		
Bone points			2	
Miscellaneous bone			1	
Antler wedge		1		
Miscellaneous antler	1			
TOTALS	306	322	181	3

deposit between these two strata is roof material that has seeped through onto the floor before the wooden framework collapsed (Fig. 8). Far greater amounts of fire-cracked rock were found outside the depression, and this probably indicates the continual cleaning out of the pit house during its occupation.

The scraping off of the surface mat surrounding the depression revealed a pattern of 81 postmolds, 58 of which are aligned across the southeast margin of the depression (Fig. 9). This pattern does not conform to the descriptions of traditional pit house construction on the plateau by Teit (1900: 192–195) and others. Instead, the postmolds most likely represent one or more structures, such as a drying rack, which utilized the house pit depression after the pit house had collapsed. There is the assumption of course that the postmolds are not all associated with this particular depression.

Sample

Artifacts, debitage, and land mammal bone were distributed from 10–110 cm below surface throughout the excavation, but are concentrated beneath the inside slopes of the depression. Manufacturing and food processing activities within the pit house are indicated by high concentrations of debitage and land mammal bone in direct association with the floor lens and the two areas of the floor between the lens and both raised benches. Smaller concentrations of debitage and land mammal bone appear above the fallen roof layer, and are probably associated with the secondary use of the depression with the post mold pattern. This later structure(s) might have covered the entire depression, supported by a circumscribing wooden framework. Of the 306 artifacts and 3,306 pieces of debitage from inside and around House Pit 10, 32 and 344 respectively came from the scraped-off surface sod.

House Pit 19

This extremely shallow circular depression varies between 10–20 cm in depth, and averages five metres in

diameter.

Excavation

Investigation of this depression included a 6 x 1 metre trench outside the depression and three alternating 2 x 1 metre squares inside the depression, excavated to an average depth of 150 cm below surface.

Stratigraphy

The east-west stratigraphic profile through most of the depression indicates a single occupation zone, or floor. Above this zone is a dark loam lens representing the decayed fallen roof structure, and below it is a short black lens, too small to represent a floor, and which may indicate a non-habitational function of the depression, such as a cooking pit, before it was expanded and used as a house pit. The size of the original digging of the depression is delineated by the line between the natural stratified sand deposits and the disturbed sandy matrix. As in House Pit 10, the yellow stratum lying on top of the floor is roof material that has seeped through the wooden roof framework before its collapse (Fig. 10).

Table 4. Artifact types and percentages from the surface collected portion of EeRb 3. N=344.

Artifact Type	Number	Percentage of EeRb 3's assemblage	Percentage of total sample N=1951
Chipped stone	344	100.0	17.6
Projectile points	8	2.3	0.4
Corner-notched, straight-stem	1	0.3	
Corner-notched, expanding-stem	6	1.7	
Stemmed	1	0.3	
Bifaces	162	47.1	8.3
Formed	25	7.3	1.3
Triangular	3	0.9	
Backed knives	7	2.0	
Biface ends	6	1.7	
Medial sections	2	0.6	
Miscellaneous	7	2.0	
Non-formed	137	39.8	7.0
Unifaces	155	45.0	7.9
Non-formed	155	45.0	7.9
Retouched	101	29.3	
Utilized	54	15.7	
Scrapers	13	3.8	0.7
End	11	3.2	
Continuous	1	0.3	
Enc and side	1	0.3	
Drills	2	0.6	0.1
Expanding base	2	0.6	
Graver	1	0.3	0.05
Wide spur	1	0.3	
Spall tools	2	0.6	0.1
Miscellaneous chipped stone	1	0.3	0.05

Sample

Most of the 322 artifacts and 1,641 pieces of debitage from this house pit were found distributed throughout the vertical depth of the excavation outside the depression, and not beneath its inside slopes. Within the house pit the majority of the sample was directly associated with the living floor and the roof material beneath the collapsed roof framework.

House Pit 22

This circular depression measures approximately 70 cm deep and six metres in diameter.

Excavation

An alternating grid pattern of nine 2 x 1 metre squares was excavated inside and outside the depression.

Stratigraphy

This is the only excavated multi-occupational house pit in the site. Two relatively thin dark strata, which have very little charcoal, are present in the north end of the depression and merge in the south end, to represent at least two separate occupations. House pit benches are poorly defined for both occupations. A thin grey loam layer representing the collapsed roof framework lies above the floors (Fig. 11).

Sample

The majority of the 181 artifacts and 1,314 pieces of debitage in the sample came from beneath the north and east portions of the depression's inside slope, directly associated with the floors and the roof material immediately above them. In contrast to the two previous excavated house pits, relatively small amounts of the sample came from outside the depression.

Locus 1

Locus 1 contains the non-house pit circular depression, number 31, which measures three metres in diameter and 60 cm in depth. Its features and extremely small archaeological sample, and its location beside the former slough to the north of the site, indicates that it was used for a sweat lodge structure.

Excavation

Seven square metres of deposit were excavated to an average depth of 50 cm below surface, encompassing almost the entire depression.

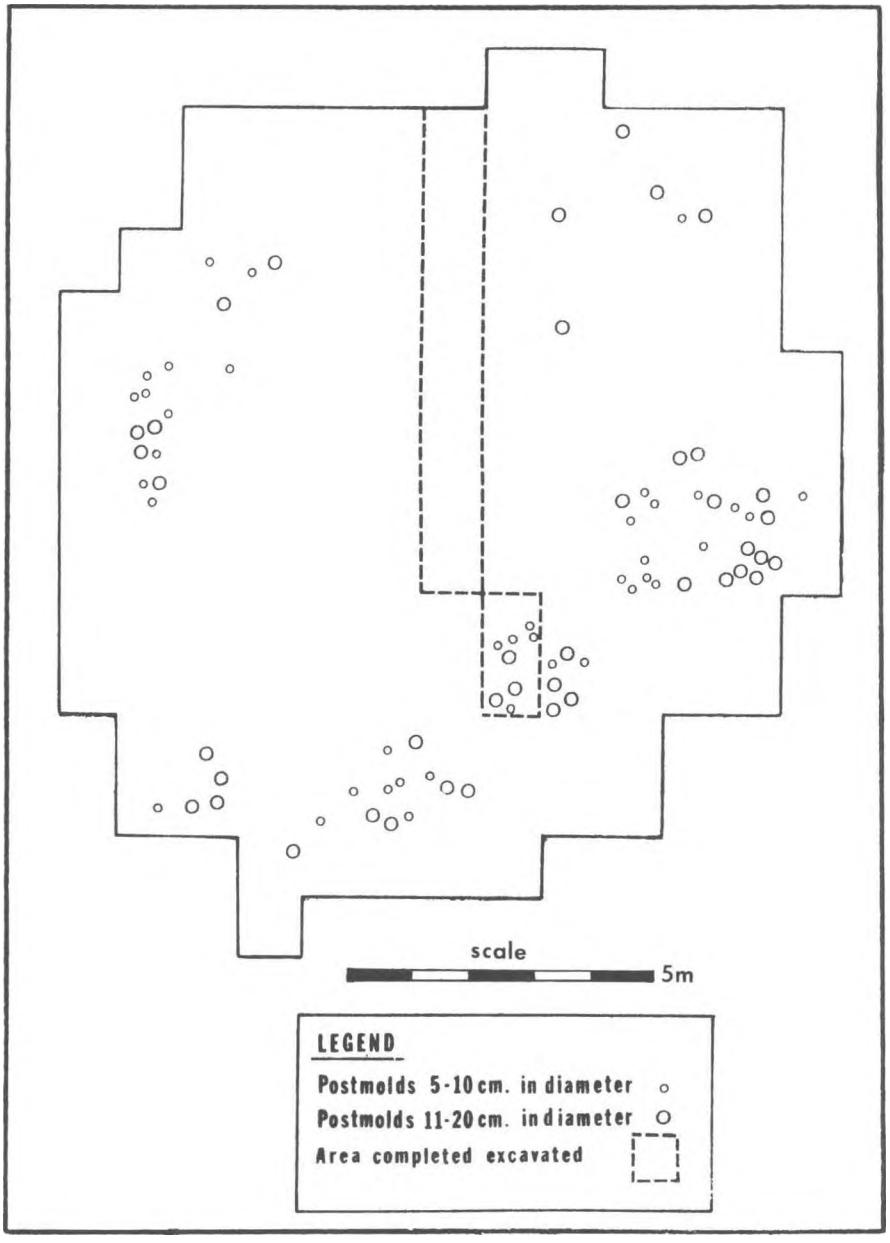


Fig. 9. Postmold pattern associated with House Pit 10, EeRb 3. For location see Figure 7.

Stratigraphy and features

In the centre of the depression, between 25–40 cm below surface, is a large concentration of small- to medium-sized rocks, many of which are fire-cracked. Beneath this concentration, from 45–60 cm below surface, is a thick black lens of charcoal-filled loam (Fig. 12). These features represent a large central hearth which was used to heat the rocks, upon which water would be poured to create steam.

Sample

Only three artifacts, 21 pieces of debitage and 12 small fragments of land mammal bone were found from both inside and outside the depression, indicating that it was not used for habitation.

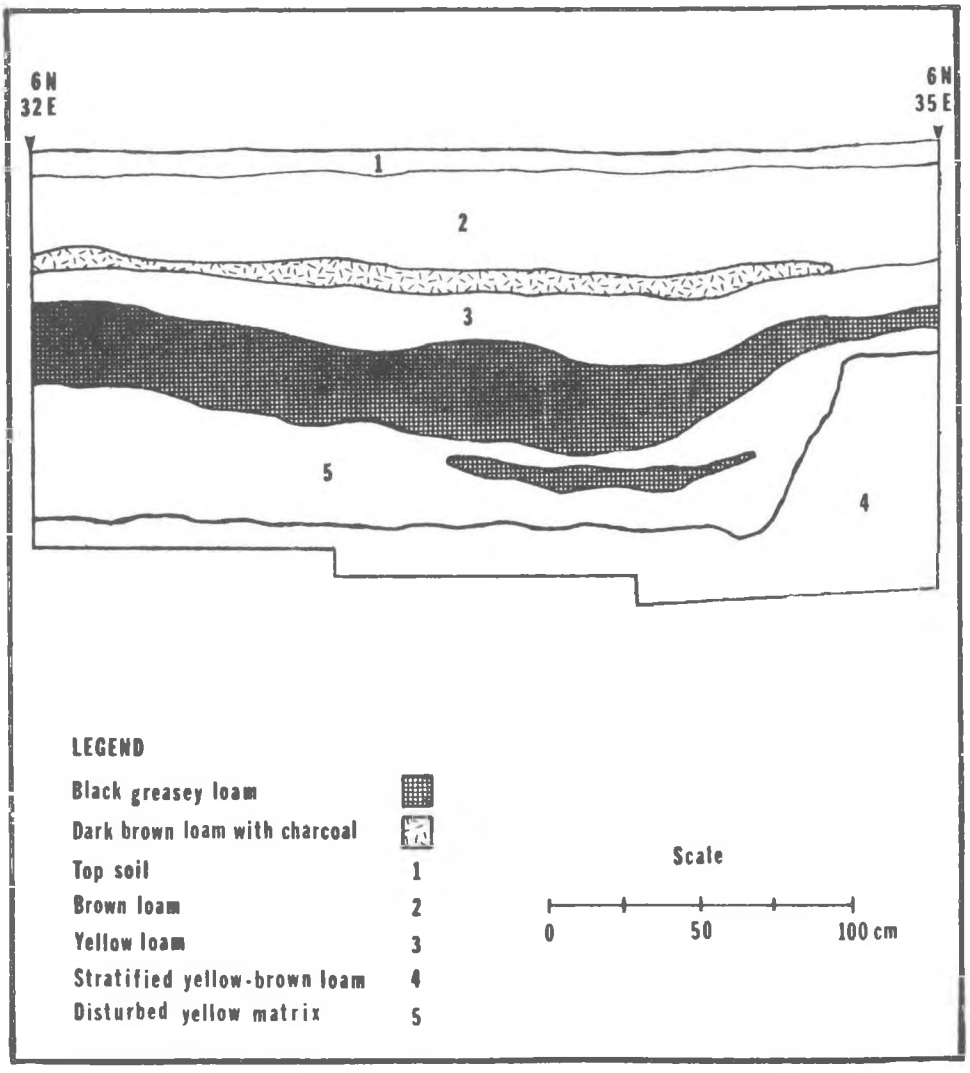


Fig. 10. Stratigraphic profile of House Pit 19, EeRb 3.

Surface Collection

Artifacts and debitage were collected from the surface of the disturbed portion of the Kamloops Reserve site to increase the sample size for the site. Systematic sampling was not attempted, because this portion was so badly disturbed and because it had already been scoured by pot-hunters. Only lithics were found in this collection.

Van Male Site (EeRb 10)

Located approximately 450 metres northwest of the Kamloops Reserve site, the Van Male site contains eight rimless house pit depressions and measures 65 x 55 metres (Fig. 13). Like the former site, its aeolian soil of sand and clay loams supports low-lying sage brush and grasses, typical of the entire area, with similar groves of poplar and alder in the former sloughs adjacent to the north and south margins of the site. There is no evidence of disturbance beyond a small dirt track cutting superficially through the northeast corner of the site. Most of the site is relatively level, except for a gentle slope, containing House Pits 1 and 2, leading down to the southern slough.

Excavation

Arbitrarily-selected test pits in House Pits 8, 1, and 3

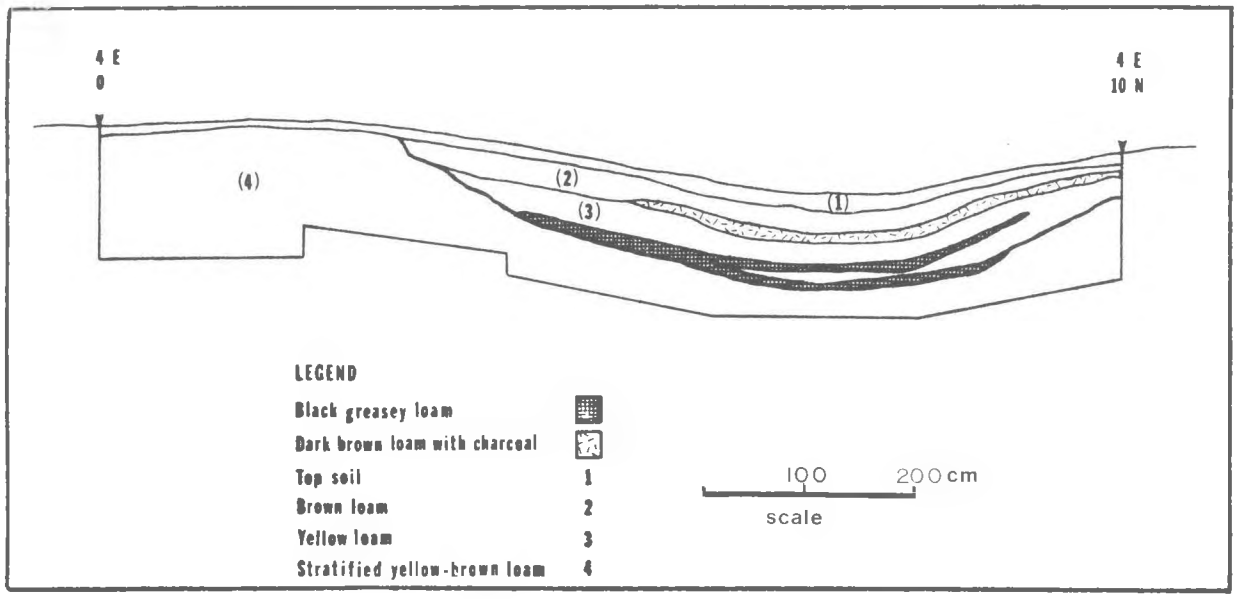


Fig. 11. Stratigraphic profile of House Pit 22, EeRb 3.

revealed that the latter would yield the most cultural data, and the investigation of this house pit attempted to delimit its cultural zone. Two test pits, referred to as Locus 1 and 2, were also excavated outside the house pits. A total of 75 cubic metres of deposit was excavated in 10 cm arbitrary levels from 22 1x2 metre units.

Stratigraphy

The excavation of House Pit 3 yielded both a north-south and an east-west stratigraphic profile through the entire depression (Fig. 14). One cultural and three natural loam deposits were identified. Throughout the deposits variation in soil colour was minimal, and since a hard-packed, well-trodden floor surface was also absent, the occupation zone in House Pit 3 was defined by slight differences in soil texture and by the distribution of cultural and associated material. A pit house bench appeared only in the north and west excavation units of this house pit. The occupation floor of House Pit 4 was well defined however by the presence of a 10–20 cm thick charcoal lens, associated with fire-cracked rock, basalt flakes, and fragments of land mammal bone.

Sample

A total of 267 artifacts and 1,027 pieces of debitage were uncovered. The artifact types are listed in Table 5. Fifty-eight percent of the artifacts and 68% of the debitage

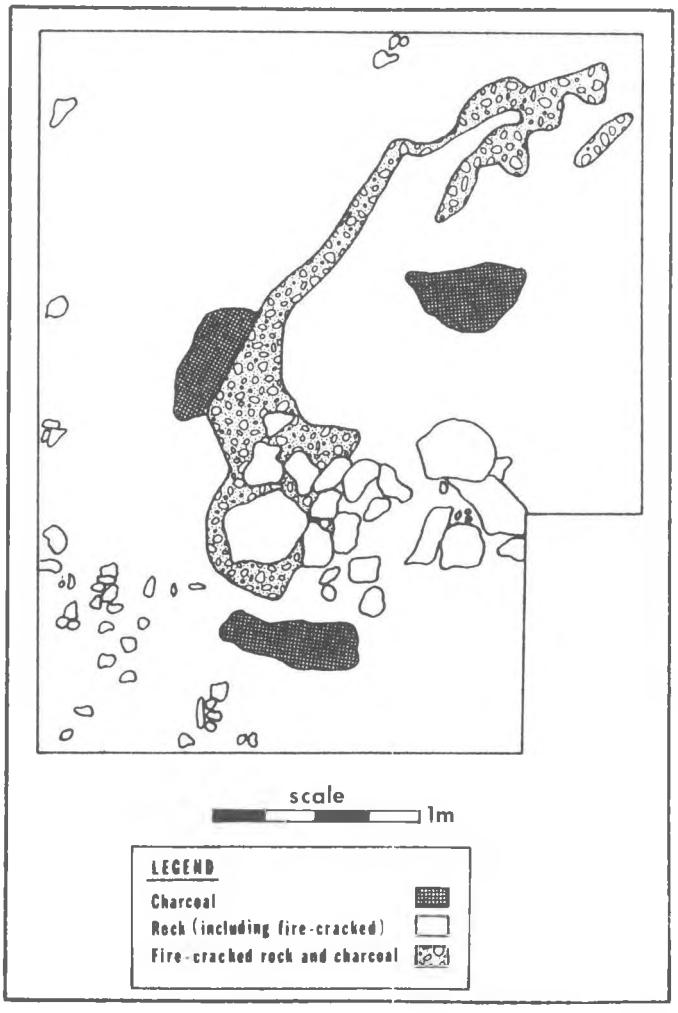


Fig. 12. Plan of depression 31, EeRb 3. For location see Figure 7.

Table 5. Artifact types and percentages from EeRb 10. N=267.

Artifact Type	Number	Percentage of EeRb 10's assemblage	Percentage ot total ample N=1951
Chipped stone	250	93.6	12.8
Projectile points	18	6.7	0.9
Leaf-shaped	3	1.1	
Corner-notched, straight-stem	2	0.7	
Corner-notched expanding-stem	5	1.9	
Stemmed	8	3.0	
Bifaces	90	33.7	4.6
Formed	24	9.0	1.2
Ovate	3	1.1	
Backed knives	1	0.4	
Biface ends	14	5.2	
Medial sections	4	1.5	
Miscellaneous	2	0.7	
Non-formed	66	24.7	3.4
Unifaces	139	52.0	7.1
Formed	1	0.4	0.05
Non-formed	138	51.7	7.1
Retouched	82	30.7	
Utilized	56	21.0	
Graver	1	0.4	0.05
Point	1	0.4	
Macroblade	1	0.4	0.05
Pièce esquillées	1	0.4	0.05
Ground and pecked stone	6	2.2	0.3
Abrader	1	0.4	
Hammerstones	2	0.7	
Miscellaneous	3	1.1	
Bone	5	1.9	0.25
Points	2	0.7	
Miscellaneous	3	1.1	
Antler	5	1.9	0.25
Wedge	1	0.4	
Projectile	1	0.4	
Miscellaneous	3	1.1	
Shell	1	0.4	0.05

came from within House Pit 3. This material was concentrated on the top and in the upper stratigraphic levels of the inside slope, associated with the pit house bench, and it decreased in frequency towards the centre of the depression. Figure 15 shows the horizontal distribution of artifacts and debitage in House Pit 3. Only fish bones were concentrated near the house pit centre. A list of identified land mammal species recovered during excavation is enclosed in Appendix D. The south end of the excavation in House Pit 3 represents activity outside the house pit, and may be partially composed of material slumping off the south-facing roof, before the decay or removal of the wooden posts and beams. Locus 2 contained much more cultural material than Locus 1, and may represent an orientation of activity towards the southern edge of the site beside the slough.

Chronology

As represented by the contents of House Pit 3, the Van Male site is a single component site, belonging to the Thompson Phase.

Table 6. Artifact types and percentages from EeRb 11. N=86.

Artifact Type	Number	Percentage of EeRb 11's Assemblage	Percentage of total sample N=1951
Chipped stone	79	91.8	4.0
Projectile points	8	9.3	0.4
Corner-notched, expanding-stem	5	5.8	
Side-notched	3	3.5	
Bifaces	25	29.0	1.3
Formed	12	13.9	0.6
Ovate	2	2.3	
Biface ends	4	4.6	
Medial sections	1	1.2	
Miscellaneous	5	5.8	
Non-formed	13	15.1	0.7
Unifaces	40	46.5	2.0
Non-formed	40	46.5	2.0
Retouched	38	44.2	
Utilized	2	2.3	
Scrapers	2	2.3	0.1
End	1	1.2	
Continuous	1	1.2	
Gravers	2	2.3	0.1
Miscellaneous	2	2.3	
Microblade	1	1.2	0.05
Macroblade	1	1.2	0.05
Ground and pecked stone	1	1.2	0.05
Abrader	1	1.2	
Bone	6	7.2	0.3
Tube	1	1.2	
Awl	1	1.2	
Point	1	1.2	
Miscellaneous	3	3.5	

Leonard Site (EeRb 11)

Also located on the Kamloops Indian Reserve, the Leonard site borders the South Thompson River and is situated approximately 3000 metres east of the confluence of the North and South Thompson Rivers and 600 metres west of the Yellowhead Highway bridge. An indeterminable amount of the site has been eroded away by the annual

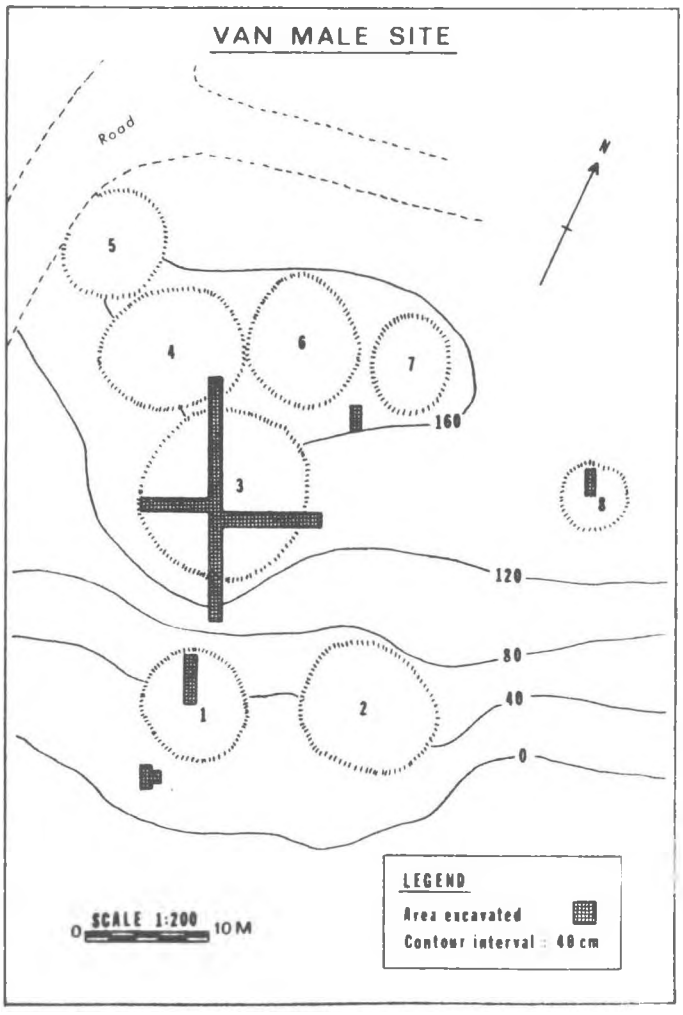


Fig. 13. The Van Male site, EeRb 10.

flooding of the South Thompson River, and six house pit depressions remained, adjacent to the shoreline, at the time of investigation. Since then, the entire site has been obliterated by earth-moving equipment, and rendered useless to further study or preservation. The investigation was restricted to what was supposedly the only threatened portion of the site, containing only the easternmost depression, which was already partially disturbed.

Excavation and stratigraphy

Excavation consisted of seven 1 x 1 metre squares, four within the depression, House Pit 1, and three in Locus 1, 40 metres to the west along the east rim of a much larger depression, House Pit 2 (Fig. 16). Depth of excavation averaged 130 cm below surface through sand and clay silts. The single feature uncovered was a small hearth composed of ash and fire-cracked rock, 90 cm below surface in Locus 1.

Sample and chronology

The Leonard site contains two occupation components, the earlier one belonging to the Thompson Phase and the later one to the Kamloops Phase. The earlier occupation, Component 1, contains all the excavated corner-notched dart points, and is found in House Pit 1 and in the lower levels of Locus 1. The later occupation, Component 2, contains all the arrow points and an incised bead fragment, and is concentrated in the upper levels of Locus 1. The 82 excavated and four "surface" artifacts, from the eroding bank, are listed in Table 6.

Even though a small amount of material from Component 2 was found in the very upper levels of House Pit 1, habitation of the house pit occurred only during the Thompson Phase. Possible related cultural activity outside the house pit at this time is indicated by the hearth feature in the early levels of Locus 1, which gives no indication of belonging to either a habitation feature or a storage pit. Distributions of debitage, which numbers 1,222 pieces, and of associated faunal material also support the presence of two periods of occupation in the Leonard site, and are shown in Figure 17.

Identifiable land mammal bone is mostly mule deer *(Odocoileus hemionus hemionus),* and snowshoe hare *(Lepus americanus pallidus),* with wolverine *(Gulo luscus luscus)* and beaver *(Castor canadensis sagittatus)* also present, but in much smaller quantities.

Harper Ranch Site (EdRa 9)

Located on the Harper Ranch, on the north shore floodplain of the South Thompson River, the site is approximately 20 km east of Kamloops and 2000 metres west of the Canada Lafarge cement plant. Bordering the river, the site measures 700 x 40 metres, and contains 15 house pits and 156 cache pits (Fig. 18). Distance from the mean water level mark varies from 10 to 25 metres along the entire length of the site. Severe flooding of the river often occurs however, as in 1972 when the entire site was inundated with flood water. Fortunately the gradual slope of the embankment leading into the water and its relatively dense vegetation of poplar, alder, cottonwoods, scrubs and bushes, prevent erosion of the site into the river.

The topography of the site is relatively flat, except for the slightly raised mound, bordering the shoreline, that contains the house pits and cache pits. Most of the site is covered with grasses, and it is sometimes used as pasture for cattle. The owners however have plans to plow and irrigate

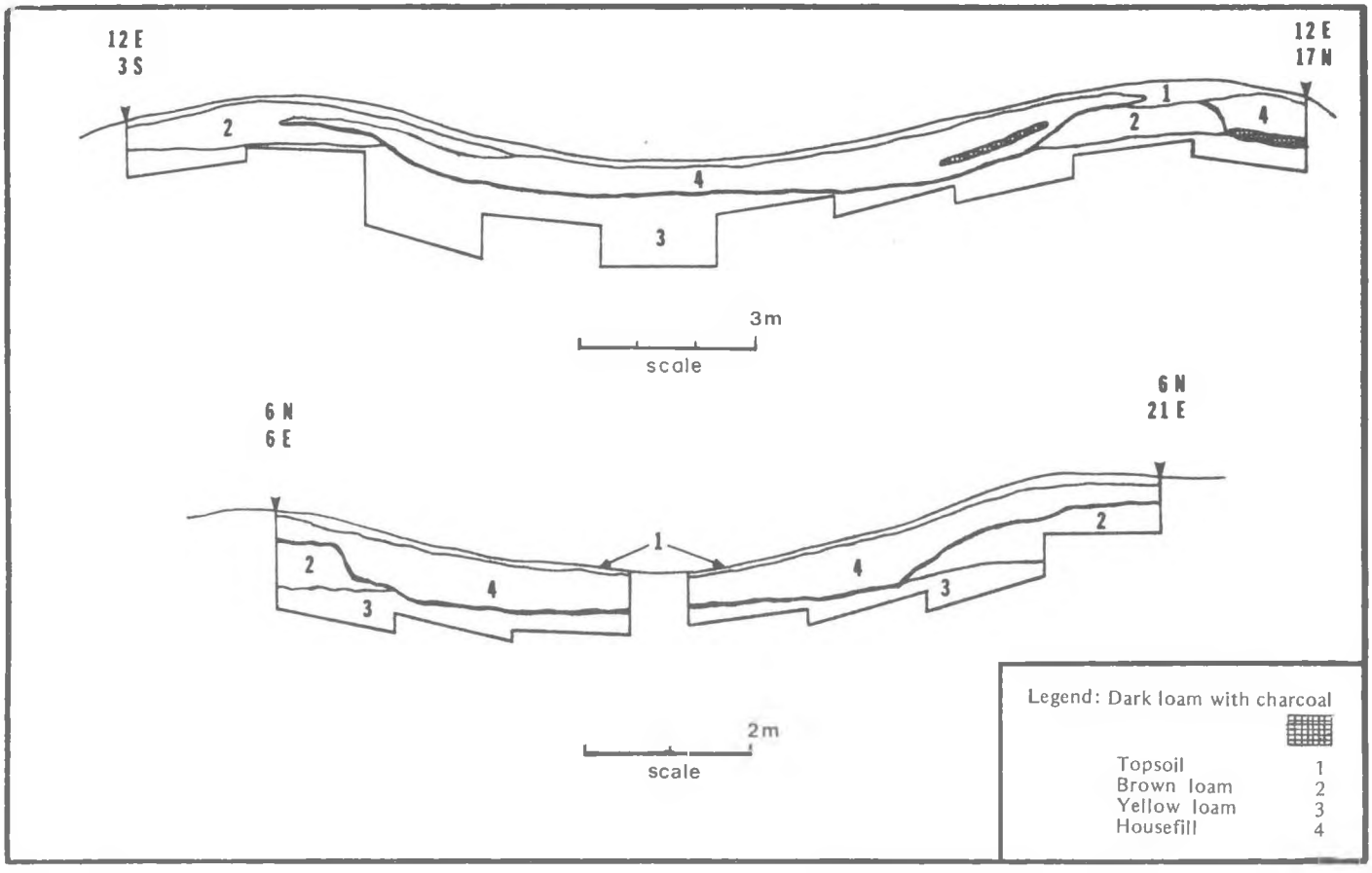


Fig. 14. Stratigraphic profiles of House Pit 3, EeRb 10.

most the site for alfalfa cultivation. The soil deposit is composed of clay and sand loams with a very high alkaline content.

All the house pits have circumscribing ridges, and all are round- to oval-shaped depressions, varying from 4–10 metres in diameter, with an average diameter of six metres, and an average depth of less than one metre. The shape of House Pit 10 is rectangular, and it indicates the presence of a pit house side entrance, facing the river. Side entrances are exceedingly rare in Plateau pit house construction, but their use has been verified by a native informant from Chase, who claims to have spent the first twenty years of her life, near the end of the last century, living in a pit house that possessed a side entrance. The cache pits are fairly evenly distributed throughout the site, except for two areas of concentration, in the vicinity of House Pit 6 and between House Pits 9 and 10.

Disturbance of the site has been minor. Plowing of fields just to the north of House Pits 1 and 2 may have destroyed some of this portion of the site, and a shallow dirt track, bisecting the site lengthways, probably has disturbed the site to a minimal degree. There is evidence of the pothunters' shovel only in House Pit 6.

Excavation

Investigation was concentrated in areas that, through testing, yielded the most archaeological information. A total of 115 1 x 1 metre squares were excavated in arbitrary 10 cm levels, except in House Pit 7, in which the burnt fallen roof structure of the pit house was uncovered by excavating the shallow deposit above it as a single natural level. Ten of the 15 house pits were excavated, along with four cache pits, one in Locus 1, between House Pits 4 and 5, and three in Locus 2, between House Pits 5 and 6. The maximum depth of excavation was 230 cm below surface, with an average depth per square of 90 to 100 cm. A total of 104 cubic metres of deposit was excavated. Investigations in the house pits were concentrated on top of house pit ridges and on their inside slopes, in an attempt to obtain a suitably large artifactual sample and data on house pit cultural deposits. Figures 19 through 21 show the excavation units in the east, central and west segments of the site respectively.

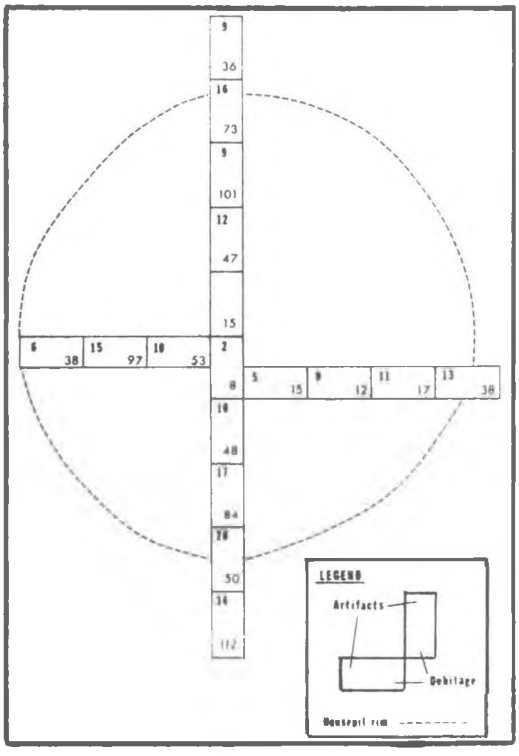


Fig. 15. Horizontal distribution of artifacts and debitage in House Pit 3, EeRb 10.

Sample

Excavations at the Harper Ranch site yielded 442 artifacts and 6446 pieces of debitage. Table 7 lists the artifact types, and Table 8 shows their distribution by house pit and locus.

Chronology

All three cultural phases in the Kamloops locality sequence, the Thompson, Kamloops, and Proto-historic, are present in one or more of the 13 separate occupation zones in this site.

The following is a detailed discussion of the excavation and contents of the ten investigated house pits and the two loci.

House Pit 1

This is the easternmost depression in the site, and is oval-shaped, with a small ridge, measuring 5 x 7 metres in diameter and 50 cm in depth.

Excavation

Five 1 x 1 metre squares were excavated on the north and west portion of the house pit ridge, one on the east inside slope, and one between House Pits 1 and 2.

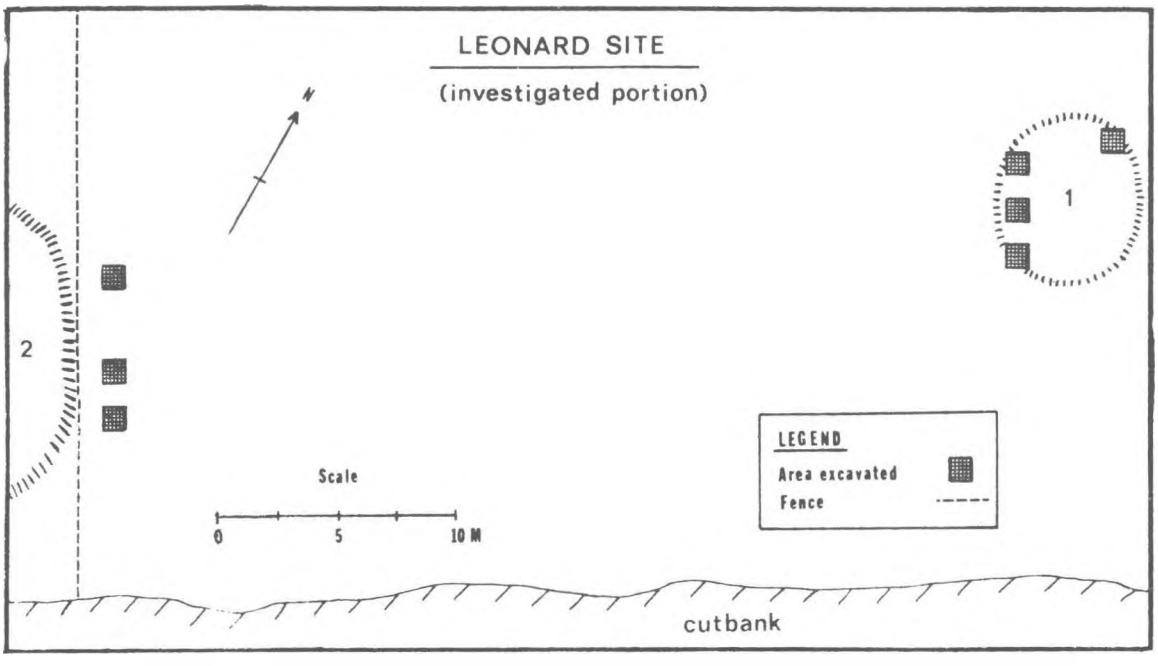


Fig. 16. Investigated portion of the Leonard site (EeRb 11).

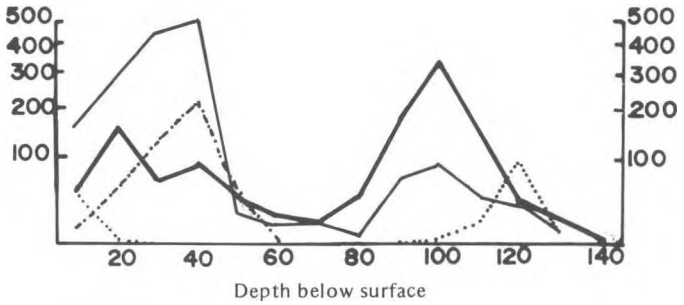


Fig. 17. Temporal distribution of debitage and associated fauna in EeRb 11, computed on a 3 cycle semi-log graph. Symbols are:

Stratigraphy

Two stratigraphic zones are present with this depression. The cultural deposit of brown loam extends from the surface to 40 cm below surface, and lies above a yellow-brown sandy deposit.

Sample

The cultural deposit represents habitation of the depression, and contains all of the land mammal bone, fish and shell remains from this sample. However, 13 of the 19 chipped stone artifacts, and most of the debitage and fire-cracked rock were found in the deposit beneath this cultural stratum, and may represent an earlier utilization of this location before the depression was dug.

Chronology

Lack of diagnostic material hinders the placing of this sample into a specific temporal unit. But because of the shape of the depression and the shallowness of the cultural deposit, the house pit occupation is probably a Kamloops Phase one, and the earlier material, again because of its stratigraphic depth, may be Thompson Phase, but this is not definite.

House Pit 3

Located beside the largest house pit in the site, this small circular depression averages four metres in diameter and 70 cm in depth.

Excavation

Two 1 x 1 metre squares were excavated on the west inside slope.

Stratigraphy

The dark brown cultural deposit extends down to approximately 30 cm below surface, lying above a yellow-grey sterile natural deposit.

Sample

The one artifact, a chipped stone biface, and all of the 15 pieces of debitage, land mammal bone and fish remains are from the dark cultural deposit, representing a single occupation, and were concentrated on the upper part of the inside slope.

Chronology

From this limited sample, phase affiliation is difficult to determine, but it is probably a Kamloops Phase occupation, because of the shallowness of the cultural deposit and the lack of any historic items.

House Pit 4

This is the largest circular house pit in the site, measuring

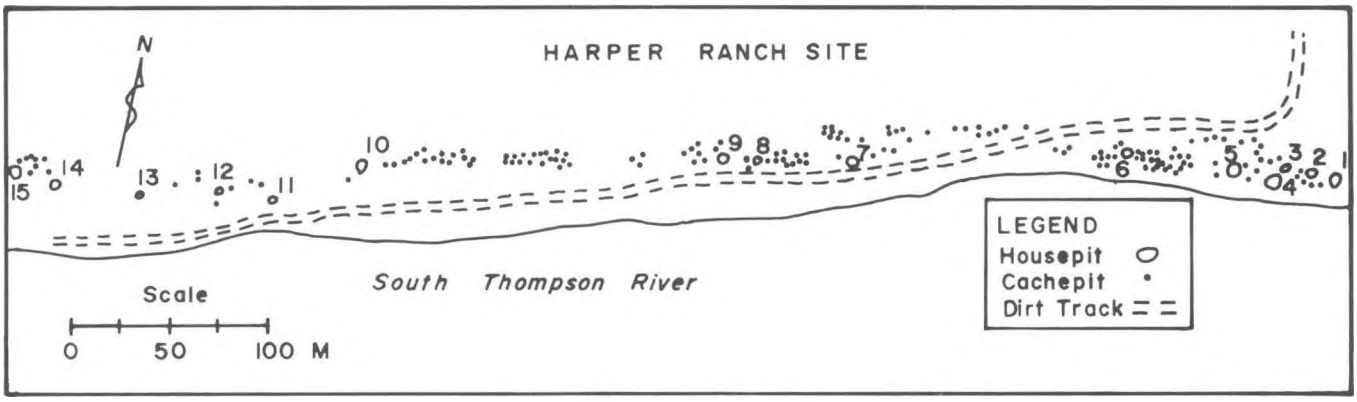


Fig. 18. Harper Ranch site (EdRa 9).

Table 7. Artifact types and percentages from EdRa 9. N=442.

Artifact Type	Number	Percentage of EdRa 9's assemblage	Percentage of total sample N=1951
Chipped stone	375	84.8	19.2
Projectile points	44	9.9	2.2
Leaf-shaped	1	0.2	
Corner-notched, straight-stem	9	2.0	
Corner-notched, expanding-stem	13	2.9	
Side-notched	18	4.1	
Stemmed	3	0.7	
Bifaces	192	43.4	9.8
Formed	88	19.9	4.5
Ovate	5	1.1	
Pentagonal	4	0.9	
Quadrilateral	1	0.2	
Rectanguloid	1	0.2	
Rhomboidal	2	0.4	
Triangular	5	1.1	
Hafted	1	0.2	
Backed knives	3	0.7	
Biface ends	35	7.9	
Medial Sections	6	1.4	
Miscellaneous	25	5.7	
Non-formed	104	23.5	5.3
Unifaces	103	23.3	5.3
Non-formed	103	23.3	5.3
Retouched	92	20.8	
Utilized	11	2.5	
Scrapers	25	5.7	1.3
End	10	2.3	
Side	4	0.9	
Continuous	5	1.1	
End and side	2	0.4	
Miscellaneous	4	0.9	
Drills	3	0.7	0.15
Expanding base	2	0.4	
Notched	1	0.2	
Graver	1	0.2	0.05
Narrow spur	1	0.2	
Microblade	1	0.2	0.05
Pendant	1	0.2	0.05
Miscellaneous chipped stone	5	1.1	0.3
Ground and pecked stone	3	0.7	0.15
Abrader	1	0.2	
Ground point	1	0.2	
Hand maul	1	0.2	
Bone	45	10.2	2.3
Beads	9	2.0	
Tubes	14	3.2	
Awls	4	0.9	
Points	3	0.7	
Composite toggling harpoon valve	1	0.2	
Miscellaneous	14	3.2	
Antler	3	0.7	0.15
Wedges	2	0.4	
Miscellaneous	1	0.2	
Tooth	1	0.2	0.05
Copper	4	0.9	0.2
Beads	3	0.7	
Tubing	1	0.2	
Historic	11	2.5	0.6

nine metres in diameter and 120 cm in depth. Its inside slopes are relatively steep.

Excavation

Thirty-three 1 x 1 metre squares were excavated circumscribing the top and the outside slopes of the house pit ridge, to an average depth of 110 cm below surface.

Stratigraphy and features

Several charcoal lenses are present in and beneath the ridge in all but the southern segment of the house pit's outside slope. Figure 22 shows the surface profile of the depression and a portion of the excavation. These lenses represent the ground surface during various periods of the house pit's occupation (Fig. 23). Their absence on the south-facing outside slope is probably because this slope is closest to the river and is subjected to annual flooding. In the late spring of 1973, for example, the high water mark was within one vertical metre of the top of this southern ridge. The only major feature uncovered in the excavation of House Pit 4 was a cache area, which may have been used as a cooking pit, just to the northwest of the depression (Fig. 24).

Sample

The sample from House Pit 4 is comprised of 237 artifacts, of which 210 are chipped stone, and 2840 pieces of debitage. There are two components present; the later one is associated with the house pit depression, its ridges and their charcoal lenses, the cache area, and most of the land mammal bone, and all of the shell and fish remains. The earlier component contains just over half of the chipping debitage, and approximately 25% of the artifacts, all being chipped stone. It was found from approximately 70–230 cm below surface beneath the south, east, and northwest segments of the house pit ridge, and it was not associated with any living floors.

Chronology

The artifacts and two radiocarbon dates place this multi-

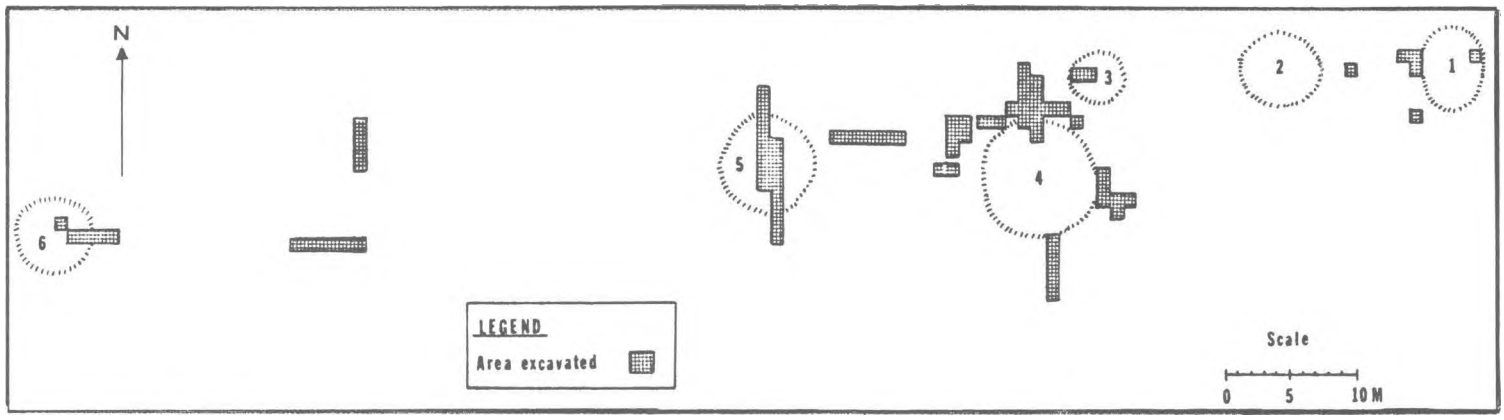


Fig. 19. Excavation units in the east portion of EdRa 9.

component sample into the Thompson and Kamloops Phases. The former is represented by large corner-notched projectile points, while all the bone artifacts and side-notched projectile points belong to the later Kamloops Phase.

House Pit 5

This circular depression is eight metres in diameter and 90–100 cm in depth, and it has an extremely steep inside slope on its south and east sides (Fig. 25).

Excavation

Two 4 x 1 metre parallel trenches were excavated through the north–south axis of the depression. Maximum depth of excavation reached 160 cm below surface.

Stratigraphy and features

Two zones of occupation are present in this depression (Fig. 26). The earlier one is a poorly defined floor, 40–45 cm below surface in the centre of the depression. It is represented by a dark brown lens, approximately 220 cm in length, with an ash hearth lying directly above it. The later occupation includes a much wider cultural zone just beneath the surface, and includes the house pit ridges, and the thin charcoal lens beneath the ridge that represents the ground surface at the top of this second occupation. The black lens with charcoal on top of this occupation is the burnt fallen roof structure of the pithouse.

Sample

Of the 89 artifacts in this sample, 77 are chipped stone, six bone, one antler, one tooth, one native copper, and

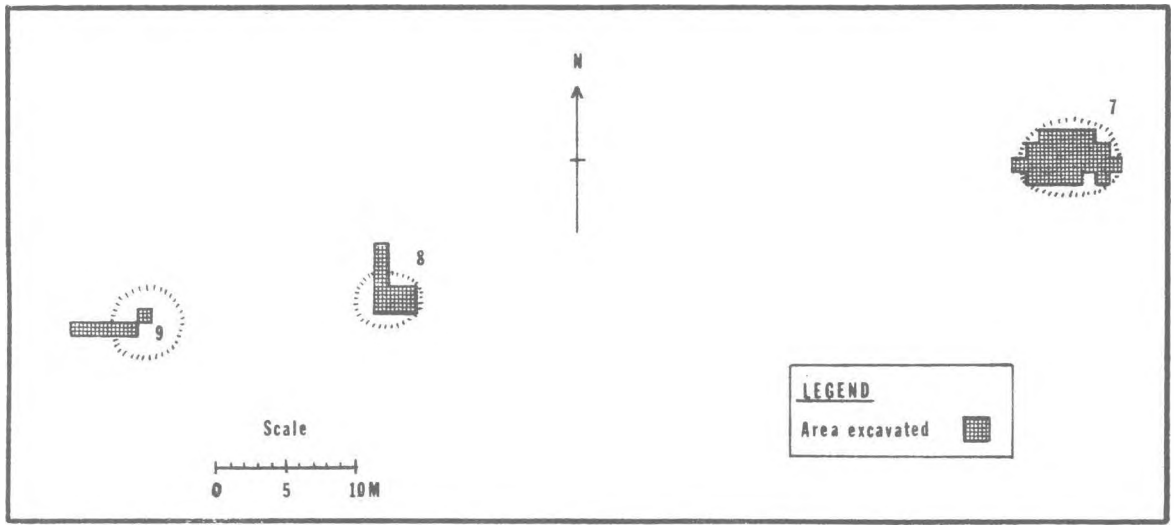


Fig. 20. Excavation units in the central portion of EdRa 9.

three are historic. Debitage totalled 2557 pieces. Of the ten projectile points, nine are corner-notched and are associated with the earlier occupation, while all the bone, antler, tooth, copper and historic artifacts are associated with the later occupation. Fish remains and fresh-water mussel shell are found only in the ridge and in both cultural floor deposits, while land mammal bone, and debitage are found throughout the excavated deposits.

Chronology

There is material from at least two cultural phases in this sample. The earlier occupation is a Thompson Phase component, and the second occupation, which saw the enlarging of the original depression, is definitely dated to the Proto-historic Phase; it may however have originated in earlier Kamloops Phase times.

House Pit 6

This circular depression averages six metres in diameter and 70 cm in depth, and is located in the midst of a concentration of cache pits.

Excavation

Five 1 x 1 metre squares were excavated through the centre, inside slope and ridge of the depression, and into the northwest corner of an adjacent cache pit.

Stratigraphy and features

In this depression a thin dark lens with charcoal indicates the pit house floor, and lies between 5–20 cm below surface. Beneath it, dug into the yellow-grey natural deposits, is a cache area, approximately 120 cm wide and 70 cm deep. It had been used, and then abandoned and had filled in before the house pit was dug (Fig. 27). The cache pit outside the depression is approximately 80 cm deep.

Sample

Most of the sample of 20 artifacts and 191 pieces of debitage was found on the inside and outside slopes of the house pit ridge, while most of the land mammal bone, fish remains and all of the birch bark was associated with the two caches.

Chronology

The presence of a small Kamloops side-notched projectile point, associated with the extremely shallow living floor, and a lack of any historic items, probably dates this house pit occupation towards the end of the Kamloops Phase. The cache area inside the depression is earlier than the occupation and not associated with it, but it is not assigned any specific date, beyond the possibility that it is probably contemporary with the surrounding cache pits.

Table 8. Distribution of artifact types from EdRa 9 by house pit and locus. N=442.

Artifact Type	House Pit										Locus	
	1	3	4	5	6	7	8	9	10	12	1	2
Projectile points												
Leaf-shaped			1									
Corner-notched, straight-stem			6	2		1						
Corner-notched, expanding-stem			6	7				1				
Side-notched			13		1	3						
Stemmed			2	1								
Formed bifaces												
Ovate	1		3	1								
Pentagonal			3									1
Quadrilateral			1									
Rectanguloid			1									
Rhomboidal			1	1								
Triangular			2	2		1						
Hafted				1								
Backed knives			2			1						
Biface ends	2		18	5		6		3			1	
Medial sections			5	1								
Miscellaneous	1	1	14	5	2	1				1		
Non-formed bifaces	2		54	23	8	9	1	3		1	3	
Non-formed unifaces												
Retouched	10		53	16	6	3				1	2	1
Utilized	1		7	2	1							
Scrapers												
End			4	3	1	1				1		
Side			4									
Continuous			3	1		1						
End and side			1	1								
Miscellaneous			2	1		1						
Drills												
Expanding base	1			1								
Notched			1									
Graver												
Narrow spur	1											
Microblade												1
Pendant			1									
Miscellaneous chipped stone			2	3								
Ground and pecked stone												
Abrader											1	
Ground point			1									
Hand maul						1						
Bone												
Beads			8								1	
Tubes			6	4		1		3				
Awls			2					1				1
Points				1	1	1						
Composite toggling harpoon valve			1									
Miscellaneous			7	1		3		2				1
Antler												
Wedges				1					1			
Miscellaneous			1									
Tooth				1								
Copper				1		1			1	1		
Historic			1	3		1			6			
TOTALS	19	1	237	89	20	36	1	13	8	5	8	5

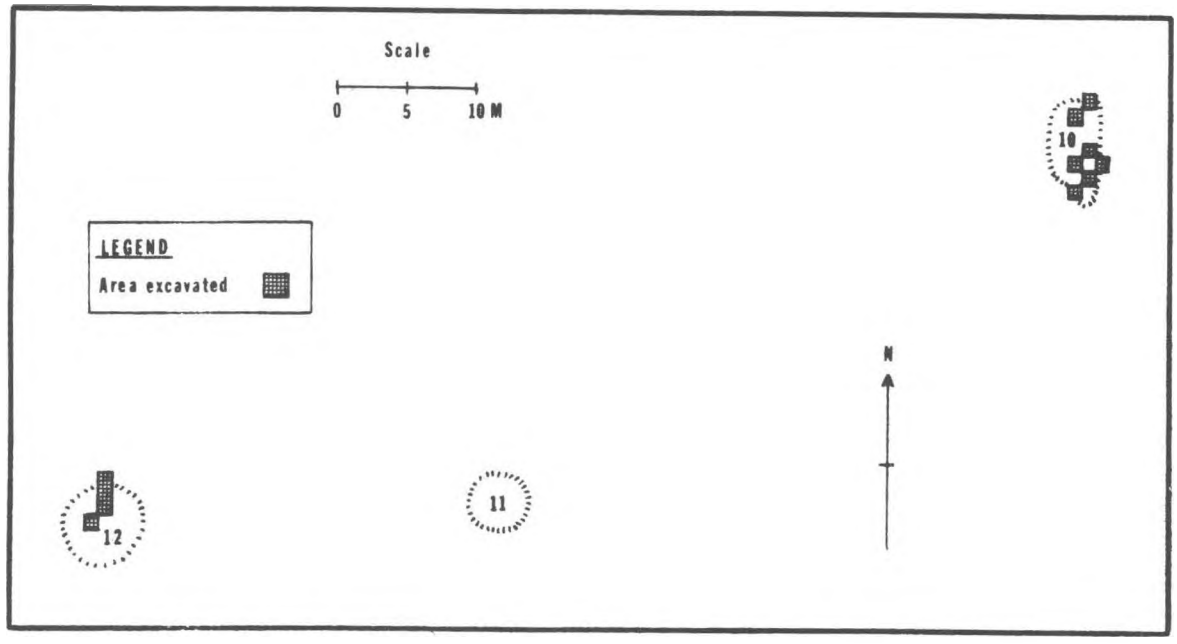


Fig. 21. Excavation units in the west portion of EdRa 9.

House Pit 7

This is an oval-shaped depression that ranges from five to seven metres in diameter and whose maximum depth is 85 cm. It is centrally located in the site.

Excavation

Almost the entire depression was excavated by 23 1 x 1 metre squares, to an average depth per square of 30 cm below surface.

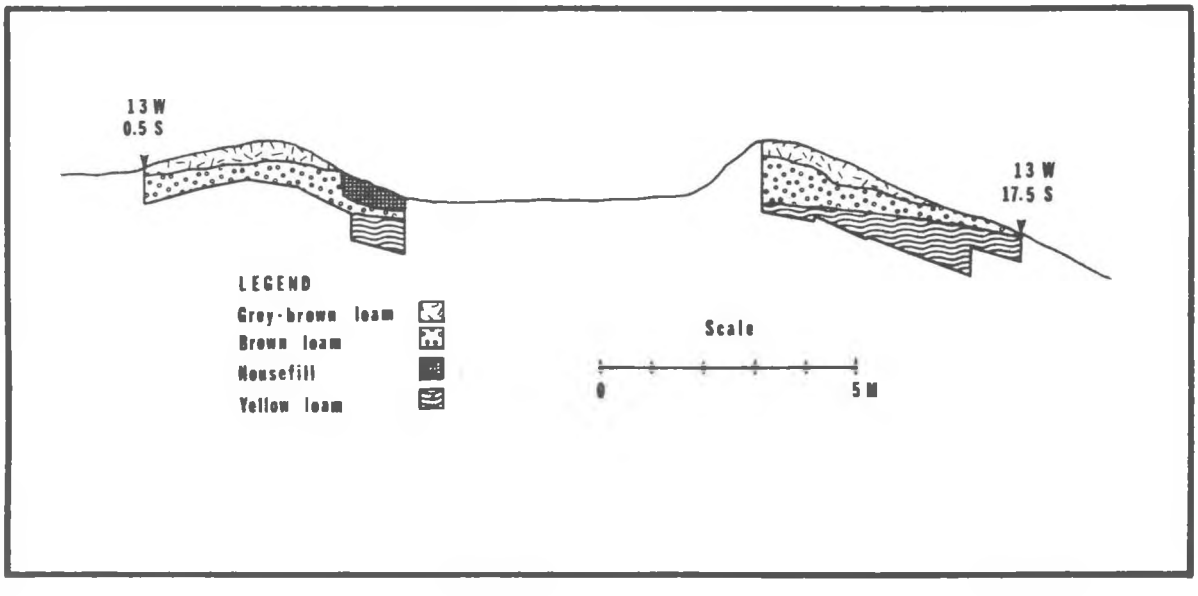


Fig. 22. Surface and stratigraphic profile of House Pit 4, EdRa 9.

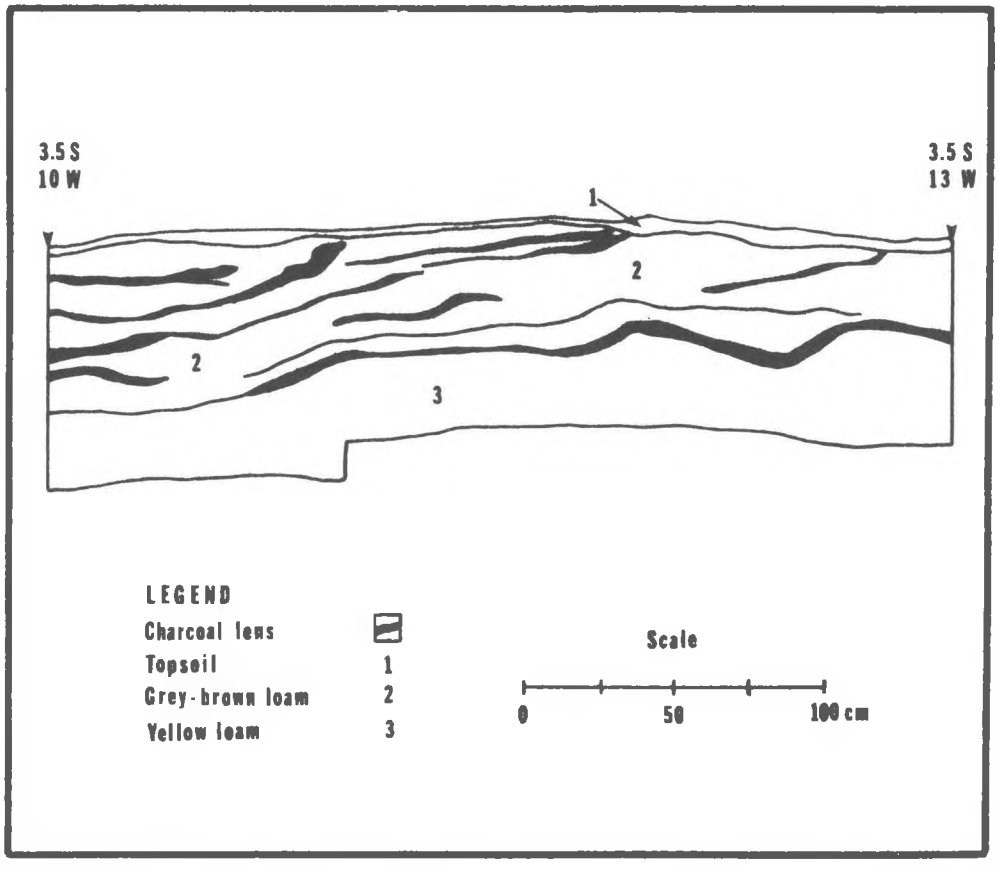


Fig. 23. Stratigraphic profile of south portion of ridge of House Pit 4, EdRa 9.

Stratigraphy and features

The relatively shallow cultural deposit is 10–20 cm thick in the house pit centre and 35–50 cm thick beneath the inside slopes (Fig. 28). Features include three distinct ash hearths, one in the centre of the house floor, and two just west of centre. A fourth feature is comprised of burnt pieces of wood from the roof structure that had collapsed onto the pit house floor. They are, however, too poorly preserved and fragmented to allow inference as to the original shape and construction of the roof.

Sample

Most of the 36 artifacts, 195 pieces of debitage, land mammal bone, and fish remains are directly associated with the living floor. Diagnostic artifacts include three Kamloops Side-notched projectile points, a bone tube, a bone point, a small hand maul, and an iron rifle pellet.

Chronology

Both the artifact sample and a radiocarbon date of 400 ± 80 B.P. (Gak-4914), from a charcoal lens on the floor, place the occupation of this house pit in the Kamloops Phase, and it may possibly extend into the later Protohistoric Phase.

House Pit 8

This circular depression is just under eight metres in diameter and is 40 cm deep.

Excavation

Nine 1 x 1 metre squares were excavated to an average depth of 40 cm below surface through the north ridge and most of the inside of the depression.

Stratigraphy

The House pit floor is approximately 30 cm below surface, and is scattered with most of the skeletal remains, except for the skulls, of at least seven deer *(Odocoileus hemionus hemionus)* (Fig. 29). The total weight of these remains is 8.5 kg. Many of the bones have been split open for extraction of their marrow.

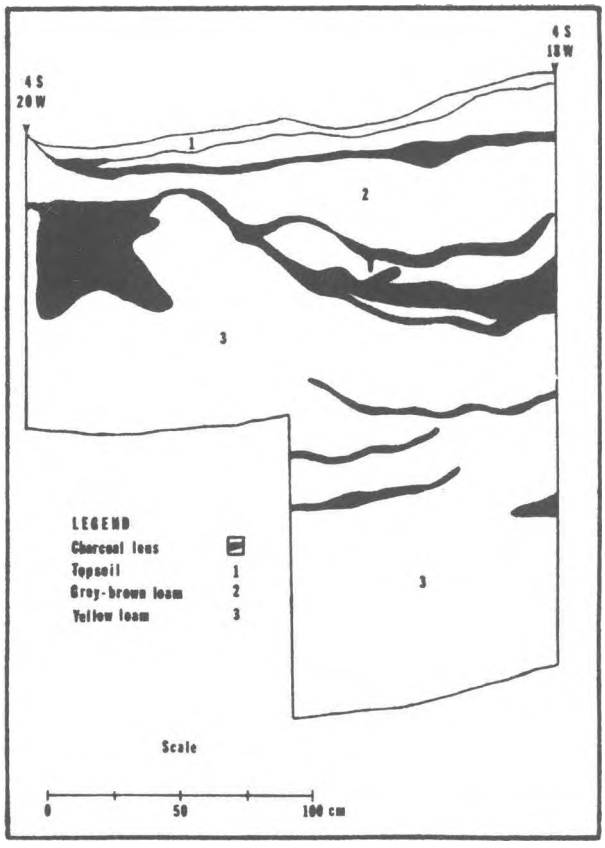


Fig. 24. Stratigraphic profile of cache area associated with House Pit 4, EdRa 9.

Sample

The sample includes only a few basalt bifaces and 37 pieces of debitage, all of which were found in direct association with the skeletal remains.

Chronology

The occupation of this house pit was a relatively short one, and appears to have terminated rather suddenly, soon after the butchering of the deer. Even though diagnostic data are absent, the occupation probably has a Kamloops Phase date.

House Pit 9

This circular depression has a very predominant ridge, and is seven metres in diameter and one metre in depth. It is also centrally located in the site.

Excavation

Six 1 x 1 metre squares were excavated through the western portion of the house pit ridge.

Fig. 25. House Pit 5, EdRa 9.

Stratigraphy

The occupation deposit extends from the pit house up onto the bench, where it is overlain by deposits that have sluffed off from the roof structure forming the house pit ridge (Fig. 30).

Sample

This is the only depression in which a high concentration of shell (*Margaritifera sp.*) has been preserved. Only 13 artifacts and 27 pieces of debitage were uncovered. The former was concentrated on the house pit's inside slope, while the latter was evenly distributed throughout the excavation. Six of the artifacts are bone implements.

Chronology

Based upon the high percentage of bone artifacts, and the high degree of shell preservation, this house pit represents a Kamloops Phase occupation.

House Pit 10

Located just west of a large concentration of cache pits, this almost rectangularly-shaped depression is the only house pit in the site which has evidence of a side entrance. Including the entranceway, it measures eight metres in length and five metres in width, and is approximately 60 cm deep.

Excavation

Seven 1 x 1 metre squares were excavated to an average depth of 50 cm below surface in the east half of the depression, including the entranceway.

Stratigraphy

The pit house floor varies between 30–40 cm below surface and is associated with quantities of charcoal, from the collapsed roof, fire-cracked rock, and land mammal bone. The very loose matrix of the soil hindered the delineation of any features of pit house and entranceway construction.

Sample

A piece of native copper tubing, an antler wedge, and six historic artifacts, including a button, a square nail, two chips of white porcelain, and two pieces of badly corroded iron, comprise this small sample. Neither chipped stone artifacts nor debitage were recovered.

Chronology

Both this sample and the supposedly "late" feature of a side entrance place this occupation into the Proto-historic Phase.

House Pit 12

This circular depression has a small ridge, with a diameter of five metres, and a depth of approximately 55 cm.

Excavation

Four 1 x 1 metre squares were excavated through the centre and south portion of the house pit.

Stratigraphy

The occupation deposit contains much charcoal, ash, and fire-cracked rock, and extends down from beneath the surface mat to 30 cm below surface.

Sample

Only four chipped stone artifacts, one copper bead, and three pieces of debitage comprise the sample.

Chronology

The shadow cultural deposit and the one copper bead probably place this short occupation towards the end of the Kamloops Phase.

Locus 1

Locus 1 includes 10 cache pits and is situated on flat terrain between and to the north of House Pits 4 and 5.

Excavation

A 6 x 1 metre trench was excavated to an average depth of 90 cm below surface, cutting through the south half of one cache pit.

Stratigraphy

The cache pit depression is one metre in diameter and 30 cm deep, while the cache deposit itself extends down to about 70 cm below surface. The cache contains neither artifacts nor debitage, but does have much higher quantities of land mammal bone, shell and fish remains than the immediately surrounding deposits.

Sample

Eight artifacts, including one bone bead and a small abrader, and 35 pieces of debitage comprise the sample. Outside the cache area there are two vertical concentrations of cultural material, separated by sterile deposits; one between the surface and 40 cm below surface, and the other from 60–90 cm below surface.

Chronology

The upper deposit, including the cache pit, dates to the Kamloops Phase, while the earlier cultural material belongs to the Thompson Phase.

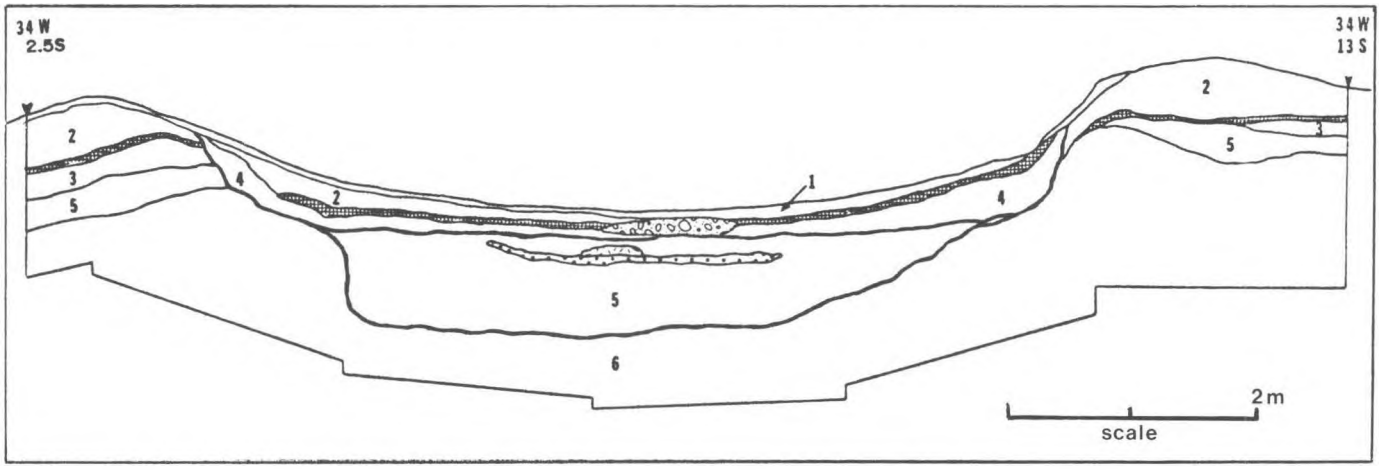


Fig. 26. Stratigraphic profile of House Pit 5, EdRa 9.

Legend

Dark Loam with charcoal

Hearth with fire-cracked rock

Ash hearth

Dark Brown loam (1st occupation)

Top soil	1
Grey-brown loam	2
Brown loam	3
Housefill (2nd occupation)	4
Yellow-grey loam	5
Yellow loam	6

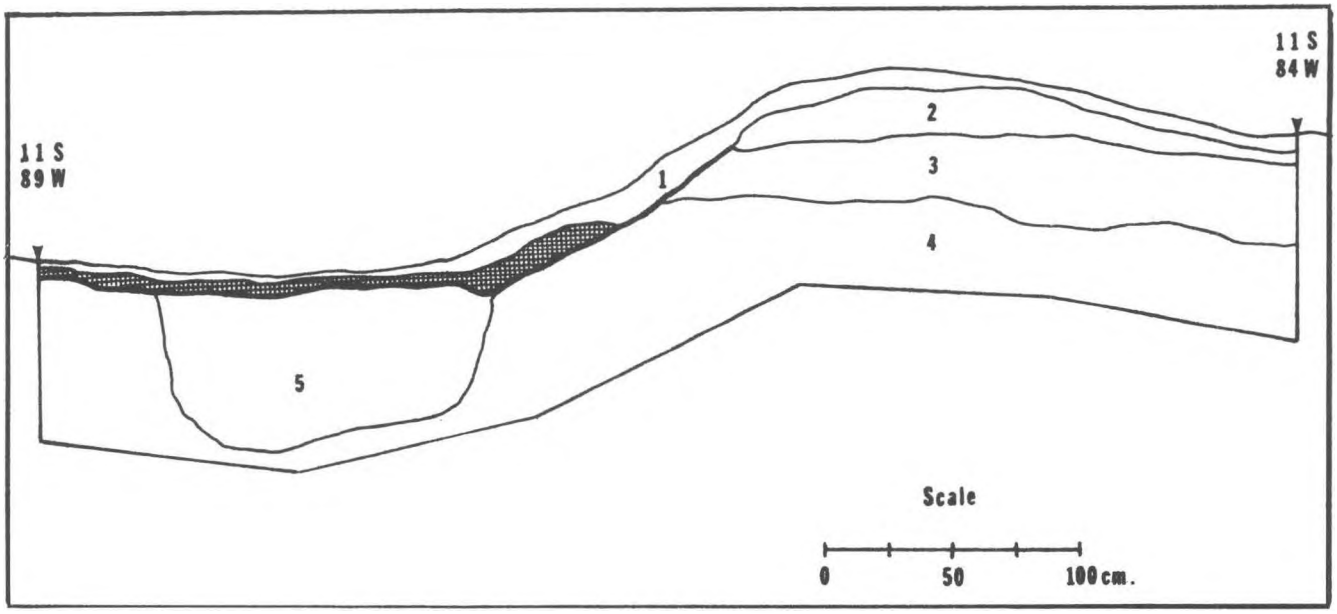


Fig. 27. Stratigraphic profile of House Pit 6, EdRa 9.

Legend

Dark loam with charcoal

Top soil 1

Grey-brown loam	2
Brown loam	3
Yellow loam	4
Cache area	5

Locus 2

Locus 2 is comprised of the 28 cache pits between House Pits 5 and 6.

Excavation

A 6 x 1 metre trench bisected two cache pits, and a 4 x 1 metre trench bisected another. Average depth of excavation was 90 cm below surface.

Stratigraphy

The cache pit deposits ranged from 140–160 cm in diameter, and from 50–70 cm in depth (Fig. 31). They are associated with quantities of fire-cracked rock and charcoal, but relatively small amounts of land mammal bone and fish remains, and they might possibly have functioned as cooking pits instead. Several pieces of birch bark were found in association with the cache pit margins.

Sample

Most of the sample of five artifacts and 138 pieces of debitage was found either beneath or beside the cache deposits.

Chronology

Even though diagnostic data are lacking, these cache depressions probably belong to a Kamloops Phase occupation of the site because of the relative shallowness of the associated cultural materials.

Lafarge Site (EdRa 11)

The Lafarge site is a non-habitation site that once contained a total of 45 cache pits. It is located on the north shore floodplain of the South Thompson River, 24 km east of Kamloops, and 2.5 km east of the Canada Lafarge cement plant. Just after investigation 25 of the 45 cache pits were destroyed by construction of a house.

Even though house pit depressions are scattered throughout the surrounding area, none are closer than 300 metres to the site. Dawson (1892:9) records that:

> "...caches often occur about the sites of winter villages, but are also frequently found at a distance from these, and grouped around the actual fishing places."

This site may be associated with several alignments of rocks and wooden stakes, indicating the presence of fish weirs, which can be discerned extending across the river bottom, perpendicular to the shoreline, about a kilometre west of the site, at extremely low water levels. These alignments have yet to be accurately recorded.

Situated less than 100 metres from the shoreline, the cache pits are located on a small ridge, 50–100 cm high, formed during their original construction. The vegetation is typical of the area with sage brush, most of it over a metre high, and short grasses. The deposit is composed of aeolian loams.

Excavation

A property line divides the site, and the investigation was restricted to the threatened portion, containing the 25 cache pits. Four of them were tested by excavating eight 1 x 1 metre squares to an average depth of 70 cm below surface.

Stratigraphy

The depressions average less than one metre in diameter and about 50 cm in depth. The cache areas themselves are clearly outlined by dark-coloured loam, and do not extend more than 80 cm below surface.

Sample and chronology

The excavated sample includes two chipped stone bifaces, two retouched flakes and 11 pieces of debitage, along with relatively small amounts of land mammal and fish bone, and pieces of tightly rolled birch bark, all of which are directly associated with the cache areas. Surface collected around the site were 55 flakes of debitage, a few basalt nodules, 10 retouched flakes, and one large, fragmented corner-notched projectile point. This sample is not included in the artifact description. Lack of diagnostic data hinders chronological interpretation of this site, but it is probably later in the cultural sequence, and if it is contemporary with the cache pits in the Harper Ranch site, then it most likely belongs to the Kamloops Phase.

Brocklehurst Burial Site (EeRc 8)

Emergency salvage archaeology was performed on this burial site, which is located in the gravel pit operated by Studer Brothers Construction in Brocklehurst, North Kamloops. The single burial was exposed approximately 3.5 metres below surface in the wall of the gravel pit, and had been sliced practically in half by a power shovel. According to Studer Brothers, the burial must have originally been closer to five metres below surface, as they had already

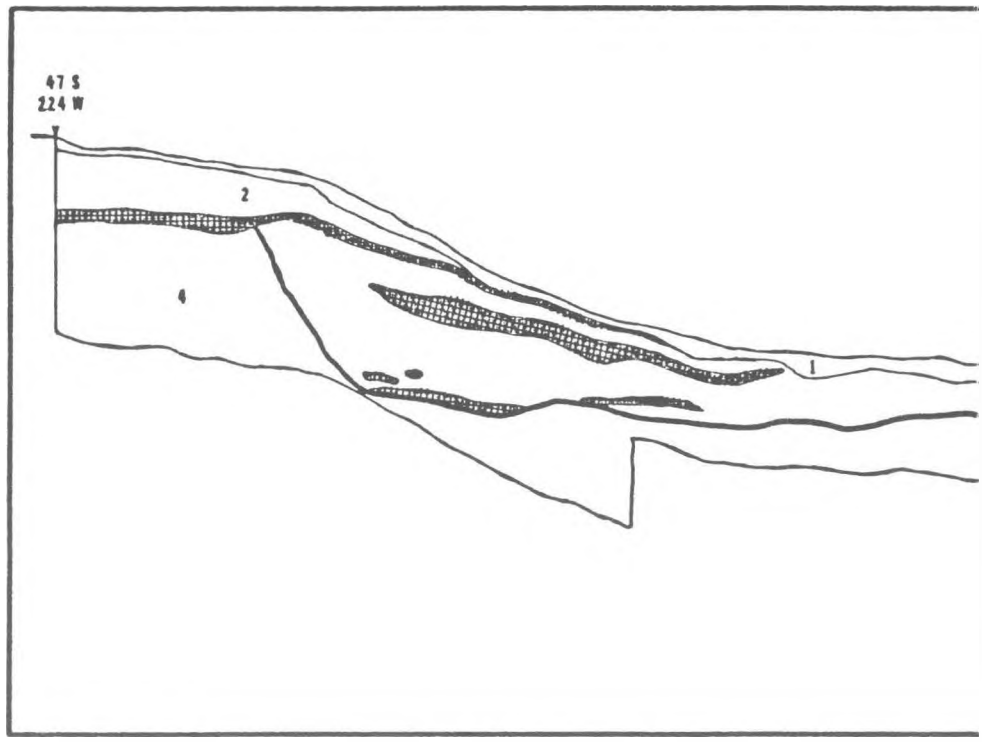


Fig. 28. Stratigraphic profile of House Pit 7, EdRa 9.

Legend

Dark loam with charcoal

Ash and burnt soil

Top soil	1
Grey-brown loam	2
Housefill	3
Brown loam	4

removed about 1.5 metres of deposit off the surface.

The skeleton is that of an adult male, approximately 30 years of age, who was buried on his left side in a flexed position, facing south. Most of the disturbed skeletal material was recovered by extensive screening of the gravel debris.

Excavation

Because of the difficult location of the burial, in a wall of loose gravel 3.5 metres below surface, and another 3.5 metres up from the gravel pit floor, controlled excavation down from the surface would have been time consuming and dangerous. Instead, the burial was extracted from the side of the wall.

Stratigraphy

The deposit is composed of stratified alluvial gravels and aeolian loams. The burial was located at the bottom and to one side of what appears to be a shallow depression, that is outlined by a thin, fragmented lens of darker gravel that possibly represents a pit house floor. The depression measures 4.5 metres across in section and is approximately 1.5 metres deep (Fig. 32).

Sample

Most of the 121 artifacts in this sample came from the debris beneath the burial. The burial was likely that of a fisherman, as the artifacts included fish net weights, a toggling harpoon valve, a unilaterally-barbed bone fragment, and one of the most distinctive artifacts in the entire assemblage, a leister point with 19 unilateral barbs (Fig. 33). Most of the rest of the sample is comprised of 92 shell beads and 12 bear tooth pendants. Table 9 lists the artifact types in the sample. They are not included in the artifact description and analysis that follows.

Chronology

Site dimensions and other features were impossible to determine because of the gravel pit operations. The strata above the burial appear to be naturally deposited, indicating

Table 9. Artifact types from the Brocklehurst Burial Site. N=121.

Artifact Type	Number
Stone fish net weights	5
Bone leister point	1
Composite toggling harpoon valve	1
Barbed bone fragment	1
Bear tooth pendants	12
Shell beads	92
Retouched flakes	5
Worked bone	3
Orange ochre	1

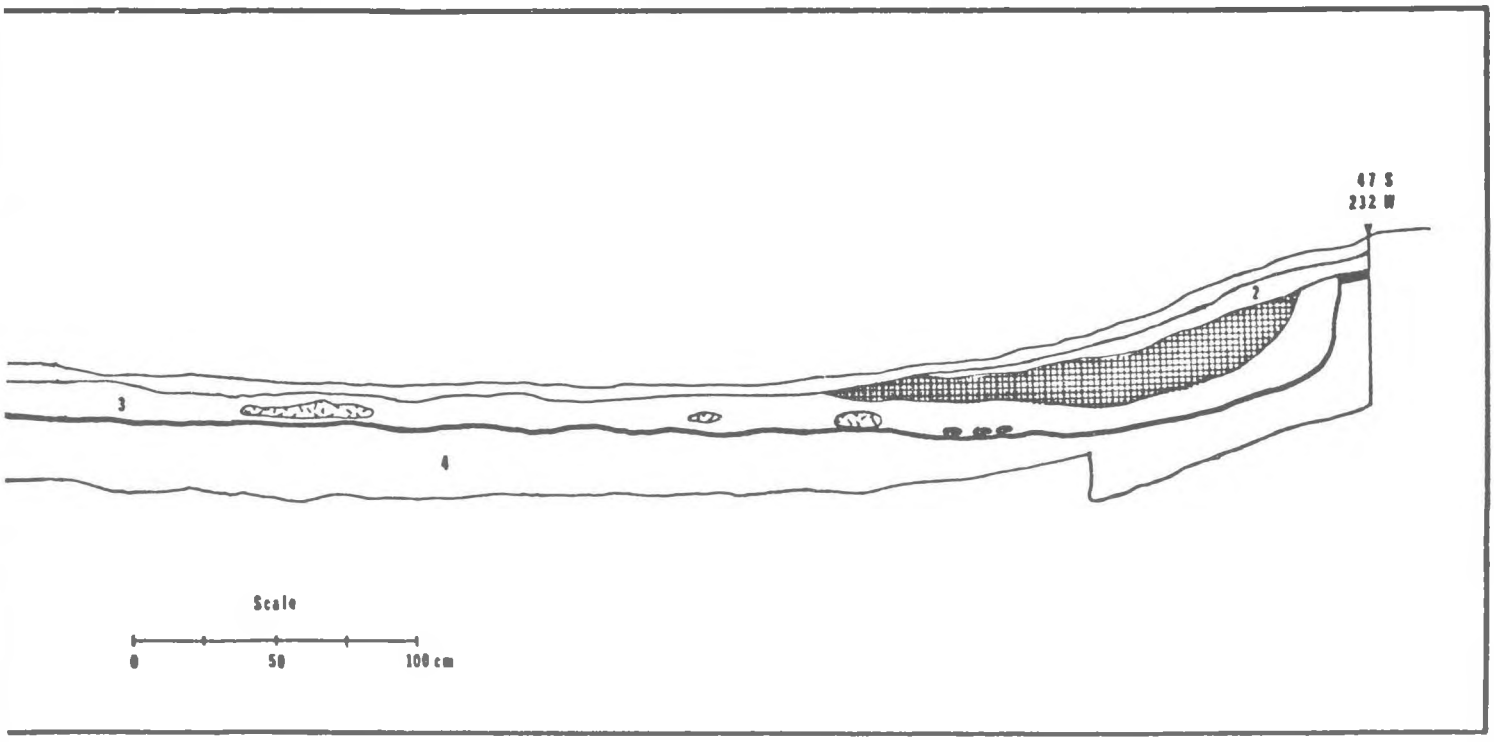


Fig. 29. Floor of House Pit 8, EdRa 9.

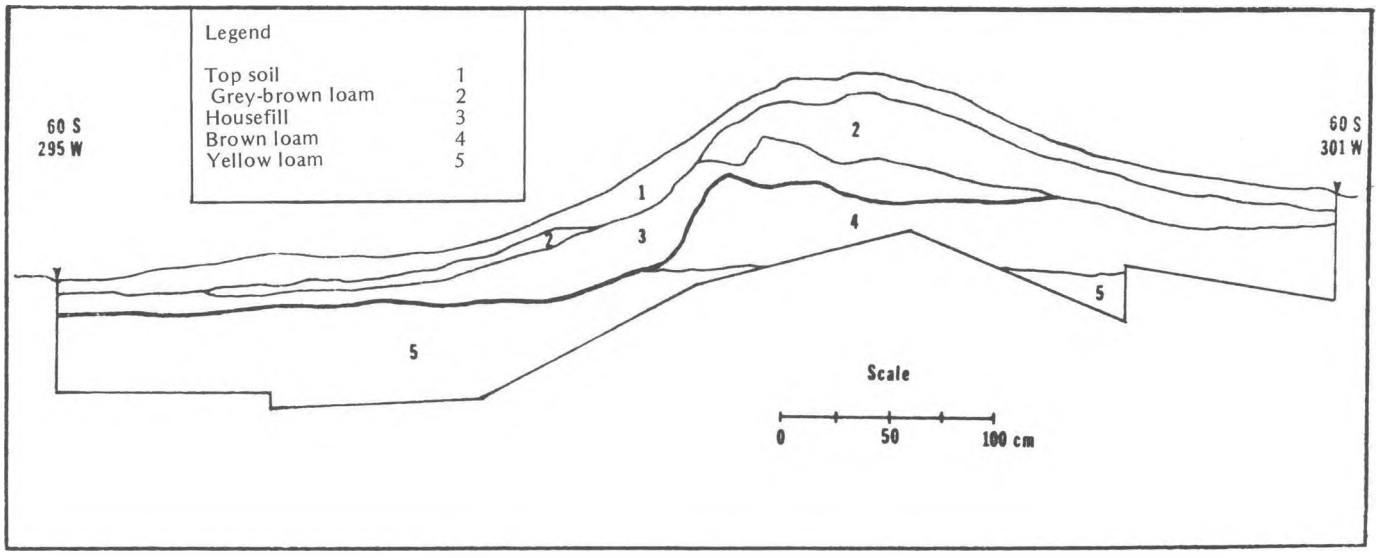


Fig. 30. Stratigraphic profile of House Pit 9, EdRa 9.

that this may possibly be the oldest recorded site in the locality, because of its extreme depth of up to five metres below surface. It is however the only recorded depression associated with alluvial gravels in the locality, and this may be related to its stratigraphic depth. The artifact sample includes a high percentage of preserved shell and bone implements, indicating either a relative later date in the sequence, differential preservation, or the unique nature of the burial context. Until more comparative data are available, a date and possible phase affiliation for this site are in question.

Tranquille School Site (EeRd 3)

This single burial site is located on the grounds of the Tranquille School, on the northeast shore of Lake Kamloops. It was discovered during the digging of a sewage ditch by a backhoe, which sliced through the upper part of the skeleton, removing the skull, mandible, distal ends of both ulnas and radii, and the hands. Except for the facial portion of the skull, most of this material was recovered from the backdirt.

The remainder of the skeleton was well articulated, and is that of an adult female, approximately 25 years of age. She was lying on her left side in a fully-flexed position, facing east. The skeleton displays evidence of child-bearing and culturally-induced deformation of the posterior region of the skull.

Excavation

Again, emergency salvage archaeology was necessary, but in this instance, there was some time for controlled excavation to occur. A 2 x 1 metre unit was dug down in arbitrary levels from the surface to beneath the burial.

Stratigraphy

The burial lay 1.5 metres below present ground surface, in a mixed deposit of alluvial silts and medium gravels, which overlay a bed of coarse gravels.

Sample

No artifacts, but some faunal remains were found directly associated with the burial. They include two elk antler beams, one antler tine, two ungulate scapula fragments, two ungulate long bone fragments, a bird bone, and several fresh water mussel shell *(Margaritifera sp.)*.

Chronology

Lack of diagnostic data and of exact provenience, because of construction disturbance, make it difficult to estimate the age and extent of the site at this time.

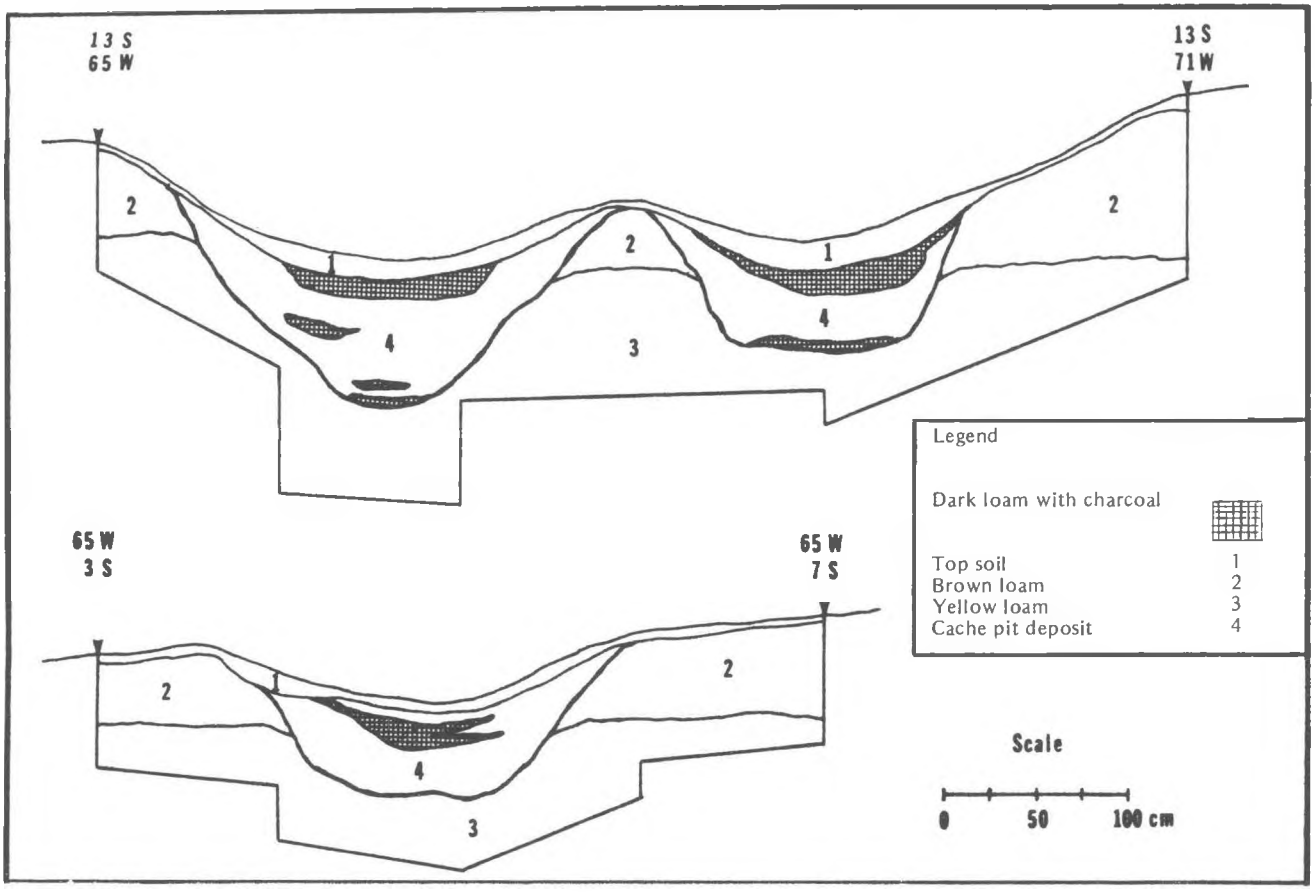


Fig. 31. Stratigraphic profile of Locus 2 cache pits, EdRa 9.

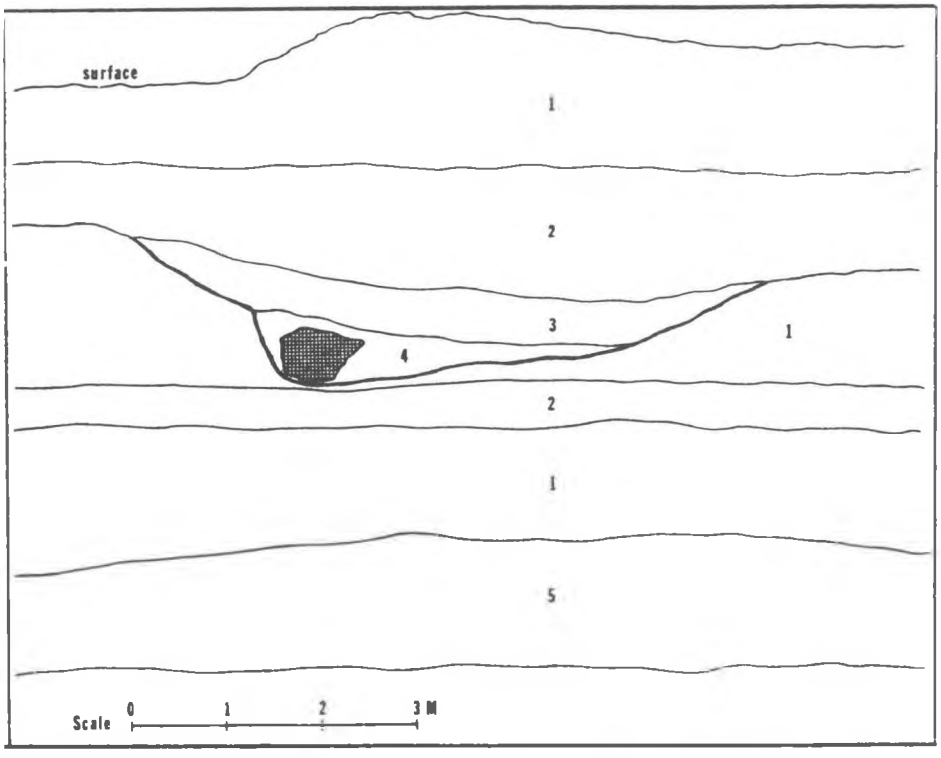


Fig. 32. Stratigraphic profile of the Brocklehurst Burial site, EeRc 8.

Legend

Fine gravels with charcoal (location of burial)

Coarse gravels 1
Loam 2
Medium gravels 3
Fine gravels 4
Gravel debris on floor of gravel pit 5

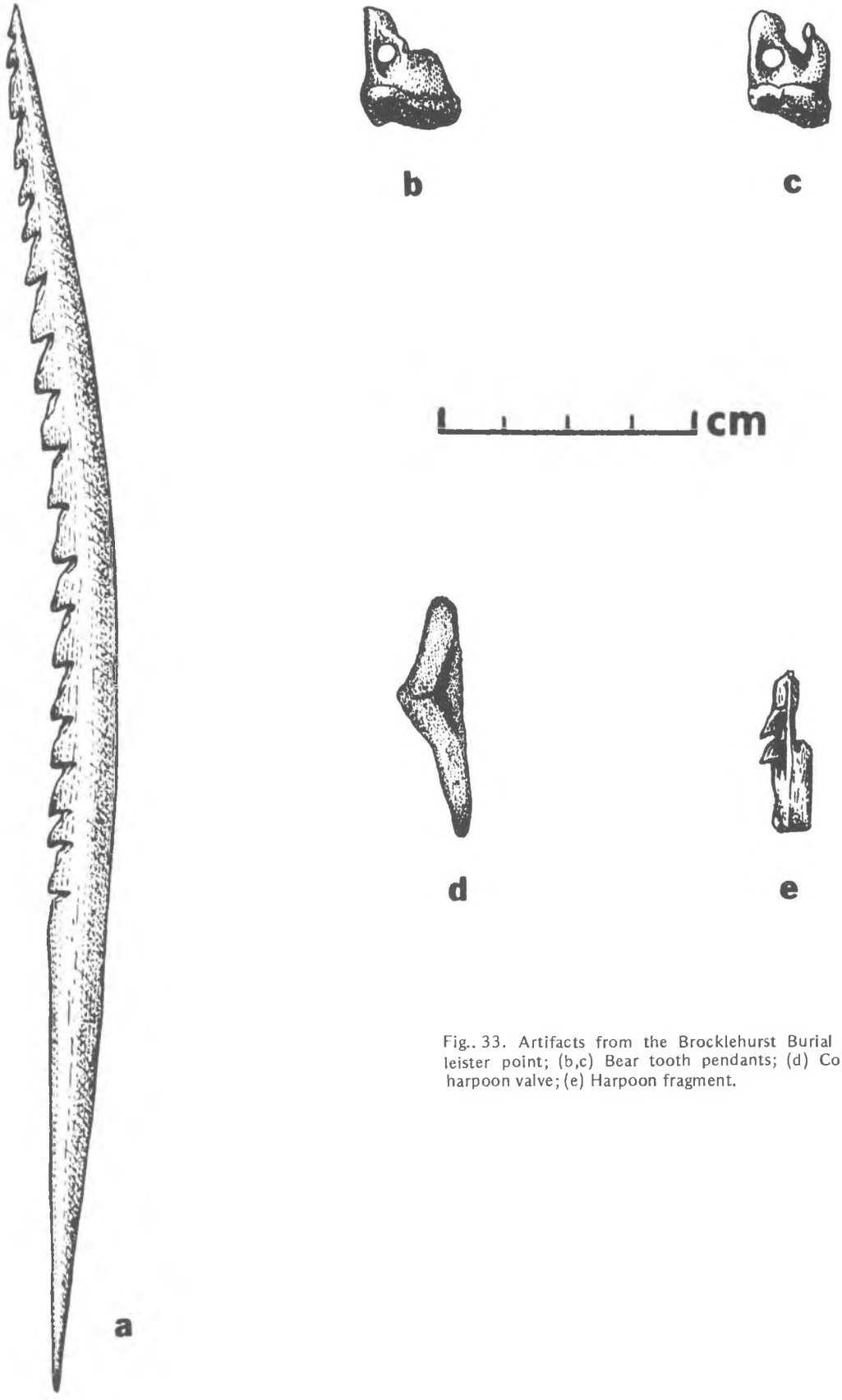


Fig. 33. Artifacts from the Brocklehurst Burial site: (a) Barbed leister point; (b,c) Bear tooth pendants; (d) Composite toggling harpoon valve; (e) Harpoon fragment.

IV ANALYSIS OF ARCHAEOLOGICAL MATERIALS

This section analyzes the artifact assemblages from the four house pit village sites, including the large surface collection from the Kamloops Reserve site. The description of the artifacts takes the form of a typological classification, as defined by Kreiger (1944), and which, for comparative purposes, utilizes the descriptive categories of previous researchers of Plateau prehistory.

The sample is comprised of 1951 artifacts; an artifact is any object that is produced for use, or intentionally or functionally modified by human activity. The sample also includes 15,237 pieces of debitage, which are residual material from the manufacture of lithic artifacts. The artifacts are assigned to arbitrarily selected groups, each in a non-taxonomic graded order from the general to the specific, as described by Rouse (1972: 52–55), and as utilized by Stryd (1973a: 319–322).

The main purpose of the typology is not only a description of the artifacts, but also an attempt at their classification to illustrate and interpret the cultural sequence in the Kamloops locality. The initial classification in the typology is termed industry, and is based on artifact material, and in the case of stone, on its primary technique of manufacture. The second category is artifact class, which is related to tool function, such as projectile point or scraper. Further classification into more specific, or better defined types, is based upon arbitrarily selected combinations of descriptive attributes, which in some instances reflect the temporal sequence and spatial distribution within the assemblages. The terminology and composition of the typology is given in Table 10.

This classification of artifacts into types is in part an arbitrary process, limited by the nature of "accidental" preservation of archaeological materials and contexts. In this study, these materials and contexts are conceptualized as cultural remains abandoned, or discarded by aboriginal family units. All members of these family units would have partaken in such a wide variety of technological activities that we must not assume that every artifact had a specific tool function. The following typology will therefore attempt to represent general trends in prehistoric implement design and evolution in the Kamloops locality.

As mentioned above, the assemblage from the Kamloops Reserve site is divided into two collections, one from the excavated portion of the site, and the other from the very badly disturbed and pothunted surface portion. Even though the latter was so badly disturbed that the types and amounts of artifacts may not be representative, they do correspond to those from the excavated sites in the locality, and are therefore incorporated into the discussion. Table 11 lists the distribution of artifacts by site. The sites are referred to by their designations under the Borden (1952b) grid scheme, and are again as follows:

Kamloops Reserve site (excavated portion)	EeRb 3
Kamloops Reserve site (surface portion)	EeRb 3(s)
Van Male site	EeRb 10
Leonard site	EeRb 11
Harper Ranch site	EdRa 9

Chipped Stone Industry N = 1852

Chipped stone artifacts are the most common in the Kamloops locality, comprising over 94% of the entire assemblage. They are divided into 12 classes, of which six are functional and six are descriptive. Of the 1852 chipped stone artifacts, all but 176, or 9.5%, are made of both vitreous and non-vitreous basalt. Except for one retouched flake and three spall tools of granite, all other lithic artifactual material is cryptocrystalline quartz, including mainly chalcedonies and cherts. The most common chalcedony is agatized wood, more commonly known as petrified wood. Distribution of cryptocrystalline chipped stone artifacts is given in Table 12. Primary and secondary chipping is varied in this industry, and covers the range of techniques described by Binford (1963: 202–207).

Projectile Points N = 103

Projectile points are bifacially flaked pointed stone implements with suitably prepared bases for hafting to a dart or arrow shaft. There is the probability of course that some may not have been used solely for projectiles, but quite possibly as knives or even perforators. Four descriptive types are distinguished: leaf-shaped, corner-notched, side-notched, and stemmed. The corner-notched points are further divided into two sub-types, based upon stem attributes and respective clusterings in the temporal sequence.

Table 10. Terminology and composition of the artifact typology.

Industry	Class	Type-group	Type	Sub-type
Chipped stone	Projectile points			
			Leaf-shaped	
			Corner-notched	straight-stem
				expanding-stem
			Side-notched	
			Stemmed	
	Bifaces	Formed	Ovate	
			Pentagonal	
			Quadrilateral	
			Rectanguloid	
			Rhomboidal	
			Triangular	
			Hafted	
			Backed knives	
			Biface ends	
			Medial sections	
			Miscellaneous	
		Non-formed		
	Unifaces	Formed		
		Non-formed	Retouched	
			Utilized	
	Scrapers		End	
			Side	
			Continuous	
			End and side	
			Miscellaneous	
	Drills		Expanding base	
			Notched	
	Gravers		Wide spur	
			Narrow spur	
			Point	
			Miscellaneous	
	Microblades			
	Macroblades			
	Pendant			
	Pièce esquillées			
	Spall tools			
	Miscellaneous chipped stone			
Ground and pecked stone	Abraders			
	Ground point			
	Hand maul			
	Shaft smoother			
	Hammerstones			
	Miscellaneous			
Bone	Beads			
	Tubes			
	Awls			
Bone	Points			
	Composite toggling harpoon valve			
	Miscellaneous			
Antler	Wedges			
	Projectile			
	Miscellaneous			
Shell				
Tooth				
Copper	Beads			
	Tubing			
Historic				

Table 11. Distribution of artifact types by site.

Artifact	Number	Site				
		EeRb 3	EeRb 3(s)	EeRb 10	EeRb 11	EdRa 9
Chipped stone	1852	804	344	250	79	375
Projectile points	103	25	8	18	8	44
Leaf-shaped	6	2		3		1
Corner-notched, straight-stem	19	7	1	2		9
Corner-notched, expanding-stem	43	14	6	5	5	13
Side-notched	21				3	18
Stemmed	14	2	1	8		3
Bifaces	743	274	162	90	25	192
Formed	244	75	25	24	12	88
Ovate	11	1		3	2	5
Pentagonal	4					4
Quadrilateral	2	1				1
Rectanguloid	1					1
Rhomboidal	2					2
Triangular	20	12	3			5
Hafted	1					1
Backed knives	15	4	7	1		3
Medial sections	18	5	2	4	1	6
Miscellaneous	60	21	7	2	5	25
Non-formed	519	199	137	66	13	104
Unifaces	915	478	155	139	40	103
Formed	4	3		1		
Non-formed	911	475	155	138	40	103
Retouched	664	351	101	82	38	92
Utilized	247	124	54	56	2	11
Scrapers	49	9	13		2	25
End	27	5	11		1	10
Side	5	1				4
Continuous	8	1	1		1	5
End and side	4	1	1			2
Miscellaneous	5	1				4
Drills	10	5	2			3
Expanding base	5	1	2			2
Notched	5	4				1
Gravers	11	6	1	1	2	1
Wide spur	3	2	1			
Narrow spur	1					1
Point	5	4		1		
Miscellaneous	2				2	
Microblades	5	3			1	1

An attempt is made to list all projectile points by function, either arrow or dart (including spear and spear-thrower projectiles). The distinction between arrow and dart is based upon the assumption that neck widths relate to shaft diameter, with the arrow shafts being comparatively smaller (Sanger 1970: 107; Corliss 1972: 12; Stryd 1973a: 99). The distribution of projectile point neck widths in this assemblage follows an assumption by Corliss (1972: 14), that samples containing both arrow and dart points are bimodal for neck width (Fig. 34). As comparable with Ham (1975: 125–126), a lack of a definite bimodal distribution in the Kamloops locality might be a reflection of the small projectile point sample size.

The division between arrow and dart was established in a similar means as Stryd (1973a: 50), by measuring neck widths of points that could be assigned with certainty to either type. The mean neck width for arrow points is 7.5±1.6 mm (N=29, range:3–10 mm); and for dart points is 12.9±2.17 mm (N=68, range:9–20 mm). Even though

Table 11 (continued)

Artifact	Number	Site				
		EeRb 3	EeRb 3(s)	EeRb 10	EeRb 11	EdRa 9
Macroblades	2			1	1	
Pendant	1					1
Pièce esquillées	1			1		
Spall tools	3	1	2			
Miscellaneous chipped stone	9	3	1			5
Ground and pecked stone	13	3		6	1	3
Abraders	4	1		1	1	1
Ground point	1					1
Hand maul	1					1
Shaft smoother	1	1				
Hammerstones	3	1		2		
Miscellaneous	3			3		
Bone	59	3		5	6	45
Beads	9					9
Tubes	15				1	14
Awls	5				1	4
Points	8	2		2	1	3
Composite toggling harpoon valve	1					1
Miscellaneous	21	1		3	3	14
Antler	10	2		5		3
Wedges	4	1		1		2
Projectile	1			1		
Miscellaneous	5	1		3		1
Shell	1			1		
Tooth	1					1
Copper	4					4
Historic	11					11

a slight overlap does occur, a neck width of 10 mm was chosen as the most appropriate measurement dividing arrow and dart points, as it is the upper limit of the range of arrow neck widths. This figure is 1.0–1.5 mm less than those established for the Lillooet locality (Stryd 1973a: 50) and the area of the confluence of the Chilcotin and Fraser Rivers (Ham 1975: 125), and this may be a function of the comparatively higher percentage of dart points in this sample.

Projectile point attributes and terms used in this discussion are those described by Sanger (1970: 37) and Binford (1963) (Fig. 35). Because of the wide range in the clustering of projectile point attributes, individual attributes are often isolated in the discussion, but are grouped together in Table 13. Representative line-drawings of the five point types accompany each discussion, and the range of examples of each type are shown in the accompanying figures.

Table 12. Distribution of chipped stone cryptocrystalline lithic artifacts by class and type-group.

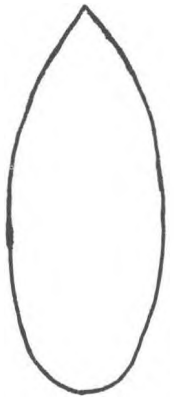
Artifact	Number	Site				
		EeRb 3	EeRb 3(s)	EeRb 10	EeRb 11	EdRa 9
Projectile points	7	2		2		3
Formed bifaces	15	7		2		6
Non-formed bifaces	28	16		3		9
Non-formed unifaces	99	74	7	8	5	5
Scrapers	11	5	1		2	3
Drills	2	1				1
Gravers	5	4			1	
Microblades	3	1			1	1
Macroblades	1			1		
Miscellaneous	1	1				
TOTALS	172	111	8	16	9	28

Group 1: Leaf-shaped. N = 6 (Figure 36 *a–c;* Table 14)

Material

Basalt (4) Cryptocrystalline (2)

Description



All Group 1 projectile points lack evidence of stemming or blade notching. Five are symmetrical with excurvate blade edges, and one is assymmetrical with one excurvate and one excurvate-incurvate blade edge. Bases are convex on two points, straight on two, subconvex on one, and the last has a notched concave base with a thin, shallow flute extending one-third of the way up one face. Five points show definite bifacial basal thinning. Transverse sections are biconvex on four points and biplano on two. Cortex is present on two points.

Chipping technique

Primary chipping has left flat random flake scars on all six points. Secondary chipping occurs bifacially and bilaterally over the entire blade and basal edges of three points, and is sparingly evident on two others. One point exhibits no secondary chipping.

Phase affiliation

Thompson Phase (5) Kamloops Phase (1)

Function

Dart (5) Arrow (1)

Table 13. Grouping of selected projectile point attributes.

Type	Number	Element				
		Blade			Base	Barbs (Number of points)
		Symmetrical		Asymmetrical		
Leaf-shaped	2	excurvate			straight	
N=6	1	"			convex	
	1	"			subconvex	
	1	"			concave	
	1			excurvate/excurvate-incurvate	convex	
Corner-notched, straight-stem	4	triangular			straight	1
N=19	1	"			subconvex	
	1	"			subconcave	
	1	ovate			straight	1
	1	"			subconvex	
	2	"			subconcave	
	2	"			incomplete	1
	1			triangular/excurvate-incurvate	incomplete	1
	1			ovate/incurvate	straight	
	1			"	concave	
	3		incomplete		straight	2
	1		"		subconcave	
Corner-notched, expanding-stem	13	triangular			straight	8
N=43	4	"			subconvex	3
	2	"			subconcave	2
	3	"			concave	
	3	"			incomplete	1
	3	ovate			straight	
	1	"			concave	
	2	"			incomplete	2
	1	excurvate-incurvate			straight	
	1			excurvate/incurvate	straight	
	1			"	concave	
	1			excurvate/triangular	straight	
	1			excurvate/excurvate-incurvate	straight	
	4		incomplete		straight	2
	2		"		subconcave	1
	1		"		incomplete	1
Side-notched	10	triangular			straight	
N=21	2	"			incomplete	
	3	ovate			straight	
	3		incomplete		straight	
	3		"		subconcave	
Stemmed	1	triangular			straight	
N=14	6	ovate			straight	
	2	excurvate			straight	
	2			ovate/excurvate	straight	
	2			"	incomplete	
	1		incomplete		straight	

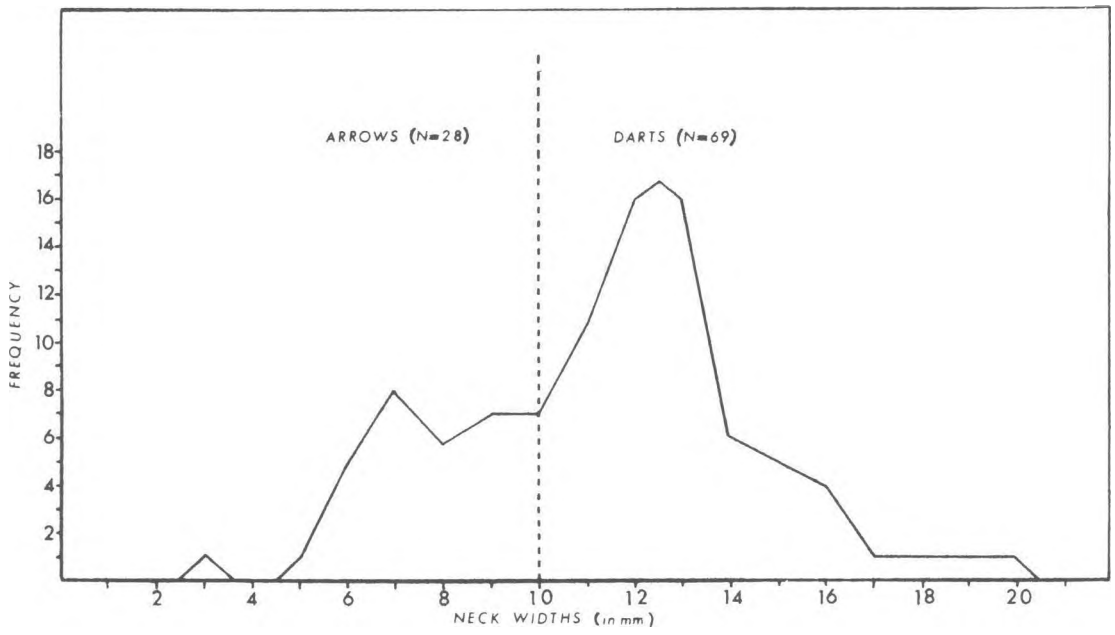


Fig. 34. Distribution of projectile point neck widths, N=97. Group 1 points are not included in this graph. Some overlap does occur; three dart points have neck widths of less than 10 mm.

Table 14. Dimensions of Group 1 projectile points.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	6	22–80	47.1	18.71
Width	6	8–25	18.5	6.06
Thickness	6	3–6	5.3	1.21

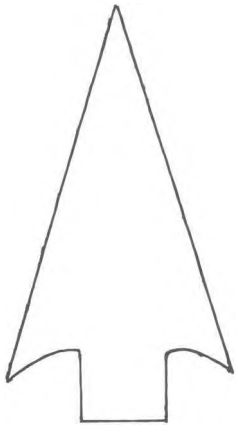
Group 2: Corner-notched. N = 62

Group 2 points are divided into two sub-types, referred to as Group 2A, corner-notched, straight-stem, and Group 2B, corner-notched, expanding-stem.

Group 2A: Corner-notched, straight-stem. N = 19
(Figure 36 *d–h* ; Table 15)

Material
Basalt (19)

Description
The corner-notched, straight-stem points vary widely in other attributes. Of the 12 symmetrical points, six have triangular and six have ovate blade edges. Six points are asymmetrical, and of these, two have one ovate and one incurvate blade edge; one has one triangular and one excurvate-incurvate blade edge; and three have irregular blade edges due to incomplete manufacture. The remaining point in this group is a basal fragment with no blade edges. Thirteen points are shouldered and six display barbs, which on five are shorter than their respective stems. The sixth barbed point is fragmented, and its barbs may well have originally extended beyond the base. Nine points have straight bases, four are subconcave, two are subconvex, one is concave, and three are incomplete. Of the 16 points with complete bases, 12 have bifacial basal thinning, and four are unifacially thinned. Transverse sections are plano convex on nine points, biconvex on seven, and biplano on three.Cortex is present on four points.



Chipping technique
Primary chipping is present on 16 points, with eight having lamellar scars, five having expanding scars, and the three unfinished points being randomly flaked. Two points are made from very thin flakes, and exhibit chipping only along their edges. Uniform secondary chipping occurs bifacially and bilaterally on 13 points.

Table 15. Dimensions of Group 2A projectile points.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	13	21–88	43.1	16.92
Width	19	13–33	22.5	4.99
Width of neck	19	7–18	11.7	2.71
Thickness	19	3–9	5.5	1.54

Phase affiliation
Thompson Phase (12) Kamloops Phase (7)

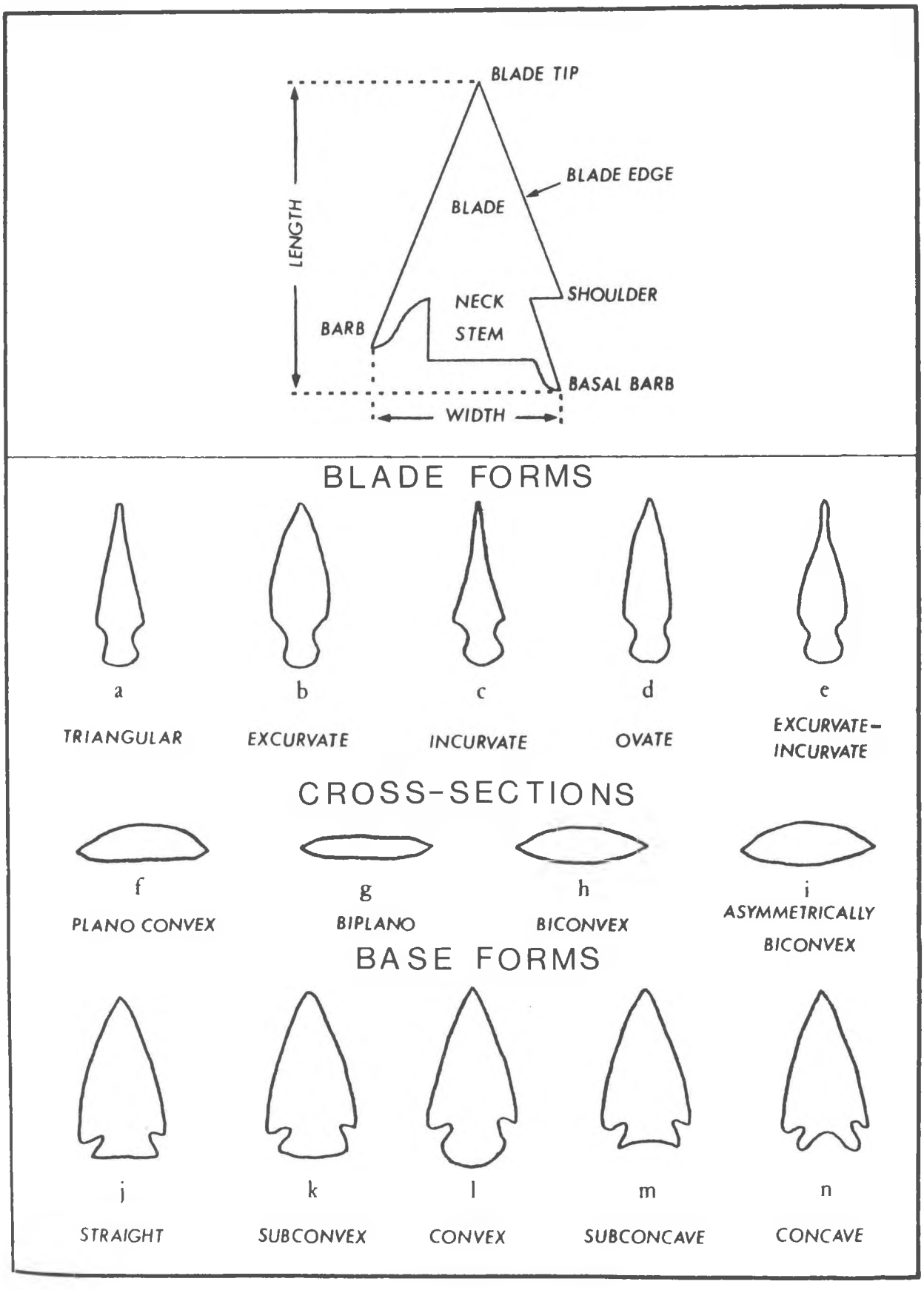

BLADE TIP
BLADE EDGE
BLADE
LENGTH
SHOULDER
NECK
STEM
BARB
BASAL BARB
WIDTH
BLADE FORMS
a
TRIANGULAR
b
EXCURVATE
c
INCURVATE
d
OVATE
e
EXCURVATE–
INCURVATE
CROSS-SECTIONS
f
PLANO CONVEX
g
BIPLANO
h
BICONVEX
i
ASYMMETRICALLY
BICONVEX
BASE FORMS
j
STRAIGHT
k
SUBCONVEX
l
CONVEX
m
SUBCONCAVE
n
CONCAVE

Fig. 35: Projectile point attributes and terms: (a)–(e) Geometric attributes of the blade; (f)–(i) Transverse sections of the blade; (j)–(n) Geometric attributes of the base.

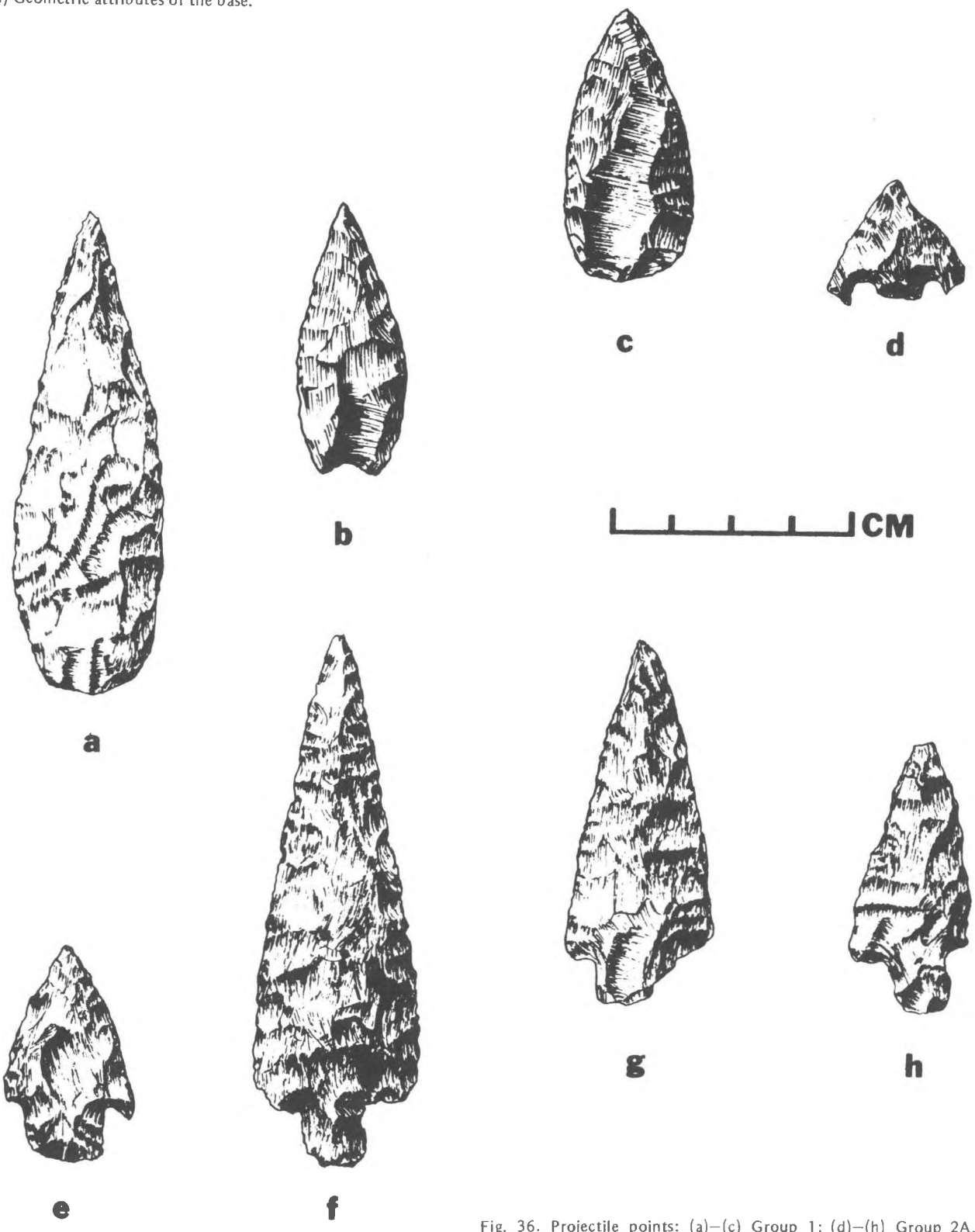


Fig. 36. Projectile points: (a)–(c) Group 1; (d)–(h) Group 2A. Thompson Phase: Kamloops Reserve site: (a), (b), (e), (f), (h). Van Male site: (c), (d); Harper Ranch site: (g).

Function

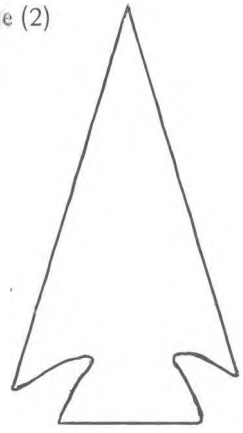
Dart (15) Arrow (4)

Group 2B: Corner-notched, expanding-stem. N=43

(Figure 37 *a–j;* Figure 38 *a–j;* Table 16)

Material

Basalt (41) Cryptocrystalline (2)



Description

Like the above group, the corner-notched, expanding-stem points vary considerably in other attributes. Of the 43 points only 21 are complete, nine are missing tips, six have broken bases and/or barbs, three are medial sections, three are fragmented longitudinally from tip to barb, and one is a basal fragment. Thirty-two points display blade symmetry, with 25 blades being triangular, six ovate, and one excurvate-incurvate. Of the four points with asymmetrical blades, one has one excurvate and one excurvate-incurvate blade edge, two each have one excurvate and one incurvate blade edge, and one has a triangular and an excurvate blade edge. Seven points are broken or unfinished. Twenty-three points are shouldered and 20 have barbs, on two of which extend down to or beyond their respective bases. Straight bases occur on 24 points, subconvex and subconcave bases on four, concave on five, and six points have incomplete bases. Bifacial basal thinning is present on 37 points, that is on all points with complete bases. Transverse sections are biconvex on 18 points, biplano on 12, plano convex on eight, and asymmetrically biconvex on five. Cortex is absent on all points in this group.

Table 16. Dimensions of Group 2B projectile points.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	27	27–74	38.8	9.93
Width	41	13–34	23.2	4.58
Width of neck	43	7–19	12.4	2.14
Thickness	43	2–9	5.2	1.37

Chipping technique

Primary chipping is present on the entire surface of both faces of 36 points in the form of expanding and lamellar scars. Four points lack primary chipping on their ventral faces, and three points are thin flakes with primary chipping just along their edges. Edge retouch, or secondary chipping, is present in the form of angular expanding, ovate, and small irregular flake scars on all points. One specimen has had its distal tip reworked, with the blade edges tapering to a possible drill.

Phase affiliation

Thompson Phase (41) Kamloops Phase (2)

Function

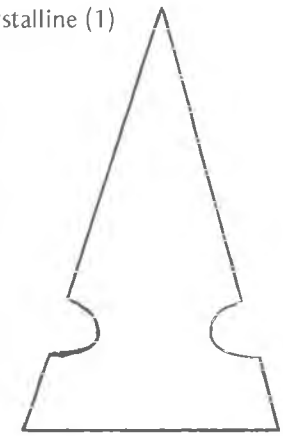
Dart (40) Arrow (3)

Group 3: Side-notched. N = 21

(Figure 39 *a–k;* Table 17)

Material

Basalt (20) Cryptocrystalline (1)



Description

All Group 3 points have notches on their lateral blade edges. The stems are as wide or wider than the blades, on all but two points, and maximum width of the points usually occurs at the juncture of the base and the basal edges. Only nine of the 21 points are complete; one is fragmented at the neck; five are fragmented just above the neck; four are missing tips; and two have incomplete bases. Blade symmetry is present on 15 points, being triangular on 12 and ovate on three. Bases are straight on 16 points and subconcave on three, one from each category possessing a basal barb. Eighteen stems have lateral edges ranging from 4–9 mm in length, with a mean of 5.8 mm.

Chipping technique

Random primary chipping occurs bifacially on 18 points, and unifacially on two points that have unchipped ventral faces except for edge retouch. One point is made from an extremely small, thin flake and only exhibits edge retouch. Bifacial edge retouch is present on 17 of the above 18 points.

Table 17. Dimensions of Group 3 projectile points.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	10	15–49	26.4	11.35
Width	21	9–23	14.7	3.37
Width of neck	21	6–16	7.8	2.44
Thickness	21	1–7	3.1	1.15

Phase affiliation

Kamloops Phase (21)

Function

Dart (2) Arrow (19)

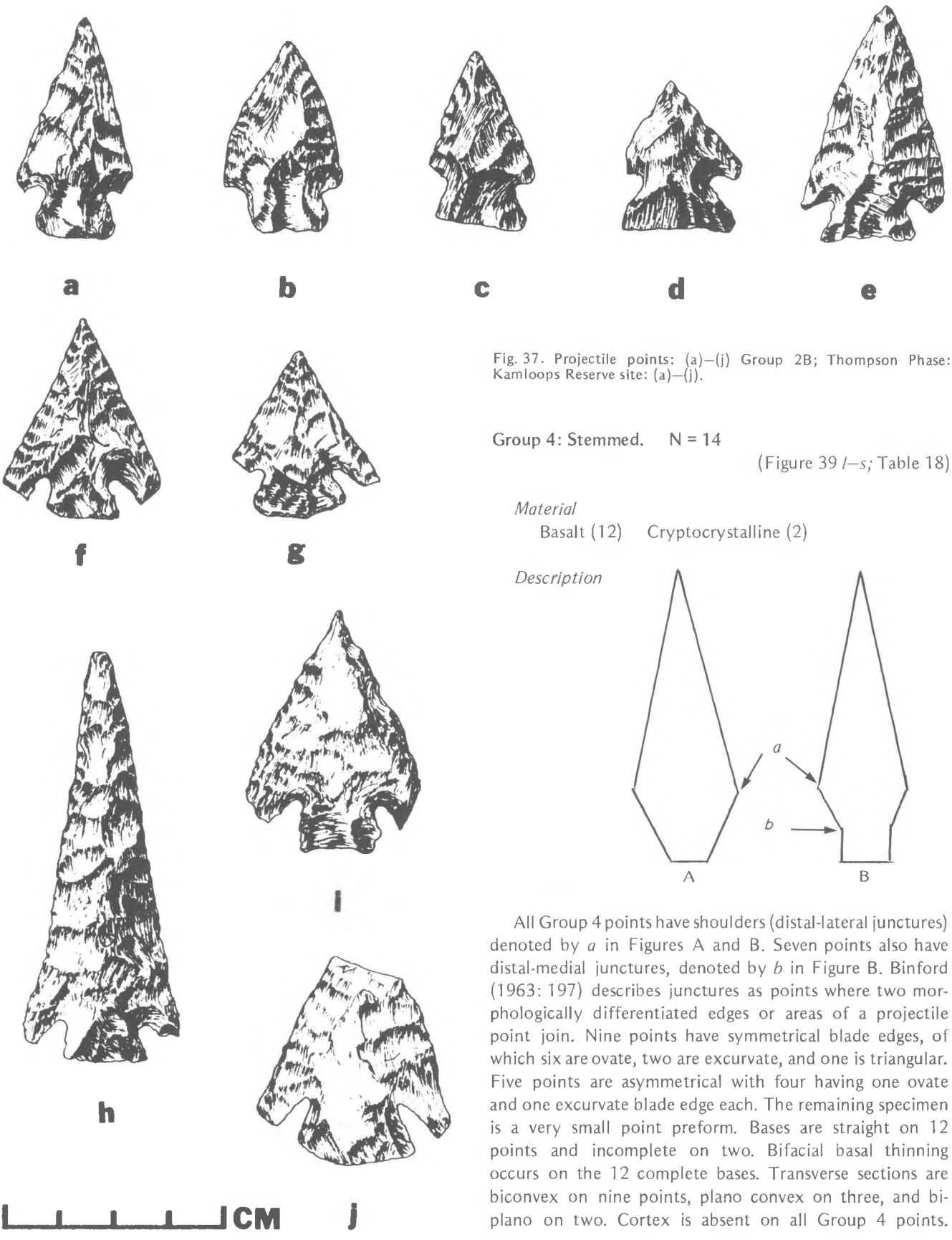


Fig. 37. Projectile points: (a)–(j) Group 2B; Thompson Phase: Kamloops Reserve site: (a)–(j).

Group 4: Stemmed. N = 14

(Figure 39 *l–s;* Table 18)

Material

Basalt (12) Cryptocrystalline (2)

Description

All Group 4 points have shoulders (distal-lateral junctures) denoted by *a* in Figures A and B. Seven points also have distal-medial junctures, denoted by *b* in Figure B. Binford (1963: 197) describes junctures as points where two morphologically differentiated edges or areas of a projectile point join. Nine points have symmetrical blade edges, of which six are ovate, two are excurvate, and one is triangular. Five points are asymmetrical with four having one ovate and one excurvate blade edge each. The remaining specimen is a very small point preform. Bases are straight on 12 points and incomplete on two. Bifacial basal thinning occurs on the 12 complete bases. Transverse sections are biconvex on nine points, plano convex on three, and biplano on two. Cortex is absent on all Group 4 points.

Chipping technique

Primary chipping has left mainly lamellar and expanding flake scars. Five points have at least one unflaked surface except for edge retouch, which is present on nine of the 14 points.

Table 18. Dimensions of Group 4 projectile points.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	14	23–65	43.2	9.82
Width	14	7–34	18.0	5.92
Width of neck	14	3–20	12.4	3.99
Thickness	14	3–9	6.4	1.70

Phase affiliation

Thompson Phase (13) Kamloops Phase (1)

Function

Dart (12) Arrow (2)

Bifaces N = 743

Bifaces are bifacially flaked tools whose main function was cutting. They are thus commonly referred to as "knives". The following artifact class description is divided into two type-groups; formed bifaces and non-formed bifaces.

Formed Bifaces N = 224

Representing a conscious attempt to manufacture a specific form, the shapes of formed bifaces result from secondary bifacial retouch of primary-chipped flakes or small cores. The formed biface type-group is divided into eight descriptive types, based on shape, two types of biface fragments, and a final type that includes all the miscellaneous bifaces. Figure 40 illustrates general biface forms described in this discussion.

Ovate Bifaces N = 11

(Figure 41*e, f;* Table 19)

Material

Basalt (11)

Because of conflicting distinctions in comparative literature, differences between lanceolate and ovate biface forms are often difficult to distinguish. However, all 11 specimens in this assemblage display a generalized ovate form, with pointed distal ends, excurvate blade edges, and convex to straight bases. Maximum width occurs proxi-

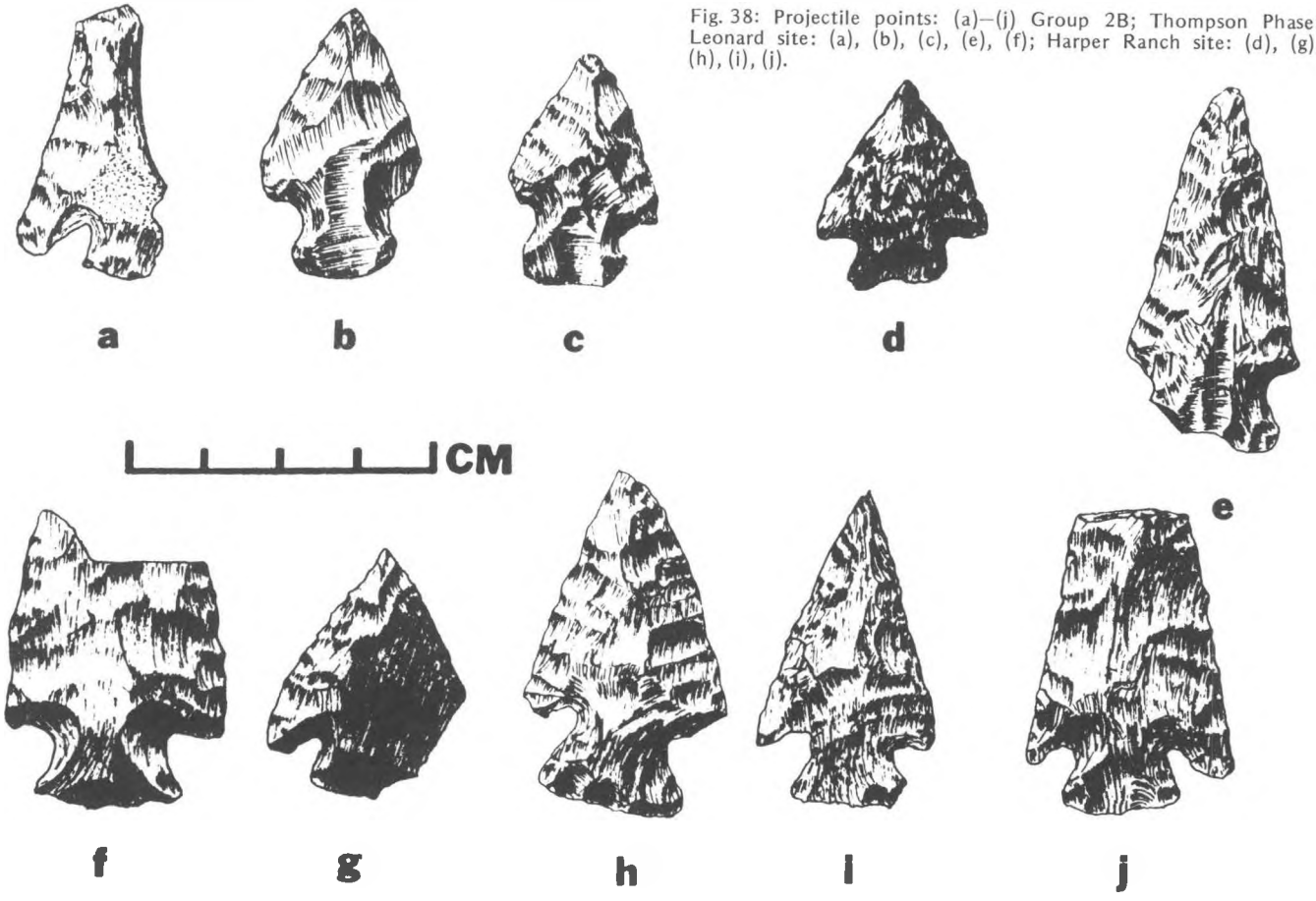


Fig. 38: Projectile points: (a)–(j) Group 2B; Thompson Phase: Leonard site: (a), (b), (c), (e), (f); Harper Ranch site: (d), (g), (h), (i), (j).

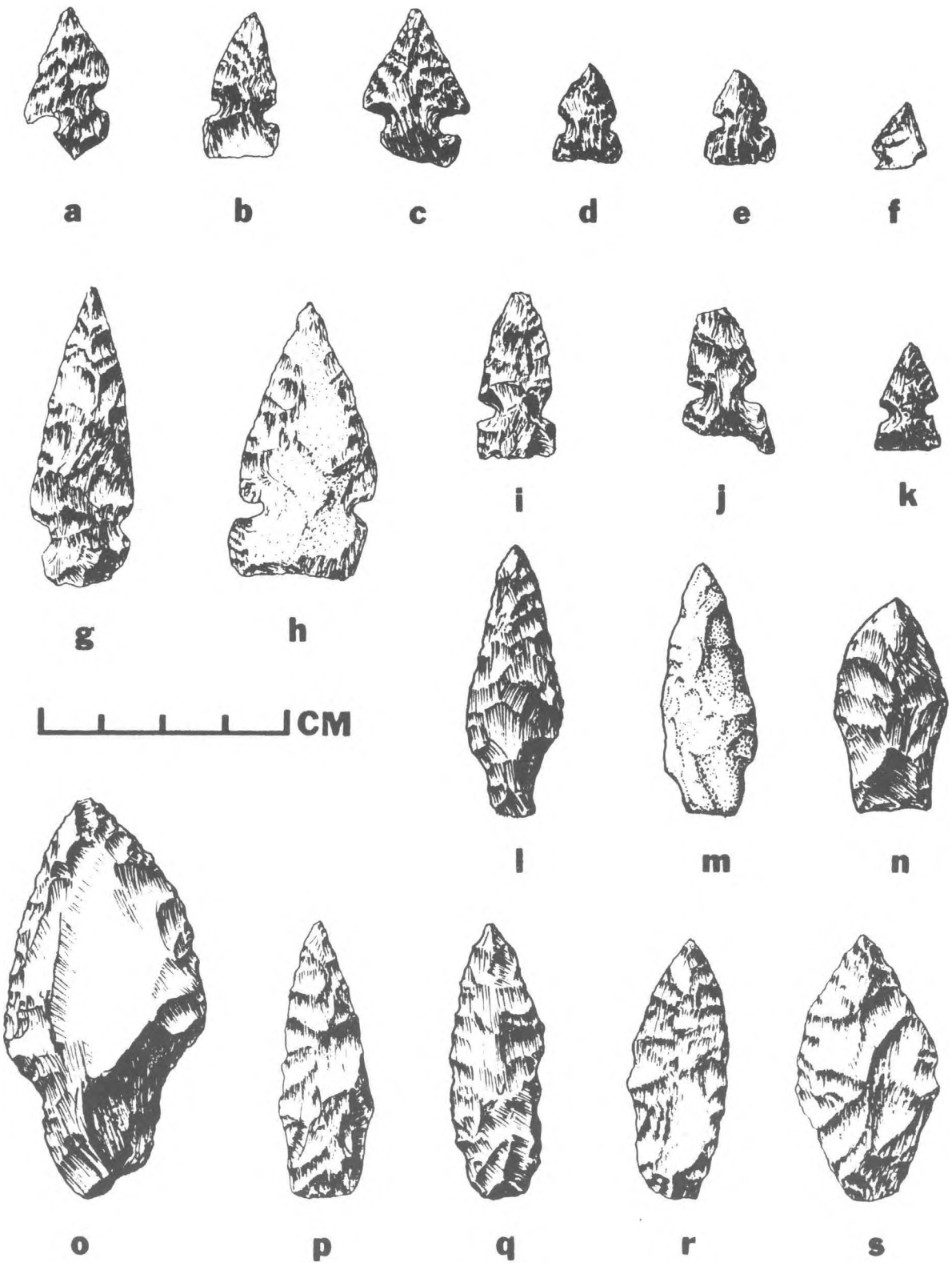


Fig. 39. Projectile points: (a)–(k): Group 3; (l)–(s): Group 4. Thompson Phase: Kamloops Reserve site: (p), (r), (s); Van Male site: (l), (m), (n); Harper Ranch site: (q); Kamloops Phase: Leonard site: (a), (f); Harper Ranch site: (b), (c), (d), (e), (g), (h), (i), (k), (o).

mally, but not at the base. Due to the smallest of the sample, possible lanceolate forms are therefore included in the ovate group to make biface units more manageable in comparative typology.

Seven of the bifaces display blade symmetry, and cross-sections range from biconvex to plano convex. Chipping techniques are represented by wide random flake scars, associated with a range of secondary retouch from minimal to fine parallel flaking along blade edges. Basal thinning is present, but evidence of wear is rare. The widths of three ovate bifaces fall within the range of widths for leaf-shaped projectile points, and may have possibly functioned as such.

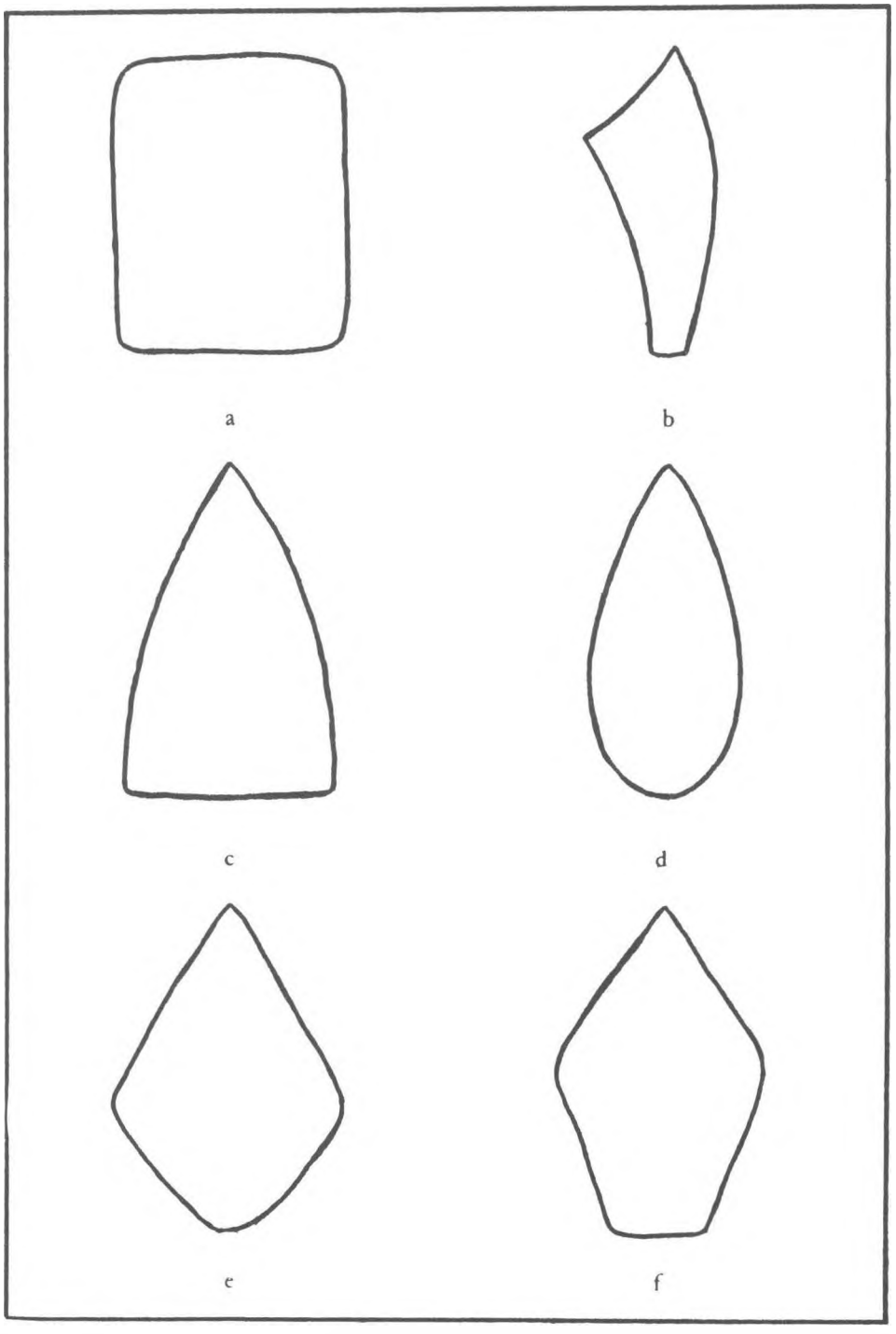


Fig. 40. Biface form types: (a) rectangular; (b) quadrilateral; (c) triangular; (d) ovate; (e) rhomboidal; (f) pentagonal.

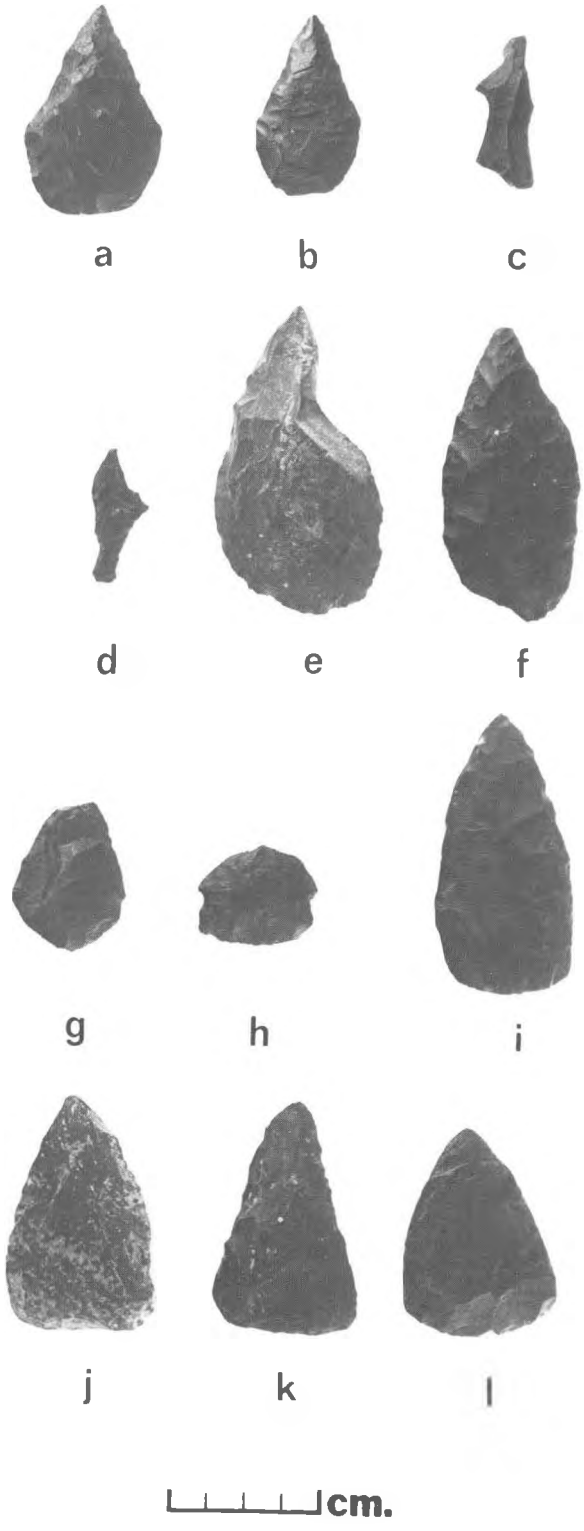


Fig. 41. Formed bifaces. (a), (b) Pentagonal; (c), (d) Quadrilateral; (e), (f) Ovate; (g) Rhomboidal; (h) Hafted biface; (i)—(l) Triangular. Kamloops Reserve site: (d), (i), (j), (k), (l); Van Male site: (e); Harper Ranch site: Thompson Phase (c), (h); Kamloops Phase (a) (b), (f), (g).

Pentagonal Bifaces N = 4

(Figure 41*a, b;* Table 19)

Material
Basalt (4)

Pentagonal (or five-sided) bifaces display two distal blade edges converging to a tip, and two proximal blade edges converging to a straight or subconvex base. Maximum width occurs at the shoulder, which is the point of juncture between the distal and proximal blade edges. Form symmetry is displayed by three of the specimens. Secondary bifacial retouch is concentrated and steeper along the distal blade edges. The only evidence of wear is along the base and proximal blade edges of one specimen, indicating a possible reversal of distal and proximal functions for this particular biface. The remaining three most probably functioned as knives, but may have been used also as perforators, although evidence of wear patterns does not indicate this.

Quadrilateral Bifaces N = 2

(Figure 41*c, d;* Table 19)

Material
Basalt (2)

Pointed unilateral projections are the basis for the classification of these two bifaces into a distinct biface type. Of the two, one has one unilateral projection, while the other is a thinner flake, with two unilateral projections, and an unflaked ventral surface except for edge retouch. Both bases are missing, thus their similar lengths is probably an insignificant measurement. Being used as perforators is somewhat doubtful due to the lack of wear on the projections. Even though these two bifaces are of minimal significance in this particular biface typology, they may be of importance in comparative analyses with future assemblages.

Rectanguloid Biface N = 1

(Figure 42*j*)

Material
Basalt (1)

The single rectanguloid biface is biconvex in cross-section, and symmetrical in shape, with four straight edges. It is the thickest biface in the assemblage, and has wide flake scars, two areas of cortex on one face, and considerable wear polish along the distal edge and the distal and medial portion of one lateral edge. A much smaller degree of wear polish is present on the two faces, most likely due to extensive handling. The implement was probably used more as a scraper than as a knife. It measures 67 x 45 x 22 mm.

Rhomboidal Bifaces N = 2
(Figure 41 *g*; Table 19)

Material
Basalt (2)

Rhomboidal (or four-sided, diamond-shaped) bifaces consist of two distal blade edges converging to a tip, and two proximal blade edges converging to a rounded or pointed base. Both specimens display form symmetry with the distal blade edges being of greater length, and maximum width occurring at the blade edge shoulders. Cross-sections are plano convex, and there is little to no secondary edge retouch, nor any wear patterns.

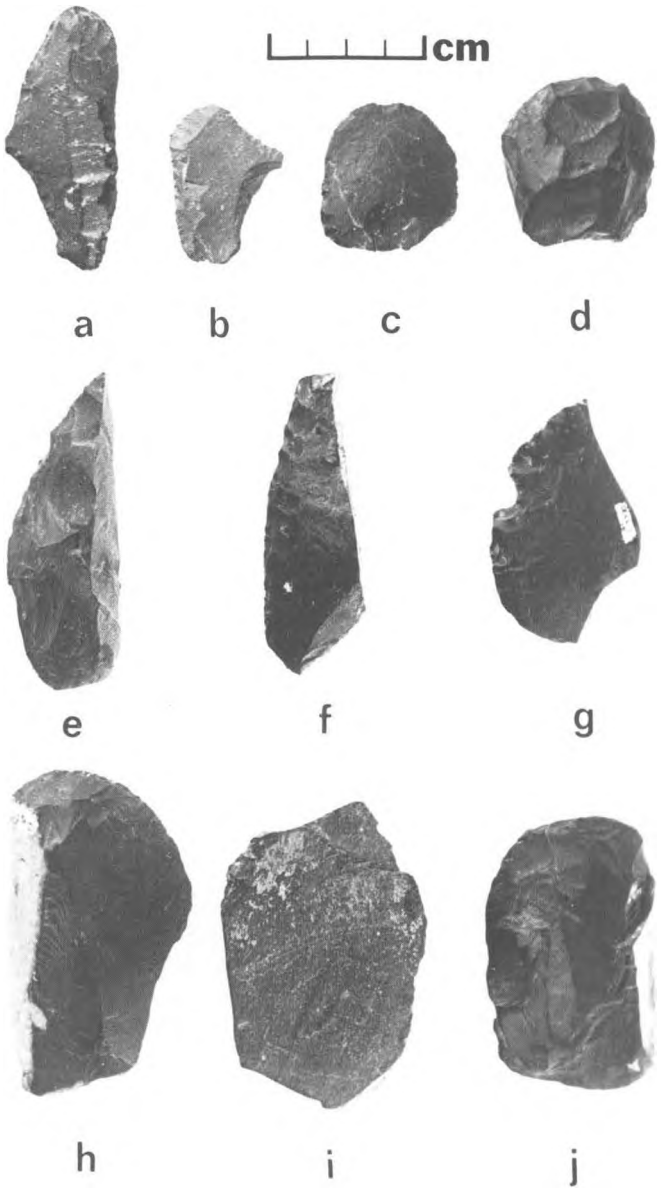


Table 19. Dimensions of formed bifaces by type.

Type	Attributes (in mm)	Number	Range	Mean	S.D.
Ovate	Length	4	45–86	72.5	18.63
	Width	11	9–45	29.9	10.25
	Thickness	11	5–10	9.1	3.42
Pentagonal	Length	2	46–55	50.5	–
	Width	4	25–36	29.2	4.72
	Thickness	4	5–10	6.5	2.38
Quadrilateral	Length	–	–	–	–
	Width	2	–	15.0	–
	Thickness	2	3.4	3.5	–
Rhomboidal	Length	1	–	27.0	–
	Width	2	25–29	27.0	–
	Thickness	2	5–7	6.0	–
Triangular	Length	13	20–74	52.8	13.60
	Width	19	13–42	32.2	7.44
	Thickness	20	4–12	7.8	2.33
Backed knives	Length	15	55–81	69.0	9.51
	Width	15	27–52	38.7	8.38
	Thickness	15	8–20	11.9	3.31

Triangular Bifaces N = 20
(Figure 41 *i–l*; Table 19)

Material
Basalt (20)

These bifaces are triangular in form, with maximum width occurring at their bases. Blade edges vary from excurvate to incurvate, and bases vary from subconvex to straight. Only eight are symmetrical. All of these bifaces were manufactured by random primary flaking, while fine secondary retouch is displayed on the thinner specimens. Wear polish is present on only one triangular biface, along its steeply retouched basal edge, indicating that it was probably used as a scraper rather than as a knife. Basal thinning is present on all other triangular bifaces.

Hafted Biface N = 1 (Figure 41*h*)

Material
Basalt (1)

This specimen represents the only biface notched for hafting in the assemblage. The rounded distal end is thicker than the straight base, and it has minute retouch and some wear. Both the biface's short length in relation to its width, and the thickness of its distal edge probably made it an inefficient cutting tool, but there is no evidence that it was used as a scraper. It measures 21 x 37 x 7 mm with a neck width of 28 mm.

Fig. 42. Formed bifaces; Formed unifaces. (a)–(d) Formed unifaces; (e)–(i) Backed knives; (j) Rectanguloid biface. Kamloops Reserve site: (a), (b), (c), (e), (g), (h). Van Male site: (d). Harper Ranch site – Thompson Phase (j); Kamloops Phase (f), (i).

Backed Knives N = 15 (Figure 42*e–i;* Table 19)

Material
Basalt (15)

Described by neither Sanger (1970) nor Stryd (1973a) as a separate type, backed knives constitute a distinguishable tool type in this assemblage. Even though none have bifacial flaking on their entire surfaces, they belong to the formed biface class because their manufacturer attempted to make a specifically-shaped tool; one that had a thick edge, to be held in the hand, opposite a much thinner, bifacially flaked working edge. All are made from large flakes, with 10 having one lateral cutting edge, four having distal cutting edges, and one backed knife has both a lateral and distal cutting edge. One specimen also has a bifacially flaked lateral notch. Cortex composes five of the backed edges.

Biface Ends N = 90

Material
Basalt (83) Cryptocrystalline (7)

This type includes all biface proximal and distal end fragments, where the overall form of the complete biface cannot be determined. Most of the fragments can be distinguished as either tips or bases. An attempt to classify these biface ends includes approximately 56 tips and 34 bases. If these specimens were complete, then the biface and projectile point typologies might be somewhat altered. Dimensions vary greatly and are not given.

Biface Medial Sections N = 18

Material
Basalt (18)

Like the above type, these biface medial sections are fragments whose overall form cannot be described. They very possibly include some projectile point fragments.

Miscellaneous Bifaces N = 60

Material
Basalt (52) Cryptocrystalline (8)

Miscellaneous bifaces include indistinguishable biface fragments, and less than 10 fragmented biface preforms.

Non-formed Bifaces N = 519

Material
Basalt (491) Cryptocrystalline (28)

More commonly known as bifacially retouched flakes, this type-group is comprised of small, thin, irregularly-shaped flakes which represent little or no attempt to achieve a specific form in manufacture. Edge retouch was of greater importance to the manufacturer than overall shape of the flake. The retouch on these flakes is continuous, and represented by either bifacial edge retouch on the same edge or by alternate retouch on the same or different edges. Dimensions in this type-group vary greatly, and are not given.

Unifaces N = 915

Forming the largest artifact class in the assemblage, unifaces are unifacially chipped flakes which cannot be assigned a specific function such as scraping. They were primarily used for small-scale cutting, and are divided into two type-groups, formed and non-formed unifaces.

Formed Unifaces N = 4 (Figure 42*a–d*)

Material
Basalt (4)

Like the formed biface type-group in that their overall shape was intentionally designed, these four unifaces are implements which cannot be more specifically typed into either scrapers or gravers. Two of them resemble the smaller quadrilateral bifaces, each possessing one lateral projection, possibly serving as a graver spur. Both however have continuous unifacial retouch and use modification on all edges, indicating their use as cutting implements. The other two unifaces are ovate-shaped with continuous lateral and distal cutting edges.

Non-formed Unifaces N = 911

Material
Basalt (811) Cryptocrystalline (99) Granite (1)

Six hundred-sixty-four unifacially retouched flakes and 247 unifacially utilized flakes comprise the two artifact types in this type-group. Like non-formed bifaces, these are small, amorphous flakes whose overall shape was of less significance to the manufacturer than their working edge. The utilized flakes exhibit sparse, non-continuous, unilateral edge retouch that is caused by use instead of by intentional manufacture. On the average they are thinner and smaller than the unifacial flakes that are intentionally retouched in manufacture. The latter display steeper, better executed and more continuous unifacial retouch on one or more of their margins. Again, dimensions and edge shape vary greatly, and are not given.

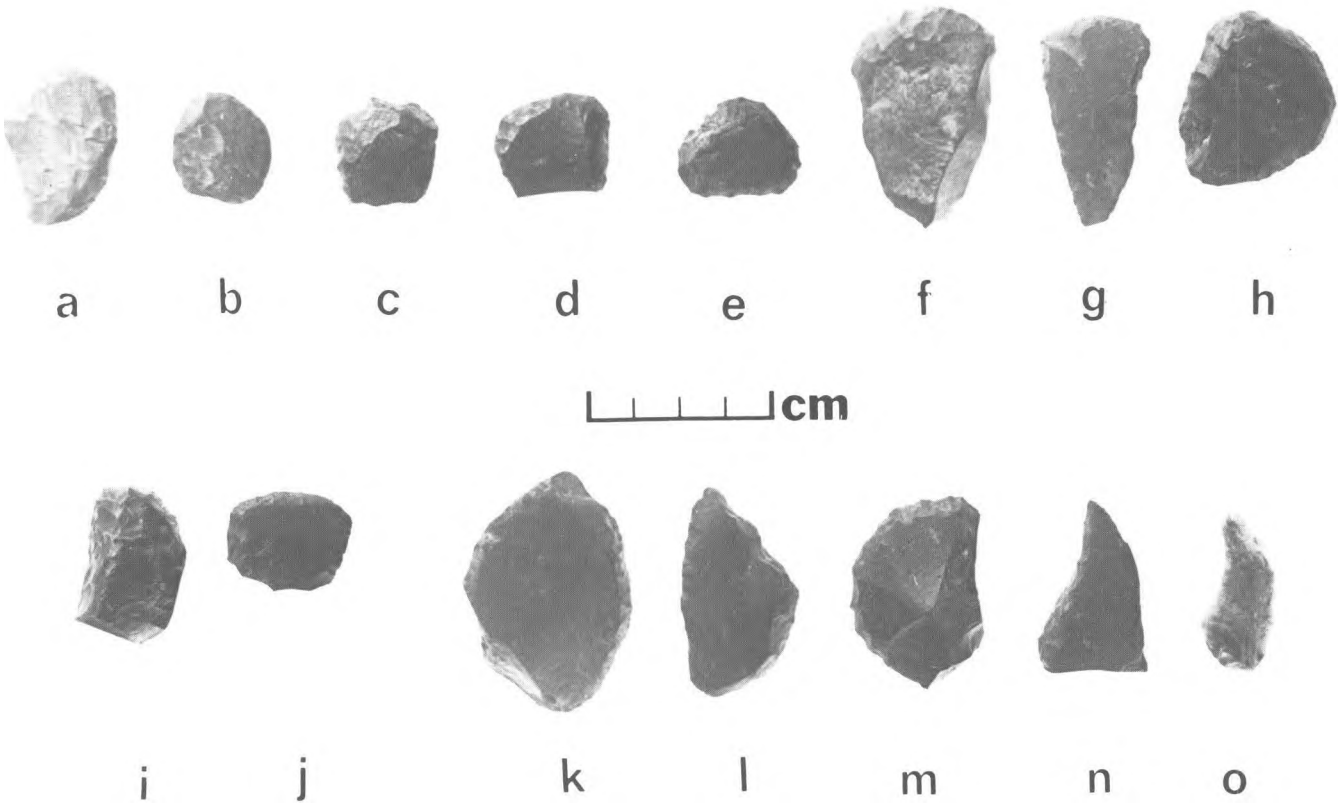


Fig. 43. Scrapers: (a)--(e) Continuous scrapers; (f)—(j) Endscrapers; (k)—(o) Side scrapers. Kamloops Reserve site: (b), (g), (m). Leonard site — Phase affiliation uncertain (i). Harper Ranch site — Thompson Phase (a), (o); Kamloops Phase (b), (c), (d), (h), (k), (l), (n). Protohistoric Phase (f), (j).

Scrapers N = 49

In this assemblage, a scraper is any chipped stone tool with continuous, steep unifacial retouch along one or more dorsal edges, which are referred to as primary working edges. In following Stryd's scraper typology (1973a: 352), most edge retouch is greater than 45°. However, as opposed to Stryd (ibid.), a scraper does not necessarily have to be an implement whose overall form was specifically designed. Scrapers are classified into five types, four based on the location of their primary working edges, and one miscellaneous type.

Endscrapers N = 7

(Figure 43*f—j;* Table 20)

Material

Basalt (19) Cryptocrystalline (8)

All endscrapers have convex primary working edges made at the distal ends of flakes, one of which is a blade. All cross-sections are plano convex. Since the sample is small, and there is no division in the width/depth ratios of the endscraper edges (Fig. 44), no practical division into deep, intermediate, and shallow convex endscrapers is possible.

Retouch along lateral edges, known as secondary working edges, probably either served to flatten the implement to facilitate gripping or hafting, or may also have served to add a cutting edge to increase the tool's utility. Six scrapers have one and eight have two bifacial secondary working edges, while seven have one and three have two unifacial secondary edges. Even though endscrapers were probably hafted to shafts, as illustrated by Smith (1899: 147), basal thinning is present on only five specimens. Wear polish is evident on three of the primary working edges.

Side Scrapers N = 5

(Figure 43*k—o;* Table 20)

Material

Basalt (4) Cryptocrystalline (1)

Side scrapers have primary working edges on one or both of their lateral margins. In the assemblage one crescent-shaped specimen has both a concave and a convex lateral

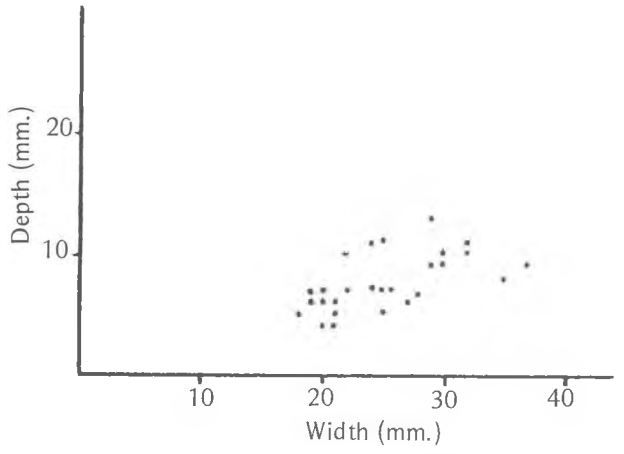


Fig. 44. Width/depth measurement ratios of endscraper edges.

scraper edge, while of the four unilateral side scrapers, three are convex and one is concave. Notch length/depth ratios of the two concave side scrapers range between 7.0–9.7, with a mean of 8.35, well outside the proposed ratios for spokeshave implements (Stryd 1973a: 364). Scraper retouch on the three convex sidescrapers covers the entire lateral side of the implements. Secondary working edges occur unilaterally on three sidescrapers.

Continuous Scrapers N = 8

(Figure 43*a–e;* Table 20)

Material

Basalt (7) Cryptocrystalline (1)

These scrapers have continuous primary working edges along at least three lateral margins, the fourth margin either being fragmented or comprising the striking platform. Probably held in the hand, continuous scrapers are usually smaller than the above types, and their overall form, which varies from rectangular to ovate to triangular, appears to be a preconceived design. Cross-sections are plano convex.

End and Side Scrapers N = 4 (Table 20)

Material

Basalt (3) Cryptocrystalline (1)

Four scrapers in this assemblage are distinguished as having uninterrupted steep retouch and use modification along their distal ends and on lateral margins. They are thus referred to as end and side scrapers, and all four are approximately rectanguloid in form. The four distal edges and two lateral edges are subconvex, while the other two lateral scraper edges are straight. Two scrapers each have one unifacial and two each have one bifacial secondary working edges. Cross-sections are approximately plano convex.

Miscellaneous Scrapers N = 5

Material

Basalt (5)

Four miscellaneous scrapers are unclassifiable scraper edge fragments, while the fifth appears to be a convex end-scraper preform.

Drills N = 10

Drills, or boring tools, are bifacially flaked implements with elongated distal ends, or projections (shafts), whose wear patterns suggest use in a rotary fashion. The drills in this assemblage are divided into two types: expanding base drills and notched drills.

Table 20. Dimensions of scraper types

Type	Attributes (in mm)	Number	Range	Mean	S.D.
Endscrapers	Length	23	21–37	37.3	11.75
	Width	27	19–41	27.4	5.70
	Thickness	27	4–14	7.6	2.36
	Length of Retouch	27	15–47	29.1	7.64
Side Scrapers	Length	4	34–53	43.2	7.93
	Width	5	17–37	26.6	7.30
	Thickness	5	4–11	7.4	3.29
	Length of Retouch	5	29–63	46.4	14.99
Continuous Scrapers	Length	8	15–34	24.5	6.12
	Width	7	12–27	22.9	5.34
	Thickness	8	4–7	5.2	1.04
End and Side Scrapers	Length	4	22–36	29.7	5.80
	Width	4	17–27	22.7	4.65
	Thickness	4	6–8	7.0	0.82

Expanding Base Drills N = 5

(Figure 45*a–d;* Table 21)

Material

Basalt (3) Cryptocrystalline (2)

These five unnotched drills have expanding proximal ends (butts), three of which are approximately triangular in shape, one of which is square, and one of which is ovate. Well-controlled bifacial chipping occurs on the entire surface of three specimens, while the remaining two are thinner flakes with little to no chipping on the faces of their proximal ends. For all but one, the shafts comprise over half of the entire drill length. Shaft cross-sections are biconvex, while butt cross-sections include two biconvex, two plano convex, and one biplano. Basal thinning occurs on all five drills, and they all may have been hafted.

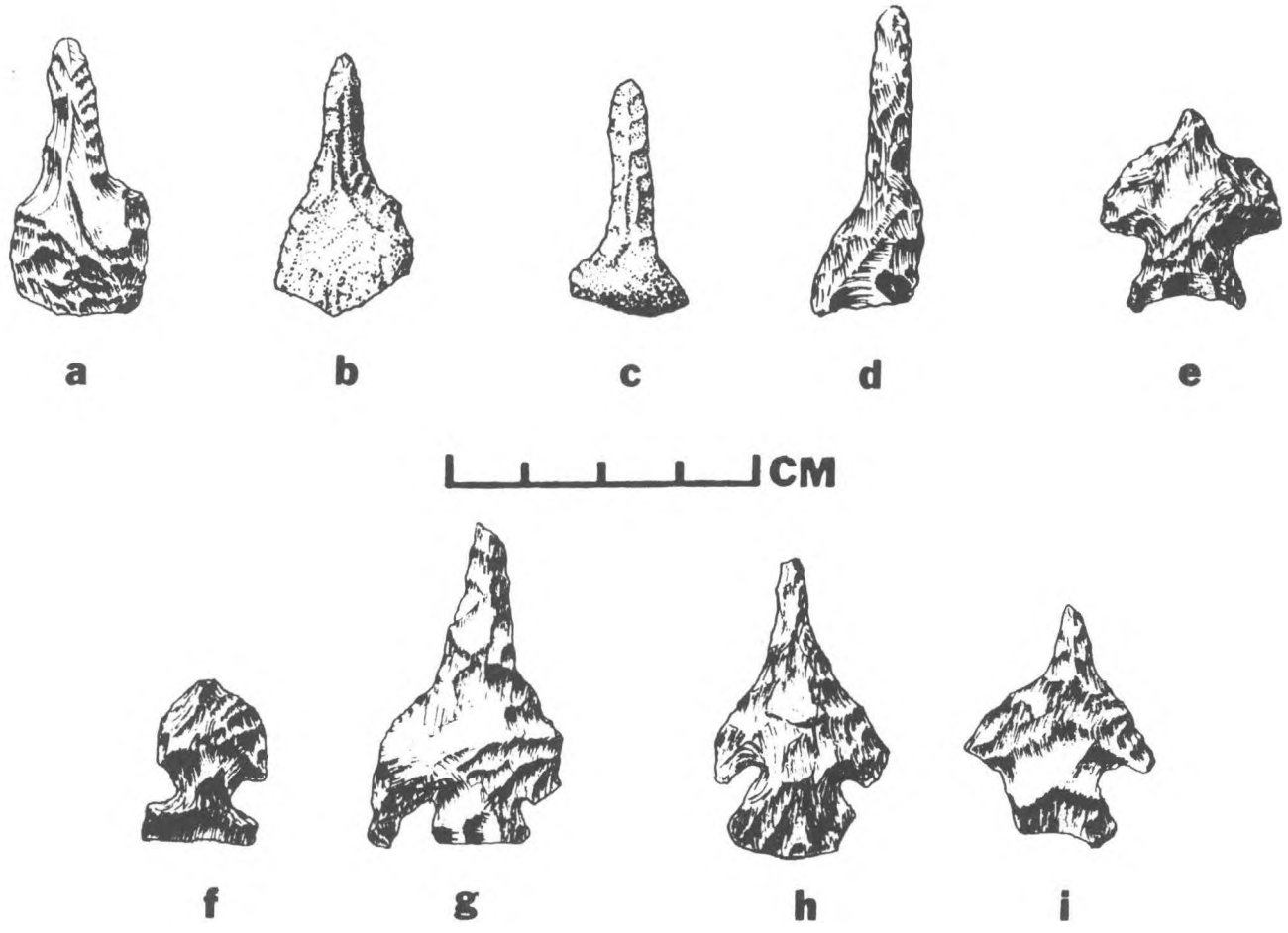


Fig. 45. Drills: (a)–(d) Expanding base drills; (e)–(i) Notched drills. Kamloops Reserve site (b), (c), (d), (e), (g), (h), (i). Harper Ranch site – Thompson Phase (a); Kamloops Phase (f).

Table 21 Dimensions of Drill types

Type	Attributes (in mm)	Number	Range	Mean	S.D.
Expanding base	Length	4	31–40	35.2	3.77
	Width of Butt	5	15–19	16.8	1.64
	Width of Shaft	5	6–7	6.4	0.55
	Thickness	5	3–5	4.2	0.84
Corner-notched	Length	4	27–42	34.7	6.95
	Width (maxi -- mum)	4	24–25	24.5	0.58
	Width of neck	4	11–13	11.7	0.96
	Width of Shaft	4	6–10	7.7	1.71
	Thickness	4	5–7	5.5	1.00

Notched Drills N = 5

(Figure 45*e–i;* Table 21)

Material

Basalt (5)

Resembling notched projectile points, except for their narrower distal ends, these drills were either originally designed for hafting, or they represent reworked projectile points. If the latter was the case, then the distal ends of points were just rechipped to form narrow projections, with the medial margins then forming lateral barbs. However, if these implements were specifically designed for hafting, then it is reasonable to assume that contemporary projectile point hafting designs would be utilized. This is the case, as the four corner-notched drills are from the Thompson Phase, from the Kamloops Reserve site, and the one side-notched drill is from the Kamloops Phase in the Harper Ranch site. The shafts are biconvex in cross-section. Even though minimal wear patterns are evident on all five drills, there is doubt as to the usefulness of the two smaller specimens (Fig. 45*e,f*). Dimensions for the side-notched drill are 21 x 16 x 8 mm; width of neck: 8 mm.

Gravers N = 11

Used to incise, section, or engrave organic materials or soft stone (Crabtree 1972: 68), gravers are characterized

Fig. 46. Gravers; Microblades; Macroblades; Pendant: (a) Narrow spur graver; (b) (c) Wide spur gravers; (d) Pendant; (e) (f) Macroblades; (g)–(i) Microblades; (j)–(m) Point gravers. Kamloops Reserve site (b), (c), (h), (i), (j), (l), (m). Van Male site (f), (k). Leonard site – Thompson Phase (e). Harper Ranch site – Thompson Phase (a) (g); Kamloops Phase (d).

by having one or more small spur-like, unifacially flaked projections, or points. The wide range of form within this small graver sample dictates that they be classified into four types. The types are distinguished not by the overall shape of the implement, but by the width and form of the graving spur, as graver function was most probably determined by the spur. All the gravers were made on flakes, and they all exhibit just one graver spur each. Cross-sections range from plano convex to triangular. Graver spur retouch is steep, and occurs solely on the dorsal faces of the implements. Dimensions for the three non-miscellaneous types are similar and given in Table 22.

Table 22 Dimensions of non-miscellaneous gravers.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	7	30–54	36.0	8.14
Width	9	18–29	22.9	4.26
Thickness	9	2–10	5.9	2.32

Wide Spur Gravers N = 3

(Figure 46*b,c;* Table 22)

Material

Basalt (2) Cryptocrystalline (1)

These three gravers have prominent, medially-placed distal spurs, ranging between 4 – 6 mm in width, and 8 – 10 mm in length. Unifacial chipping occurs over the entire dorsal surfaces of two specimens, while the third is fragmented just below its spur. Ventral face retouch occurs only along one proximal edge of one of the two complete specimens.

Narrow Spur Graver N = 1

(Figure 46*a;* Table 22)

Material

Basalt (1)

This graver also has a very prominent, medially-placed distal spur, but it is distinguished from the above because of its smaller spur dimensions of 2 mm in width and 4 mm in length. It may have been used in the manufacture of different implements or of different materials. Ventral face retouch occurs along both proximal edges, and except for the manufacture of the graver spur, there is very little chipping on the dorsal face.

Point Gravers N = 5

(Figure 46*j–m;* Table 22)

Material

Basalt (2) Cryptocrystalline (3)

These five gravers have laterally-placed distal spurs, formed by one concave distal margin and one convex to straight lateral margin. Only one specimen has chipping over its entire dorsal surface, and only three have retouch on their ventral basal and/or proximal edges. One graver with a broken tip has unifacial retouch along only one spur margin, which happens to form a relatively narrow, semicircular notch with the butt (Fig. 46*m*). This notch exhibits some use wear, and has a length/depth ratio of 4.10. Even though it just falls outside of Stryd's spokeshave range of

variation (1973a: 364), this tool may well have functioned as such. Another graver is a very thin flake, 2 mm in thickness, and has an extremely sharp tip (Fig. 46*l*); it may have been used as a perforating tool.

Miscellaneous Gravers N = 2

Material
Basalt (1) Cryptocrystalline (1)

Two implements have pointed distal ends that resemble graver tips. However distal edge retouch on their ventral faces indicates that they may have also functioned as perforators. Their dimensions fall within the dimensional ranges of the non-miscellaneous gravers, but are not included in Table 22.

Microblades N = 5
(Figure 46*g–i;* Table 23)

Material
Basalt (2) Cryptocrystalline (3)

Although the mean dimensional attributes are greater than those of the Lochnore-Nesikep locality microblades (Wyatt:1970), these five are called microblades to distinguish them from the much larger macroblades in this assemblage. Struck from similarly shaped cores, and having straight, parallel edges and ridges, four are bifacially and bilaterally retouched, and one is truncated with a removed burin spall (Fig. 46*i*).

Macroblades N = 2 (Figure 46*e,f*)

Material
Basalt (1) Cryptocrystalline (1)

Only two of several parallel-sided flakes in this assemblage are termed macroblades, because their form indicates that they were struck from a prepared core. One is complete with bilateral and bifacial retouch, and measures 45 x 17 x 4 mm (Fig. 46*f*). The other is longer, even with its fragmented distal tip, and has steep unifacial retouch along one distal edge. It measures 61 x 18 x 5 mm.

Pendant N = 1 (Figure 46*d*)

Material
Basalt (1)

The one specimen that can be described as a chipped stone pendant is bifacially flaked and biconvex in cross-section. Its bulb-like distal end demonstrates that it was possibly designed for suspension. Unfortunately, the proximal end is fragmented. All surfaces and edges are very well worn, most probably due to extensive handling. It measures 31 x 21 x 6 mm, with a neck width of 6 mm.

Table 23 Dimensions of Microblades.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	5	24–36	31.6	4.83
Width	5	8–13	10.2	1.64
Thickness	5	–	3.0	–

Pièces Esquillées N = 1

Material
Basalt (1)

Following MacDonald's description, this artifact class is characterized by overall rectanguloid shape and "... bipolar flaking from paired crushed and battered surfaces" (MacDonald 1968:85). Stryd (1973a:369) proposes that they were possibly used as splitting or slotting tools in the working of bone, antler, and wood; however, because of their scarcity in the assemblages of the south-central plateau, as Sanger (1970:84) implies, this one example of bipolar flaking is most likely a chipping biproduct. It measures 36 x 42 x 9 mm.

Spall Tools N = 3 (Figure 47)

Material
Granite (3)

Used as scraping implements in the tanning of hides, one of the three cortex spall tools shows bifacial edge retouch, from utilization, and considerable wear polish along its distal margin. Also, its lateral margins were intentionally crushed to round out their edges. The tool is thickest at its proximal end, and thus was probably held in the hand(s), and not hafted. It measures 149x118x18 mm (Fig. 47*c*). The second spall tool is smaller, with wear polish, but little to no utilization retouch along its margins. It measures 77x49x18 mm. The third spall tool measures 87x65x23 mm, is well worn and shows bifacial edge retouch along its distal margin.

Miscellaneous Chipped Stone N = 9

Material
Basalt (8) Cryptocrystalline (1)

This class is comprised of one agate core, three basalt cores, three core fragments, and two otherwise unclassifiable

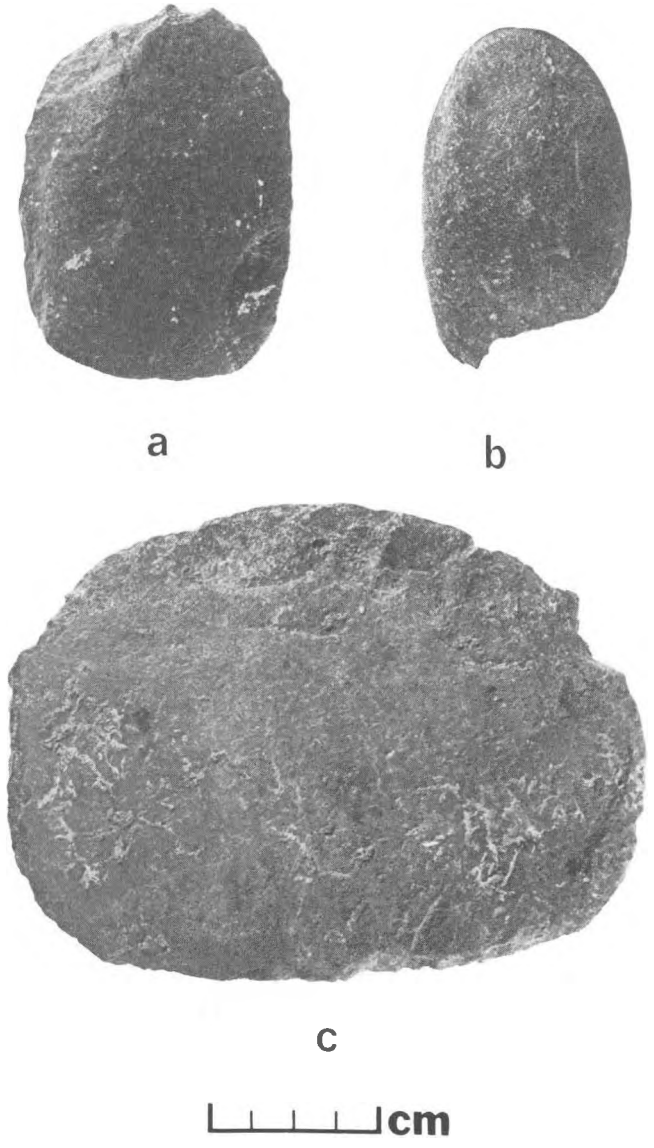


Fig. 47. Spall Tools (a)–(c). Kamloops Reserve site (a), (b), (c).

chipped stone specimens, including a long, thin basalt nodule that shows evidence of retouch along two edges, and one thin flake that has two notches in one edge. Dimensions are not given.

Ground and Pecked Stone Industry N = 13

Ground and pecked stone implements are exceedingly rare in the Kamloops locality, comprising only 0.7% of the archaeological assemblage. The 13 specimens are divided into six classes, five based upon tool function, and one miscellaneous class.

Abraders N = 4

(Figure 48*a,b;* Table 24)

Material
Slate (3) Sandstone (1)

Abraders were commonly used in the grinding and smoothing of bone and antler implements, and are sometimes referred to as grinding slabs. Having specifically designed outlines and relatively thin cross-sections, the three ground slate abraders possess unifacial abrading surfaces, two of which are in the form of narrow longitudinal grooves. One of these (Fig. 48*b*) is approximately rectangular in shape, and was scored and snapped along its proximal margin. Several thin scratches run the length of the non-grooved face and the breadth of the proximal ends of both faces. The distal end is fragmented, while the proximal end shows evidence of wear polish, probably from extensive handling.

The other grooved slate abrader (Fig. 48*a*) is shorter, with its groove comprising just less than 3/4 of the length of the tool. All surfaces and edges have been ground smooth. The third slate abrader is incomplete but was originally pentagonal in shape. It has a uniform thickness, and its three intact margins are flat and at right angles to both faces. The remaining abrader is a sandstone slab fragment with one extremely smooth, flat face.

Table 24 Dimensions of ground stone abraders.

Attributes (in mm)	Number	Range	Mean
Length	3	70–111	93.3
Width	3	38–48	44.0
Width of Groove	2	–	17.0
Thickness	4	6–15	8.7

Ground Point N = 1

Material
Slate (1)

The single ground stone point is stemmed with a straight base. The blade cross-section is plano triangular, and the stem cross-section is bi-triangular. Both faces are incised with diagonal parallel incisions, and the tip exhibits nine minute facets, ground during manufacture. It measures 27 x 8 x 3 mm.

Hand Maul N = 1 (Figure 48*c*)

Material
Greywacke (1)

Ovate in form and biconvex in cross-section, this rela-

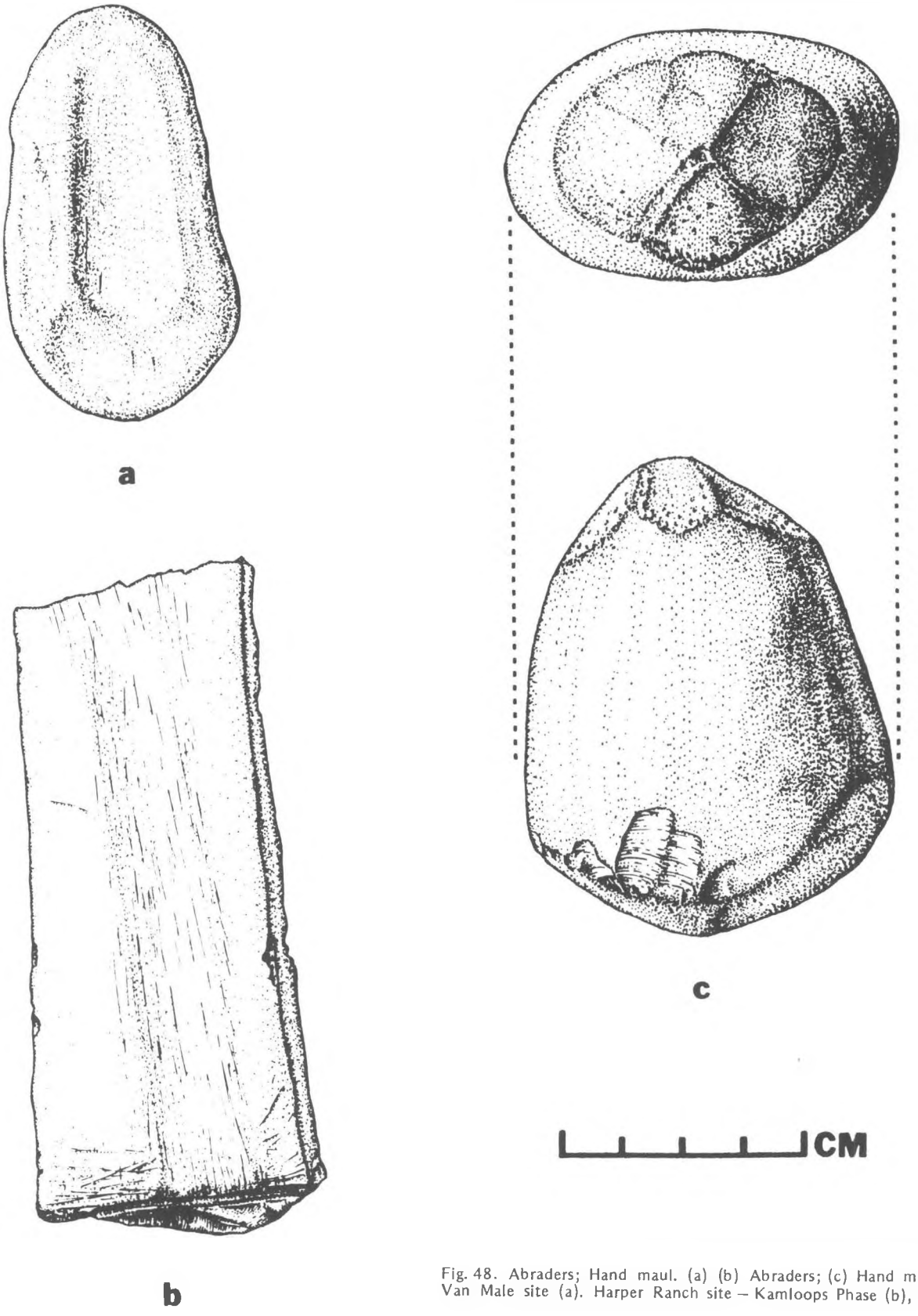


Fig. 48. Abraders; Hand maul. (a) (b) Abraders; (c) Hand maul. Van Male site (a). Harper Ranch site – Kamloops Phase (b), (c).

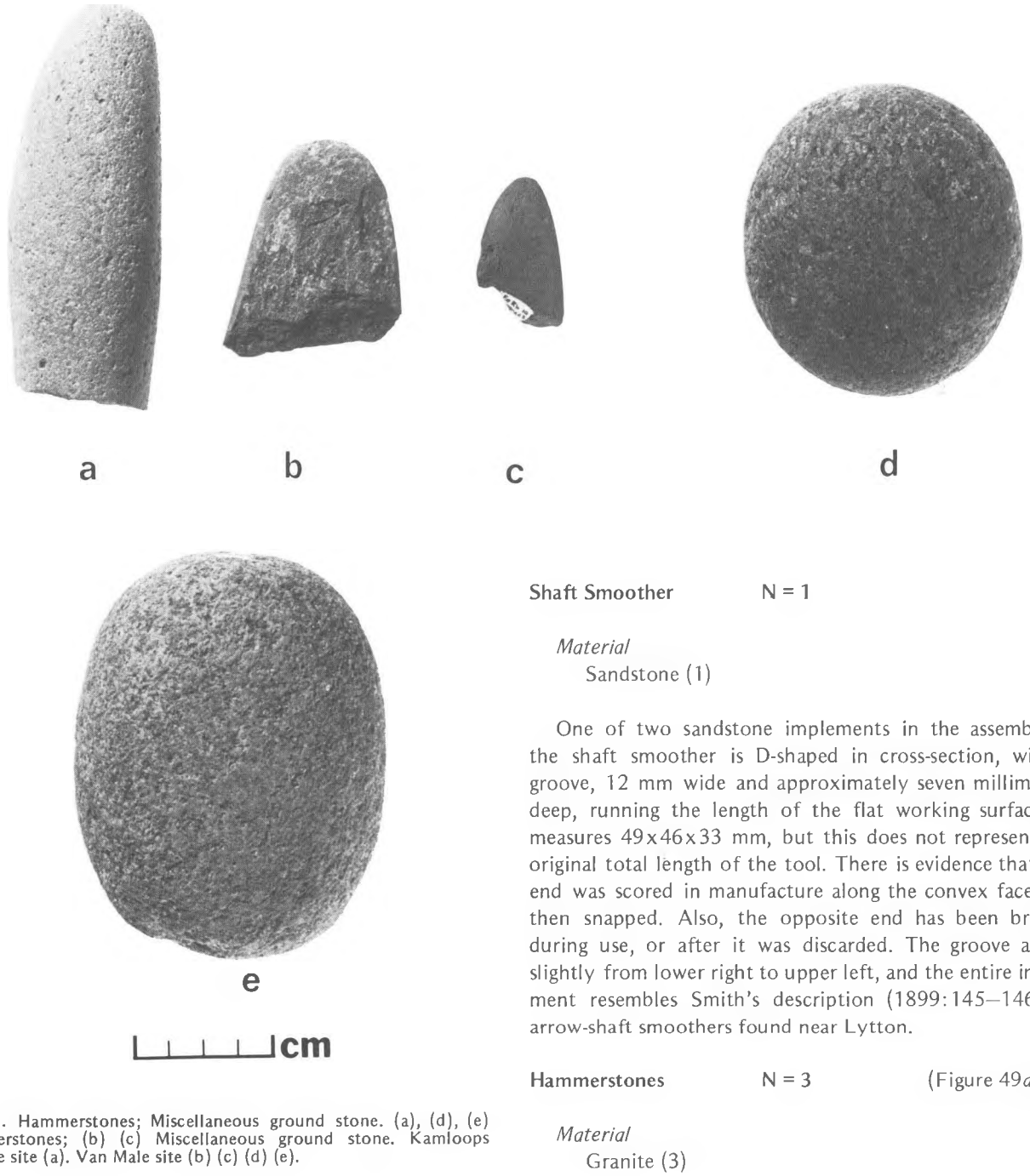


Fig. 49. Hammerstones; Miscellaneous ground stone. (a), (d), (e) Hammerstones; (b) (c) Miscellaneous ground stone. Kamloops Reserve site (a). Van Male site (b) (c) (d) (e).

tively small and extremely smooth hand maul possesses four distal facets converging to a tip, and a double-faceted base. Manufactured by grinding, the basal facets provide for an easier grip of the base, and the distal facets form a small tip, which was used for pounding, or hammering, as evidenced by its battered texture. A few chipping scars, produced in the manufacturing process, occur along two basal margins. It measures 79x63x43 mm.

Shaft Smoother N = 1

Material
Sandstone (1)

One of two sandstone implements in the assemblage, the shaft smoother is D-shaped in cross-section, with a groove, 12 mm wide and approximately seven millimetres deep, running the length of the flat working surface. It measures 49x46x33 mm, but this does not represent the original total length of the tool. There is evidence that one end was scored in manufacture along the convex face and then snapped. Also, the opposite end has been broken during use, or after it was discarded. The groove angles slightly from lower right to upper left, and the entire implement resembles Smith's description (1899:145–146) of arrow-shaft smoothers found near Lytton.

Hammerstones N = 3 (Figure 49*a,d,e)*

Material
Granite (3)

Two hammerstones are oval-shaped pebbles ranging in weight from 547–943 grams. Both show minimal wear from battering, one along its entire lateral extent, and the other just at its two butt ends. The third hammerstone is a small, oblong fragment, D-shaped in cross-section, and it shows extensive pitting wear at its single butt end. This implement was probably used for more precise pounding, or crushing, than the other two, such as in the manufacture of chipped stone tool edges.

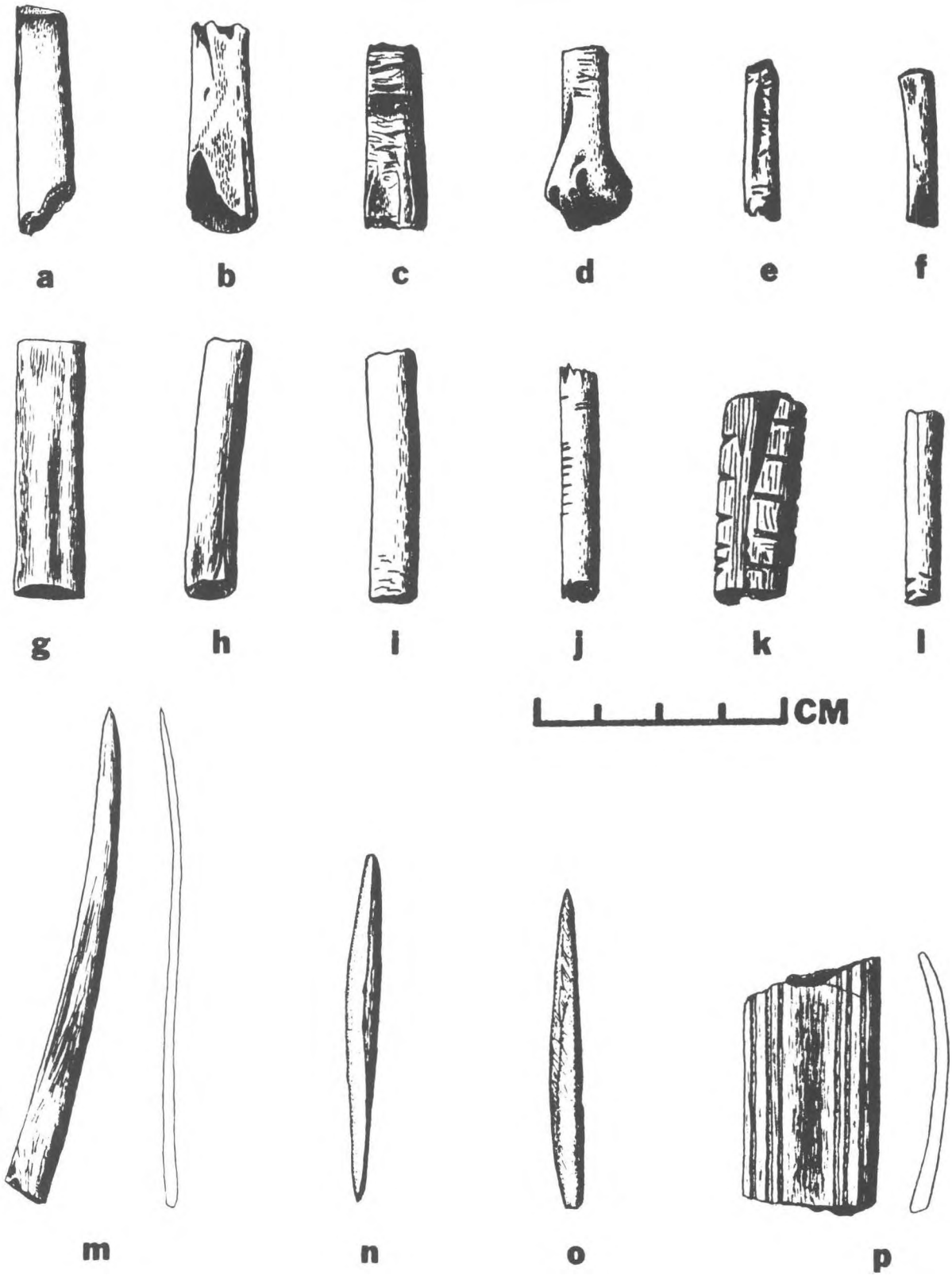


Fig. 50. Bone beads; Bone tubes; Bone point; Composite toggling harpoon valve; Miscellaneous bone. (f)–(l) Bone beads; (a)–(e) Bone tubes; (o) Bone point; (n) Composite toggling harpoon valve; (m) (p) Miscellaneous bone. Harper Ranch site – Kamloops Phase (a)–(p).

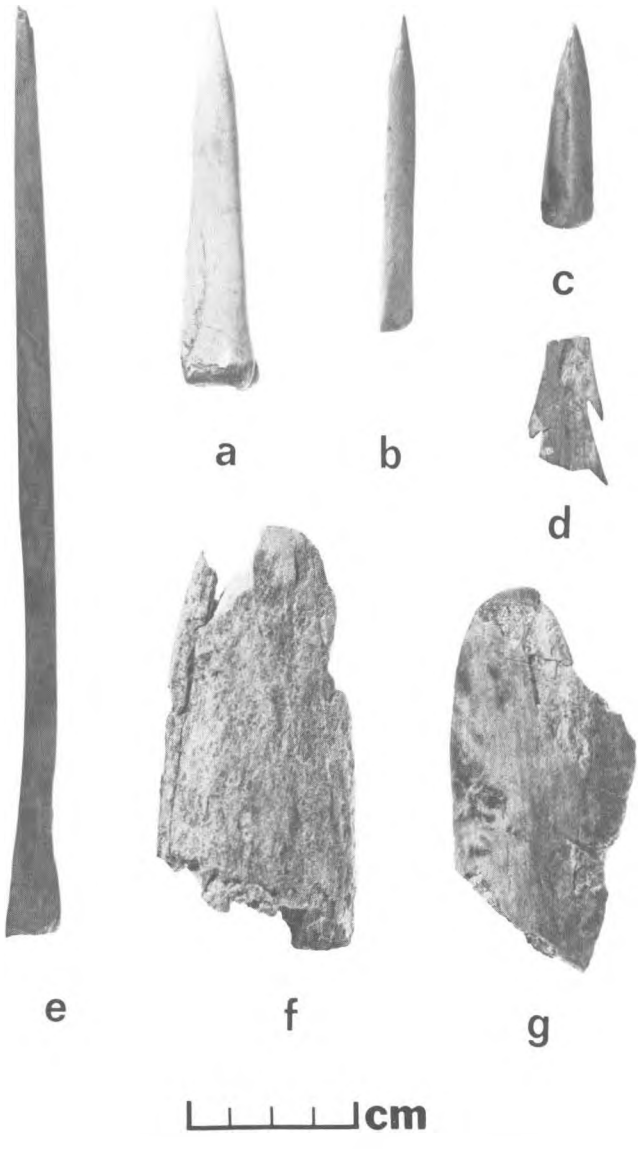


Fig. 51. Bone awl; Antler wedges; Antler projectile. (a) (b) (c) (e) Bone awls; (d) Antler projectile; (f) (g) Antler wedges; Kamloops Reserve site (g); Van Male site (d); Leonard site—Kamloops Phase (c); Harper Ranch site—Thompson Phase (f); Kamloops Phase (a) (b) (e).

Miscellaneous Ground Stone N = 3

(Figure 49*b,c*)

Material

Granite (2) Sandstone (1)

This class contains two ground adze-like fragments and one flat, oval-shaped pebble. The latter has three margins exhibiting wear from grinding, and one margin exhibiting wear from pounding. It measures 116x99x40 mm. The ground adze-like fragments possess rounded tips. One has all its edges ground smooth, and the other shows a small degree of battering wear at its tip. This one may have functioned as a stone wedge.

Bone Industry N = 59

In the Kamloops locality, artifacts made of bone are rare in the Thompson Phase, while their increased abundance later in time is a significant indicator of Kamloops Phase occupations. The 59 bone artifacts represent 3.9% of the total archaeological assemblage. They are typed into six classes, of which three are functional, two are descriptive, and one is miscellaneous.

Bone Beads N = 9

(Figure 50*f–l;* Table 25)

Made by scoring and snapping of cylindrical bird bone, seven of the beads are complete and two are longitudinal fragments. All ends have been ground smooth, and all the beads show varying degrees of polished lustre. Two beads are decorated with short parallel incisions perpendicular to their length, one with four vertical series of five or six short incisions each (Fig. 50*k*), and the other with one series of nine incisions (Fig. 50*j*). This bead is also incised with small notches cut into and circumscribing both its ends.

Table 25. Dimensions of bone beads.

Attributes (in mm)	Number	Range	Mean	S.D.
Length	9	25–43	35.2	6.12
Outside Diameter	6	5–11	7.8	2.23

Bone Tubes N = 15 (Figure 50*a–e*)

A bone tube is typed as any unfinished or broken cylindrical bone fragment, unclassifiable as a bead. Of the 15 artifacts in this class, six are completely cylindrical with only one end scored and snapped, and represent bead fragments, or remnants of bones from which beads were manufactured. Grinding has produced a small hole in one of these tubes, making it a possible whistle (Fig. 50*c*). The nine remaining artifacts are tube fragments, six of which demonstrate evidence of scoring, snapping and smoothing, and three of which are marked by series of short parallel decorative incisions. Bone tube dimensions are not given.

Bone Awls N = 5 (Figure 51*a,b,c,e*)

Of the five awls, four display considerable skill in manufacture, and show a small degree of wear from utilization.

Three of these are made from ungulate metapodials, one of which is extremely highly polished. The fourth awl is the longest awl in the assemblage, and is a split long bone, rectangular in cross-section, with four ground flat faces extending from epiphysis to tip. The fifth awl is only a slightly modified metapodial. Awl lengths range from 48–218 mm with a mean of 113.0.

Bone Points N = 8 (Figure 50*o*)

With one exception, these implements are all fragments of mammal long bones having one end ground to a point. The only artifact in this class to which a specific function can be inferred is a complete composite toggling harpoon point, 53 mm in length. It has a sharp distal tip and two flat proximal faces tapering to a thin base.

Composite Toggling Harpoon Valve N = 1 (Figure 50*n*)

This single unslotted valve measures 57 mm in length, with a slightly concave point bed and a flat shaft bed, approximately 31 and 26 mm in length respectively. This and the above harpoon point are the only artifacts definitely associated with fishing in the assemblage.

Miscellaneous Bone N = 21 (Figure 50*m,p*)

Miscellaneous bone includes all bone artifacts not classified into the above classes. All are bone fragments that have been modified by either grinding, polishing, and/or incising. One specimen is a rib fragment from a large land mammal displaying a decorative motif of six parallel incisions (Fig. 50*p*). Another is a polished distal fragment of a rib that is ground to a thin flat point and that is snapped at a perpendicular incision at its proximal end. It may have served as a clothing pin (Fig. 50*m*). Two others are ground fragments of mammal long bone, one being a bipoint, 157 mm in length, and the other a highly polished fragment, which may have been a bone pendant.

Antler Industry N = 10

As with the bone industry, implements made of antler are exceedingly rare in the Kamloops locality. Only 10 antler artifacts, comprising 0.5% of all tools, were recovered, five of which are from the Van Male site. Antler artifacts are divided into two functional classes and one descriptive class.

Antler Wedges N = 4 (Figure 51*f,g*)

All four antler wedges are made from elk antler beams, and all possess tapered convex distal ends. Two wedges are complete, one has its proximal, or butt, end missing, and the fourth is in an extremely poor state of preservation. The two complete specimens have unifacial beveling on their lateral margins and on their distal ends. Both proximal and distal ends exhibit extensive wear. These wedges measure 98x47x21 mm and 132x40x32 mm respectively. The third specimen does not appear to have been used as a wedge, because it has been ground smooth over its entire surface and distal tip, and there is no evidence of wear (Fig. 51*g*).

Antler Projectile N = 1 (Figure 51*d*)

The single antler projectile is a medial section of a bifacially barbed point, displaying three barbs. It measures 35x18x5 mm. Two barbs on one side are complete, and measure 6 mm in length and are 16 mm apart. The barb on the other side has its tip broken, and is located approximately equi-distant between the other two.

Miscellaneous Antler N = 5

This class is comprised of five worked antler tines, two of which are missing their tips, and four of which have fragmented or unworked proximal ends. The two with missing tips have ground smooth lateral margins, and their functions are undetermined. The other three have somewhat blunted, scarred tips, and they were most likely used in the pressure flaking of chipped stone.

Shell Industry N = 1

Because of its uniqueness in the assemblage, and its probable use as a bead, as illustrated by Smith (1900: 427), the single complete Dentalium shell is regarded as an artifact. It is from the Van Male site and belongs to the Thompson Phase.

Tooth Industry N = 1

The single tooth implement is an incisor fragment from either beaver or porcupine. Its distal tip has been fragmented, and grinding and smoothing has produced minute parallel striations along its lateral edges. It measures 31 mm in length.

Copper Industry N = 4

Implements made from native copper are rare in the Kamloops locality, and were only recovered from the Kamloops and Proto-historic Phases at the Harper Ranch site. Both Mayne (1861:216) and Boas (1890:637) report

the existence of a copper mine on the north shore of Lake Kamloops, but they did not specify its exact location. Copper artifacts include three cylindrical beads, similar to those illustrated by Smith (1900:427), made from thin sheets of copper. The beads average 29 mm in length and 5 mm in diameter. The fourth copper artifact is a longer, twisted and curved cylindrical piece, 111 mm in length. It was most likely intended to be used in the making of copper beads.

Historic Artifacts N = 11

These artifacts represent the Proto-historic phase, and all but one are non-aboriginally manufactured. All being from the Harper Ranch site, six are associated with the single occupation of House Pit 10, the house pit with a side entrance, and three are associated with the second occupation of House Pit 5. These artifacts include two white tableware porcelain chards, two square nails, two badly corroded pieces of iron, one of which is triangular in shape and could be a point or a broken knife blade, and three buttons, one each of metal, imitation mother of pearl, and shell. The latter is probably aboriginally manufactured. Two rifle pellets, one each of iron and lead, complete the historic sample, and were found near the surface, in House Pit 7 and beside House Pit 4 respectively.

The Kamloops Locality Archaeological Sequence

This section discusses the distribution of the artifact industries and classes within the chronological framework of the Kamloops locality. The emphasis is placed on those artifacts which are of diagnostic value to the chronology. To aid in this discussion, Table 26 shows the distribution and percentage of artifact industries by site, and Table 27 lists the distribution of selected artifact classes by cultural phase.

Table 26. Distribution and percentage of artifact industries by site.

Industry	Site					Total	Percent
	EeRb 3	EeRb 3(S)	EeRb 10	EeRb 11	EdRa 9		
Chipped stone	804	344	250	79	375	1852	94.9
Ground and pecked stone	3		6	1	3	13	0.7
Bone	3		5	6	45	59	3.0
Antler	2		5		3	10	0.5
Shell			1			1	0.05
Tooth					1	1	0.05
Copper					4	4	0.2
Historic					11	11	0.6
TOTALS	812	344	267	86	442	1951	100%
Percent	41.6	17.6	13.7	4.4	22.7	100%	

In the chipped stone industry, which is the largest throughout the entire sequence, a few artifact classes and types show definite temporal significance. The most time-space-culture sensitive class of artifacts in the locality, and throughout the Interior Plateau, are the chipped stone projectile points. They have thus been described in some detail.

As previously mentioned, the general trend in the Late Nesikep Tradition of early, large corner-notched dart points being replaced by smaller corner-notched arrow points, which are in turn replaced by small side-notched arrow points, is also evident in the Kamloops locality. The specific distinction between the Nicola and Lillooet Phases (Stryd 1973a), or between the two early chronological periods of the Late Nesikep Tradition (Stryd 1973b), in the mid-Fraser region is not present however. The distinction is the presence of small corner- and side-notched arrows in the latter phase, or period, but in the Kamloops locality, a small percentage of arrow points is found throughout the Thompson Phase.

The main distinction that does occur in the Thompson Phase concerning this trend from dart to arrow deals with corner-notched point stem attributes, instead of their overall size. There is considerable range and overlapping of attributes displayed by the corner-notched points, and the only attribute that appears to have any temporal significance is their change in stem form. Expanding stem points (Group 2B) cluster earlier in time in the stratigraphic record than straight stem points (Group 2A). A second temporal feature is that Group 2B has a smaller percentage of arrow points (7.0%) than Group 2A (21.0%). Also, although the mean difference between their respective neck widths is not large (0.7 mm), the straight stem point neck widths do average closer to the range of the arrow point neck widths. This trend from larger to smaller points is also seen in the succeeding Kamloops Phase, as the side-notched points tend to be larger in the earlier part of the phase.

The distribution of projectile points by function, phase, and site is shown in Table 28. Leaf-shaped (Group 1) and stemmed (Group 4) points are almost wholly confined to the Thompson Phase, and are approximately contemporary

Table 27. Distribution of selected artifact classes by phase.

Artifact Class	Phase			
	Thompson	Kamloops	Proto-historic	Uncertain
Formed bifaces				
Ovate	6	3	1	1
Pentagonal	1	3		
Quadrilateral	2			
Rectangular	1			
Rhomboidal	1	1		
Triangular	17	3		
Hafted			1	
Backed knives	13	2		
Scrapers				
End	19	5	2	1
Side	2	3		
Continuous	4	4		
End and side	2	2		
Miscellaneous	2	3		
Drills				
Expanding base	5			
Notched	4	1		
Gravers				
Wide spur	3			
Point	5			
Narrow spur		1		
Miscellaneous		2		
Microblades	5			
Macroblades	2			
Pendant		1		
Spall tools	3			
Abraders	3	1		
Ground point		1		
Hand maul		1		
Shaft smoother	1			
Hammerstones	3			
Miscellaneous ground stone	3			
Bone beads		9		
Bone tubes		12	3	
Bone awls		5		
Bone points	5	3		
Composite toggling harpoon valve		1		
Miscellaneous bone	7	14		
Antler wedges	3		1	
Antler projectile	1			
Miscellaneous antler	4	1		
Shell	1			
Tooth			1	
Native copper		2	2	

with the corner-notched points. The Thompson Phase has 71 points, of which 64 are dart and 7 are arrow, and the Kamloops Phase has 32 points, of which 10 are dart and 22 are arrow.

A few other chipped stone artifact classes and types may also be of importance in the interpretation of chronology. The main distinction they represent is between the Thompson and Kamloops Phases, with the former having a higher percentage and a wider range of chipped stone artifact types. The Thompson Phase contains all the microblades, macroblades, spall tools, and all the expanding base and corner-notched drills. It also contains a higher percentage of end scrapers and all formed bifaces, except the pentagonal type. The gravers with relatively wider spurs all belong to the Thompson Phase, while those with narrower spurs, which were probably more efficient in the incising of bone, all belong to the Kamloops Phase. This increased emphasis in chipped stone artifacts in the Thompson Phase is also reflected in the distributions of chipped stone debitage. In the two sites that contain both Thompson and Kamloops Phase components, the higher incidence of debitage appears both times in the Thompson Phase.

Ground stone artifacts are exceedingly rare in this assemblage, and may not be temporally significant. Ten of the 13 ground and pecked stone artifacts belong to the Thompson Phase, however. The small antler sample is also concentrated in the Thompson Phase.

The bone artifact industry is the only one that is more prevalent in the Kamloops Phase, containing 44, or 74.5%, of the 59 bone artifacts. The only bone artifacts associated with the Thompson Phase are some points and miscellaneous bone. The occurrence of bone beads and tubes corresponds to the introduction of a limited amount of decorative or functional incising on bone. A possible direct link between the two phases may be the replacement of Thompson Phase chipped stone drills by Kamloops Phase bone awls.

As can be seen from Tables 11 and 27, the artifactual material comprising the proto-historic period is very scanty, and consists of a few non-aboriginally manufactured items associated with a Kamloops Phase context.

An important feature of the archaeology of the Kamloops locality is the direct contrast in the nature of the culture remains between the excavated house pit sites in this study and the burial sites excavated by Smith (1900) near the confluence of the North and South Thompson Rivers. Most of the excavated house pit components belong to the Thompson Phase, while the three burial sites investigated by Smith all belong to the later part of the Kamloops Phase. Because of their relatively late date and their distinctive nature, there is much better preservation of organic materials and a much wider range of artifact types in the burial sites. More specifically, they contain a higher percentage of bone, antler, shell, and copper artifacts, most of which are associated with art work. Cultural elements found in these sites which have yet to occur within excavated house pit contexts in the locality include the following:

- nephrite celts
- red ochre
- sap scrapers

Table 28. Distribution of projectile points by function, phase, and site.
Th = Thompson Phase; Ka = Kamloops Phase; D = dart; A = arrow.

Site	Projectile Points															
	Group 1				Group 2A				Group 2B				Group 3				Group 4			
	Th		Ka		Th		Ka		Th		Ka		Th		Ka		Th		Ka	
	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A
EeRb 3	2				6	1			14								2			
EeRb 3(s)					1				6								1			
EeRb 10	3				1	1			5								7	1		
EeRb 11									5						3					
EdRa 9			1		2		5	2	8	3	2				2	16	1	1	1	

- bone drinking tubes
- claw pendants
- antler root-diggers
- whale bone
- woven fibres, bark and cordage
- wooden bow or spear fragments
- cedar canoe fragments

The reader is referred to Smith (1900: Appendix 1) for a more detailed account of the cultural remains from these sites. The following section discusses the extra-areal comparisons between selected excavated habitation sites in the south-central interior, and does not include the materials from these burial sites.

Extra-areal Comparisons

Comparisons of the Kamloops locality with other localities or regions in and near the Interior Plateau must be viewed in a general, overall perspective. Several varying factors such as amounts of archaeological research, archaeological methodologies and research designs, and degrees of preservation/destruction, may all distort more specific comparisons between areas. Nevertheless, there are several valid conclusions that can be made concerning the relationships of the Kamloops locality to the overall cultural historical synthesis of Interior Plateau archaeology, and these are discussed by region. Since the objective of this study is the interpretation of a local cultural sequence for the Kamloops locality and its relationship to the overall cultural-historical framework of the Interior Plateau, extra-areal comparisons of artifact assemblages are primarily confined to the mid-Fraser area. This is the best archaeologically-documented area in the Interior Plateau, and it is also the area most closely related to the Kamloops locality because of basic similarities in cultural adaptation to comparable resource bases. To a lesser degree the archaeological sequence of the Kamloops locality is also similar to that of the Nicola Valley region. Other areas in the Interior Plateau however, such as the Okanagan and the Arrow Lakes regions, show few similarities to the Kamloops sequence.

The Mid-Fraser Region

Since the cultural pattern of the Kamloops locality probably evolved from a mid-Fraser pattern and, since contact through trade and the sharing of resources probably continued throughout the prehistoric sequence, a detailed comparison of artifacts is necessary to distinguish the slightly divergent adaptive efficiencies of the two areas. More specifically, the Kamloops locality artifact assemblage, containing over 1900 artifacts from four excavated house pit sites and one burial site, is compared with two assemblages from the mid-Fraser area; one from the Lochnore-Nesikep locality, in which seven excavated and surface collected sites yielded over 8000 artifacts; and the other from the Gibbs Creek locality in the Lillooet area, in which over 10,500 artifacts were recovered from six excavated sites. This discussion will emphasize the comparison of major artifact industries and selected artifact classes and types.

Comparison of Artifact Industries

Even though total numbers of artifacts vary greatly between the two areas, the relative percentages of artifact industries are almost identical. Chipped stone comprises the largest artifact industry in all three assemblages, with fine-grained vitreous basalt being the most commonly utilized raw material. The typological classifications for the three localities also portray approximately the same variety and number of chipped stone artifact classes and types.

Ground stone comprises slightly higher percentages in the two mid-Fraser assemblages, mainly because of the presence of artifacts made from nephrite, steatite, and argillite. Nephrite celts, steatite pipes, pendants, beads, and

spindle whorls, and argillite saws form the majority of the ground stone industry in the Lochnore-Nesikep locality, and approximately 25% of the Gibbs Creek ground stone, but were totally absent from the excavated components of the Kamloops locality.

Considering that comparative amounts of bone and antler artifacts are influenced by differential rates of preservation, the percentage of bone in the Kamloops assemblage is almost three times that of each of the two mid-Fraser assemblages. The ranges of bone artifact types in the latter are somewhat greater however, and are also associated with a much higher incidence of both representational and geometric art work. The temporal range of bone artifacts also varies between the three localities. Bone implements are fairly evenly distributed throughout the Upper Middle and Late Periods of the Lochnore-Nesikep locality (Sanger 1970:98), but are concentrated in the Lillooet and Kamloops Phases in the Gibbs Creek locality (Stryd 1973a), and just in the Kamloops Phase in the Kamloops locality.

Antler artifacts comprise approximately 0.5% of all three assemblages, but as with bone implements, there is a wider range of artifact types and use of decorative motifs in the two mid-Fraser assemblages. Antler hafts, digging stick handles, and figurines are not present in the excavated house pit samples from the Kamloops locality.

Comparisons of Artifact Classes and Types

Projectile Points

Comparisons made to mid-Fraser projectile points emphasize the time-space-culture-sensitive typology of the Gibbs Creek assemblage (Stryd 1973a:322–345). Less reference is made to Sanger's description of Lochnore-Nesikep projectile points because it is primarily based upon varying clusterings of attributes that do not always portray temporal or spatial significance. The 225 Lochnore-Nesikep points are divided into 15 descriptive point groups, whereas the 463 Gibbs Creek points are divided into three categories: unnotched, stemmed, and notched, each of which is subdivided into arrow and dart points, making six type-groups.

Group 1 dart points from Kamloops resemble Stryd's symmetrically ovate bifaces, and the Group 1 arrow point is leaf-shaped in outline as opposed to the Gibbs Creek triangular unnotched arrow points. Group 2A points from Kamloops tend to resemble most of the Gibbs Creek corner-notched arrow points in general form, but have larger dimensions as only four of the 19 Group 2A specimens are classified as arrow points. Group 2B points from Kamloops resemble the range of corner-notched dart points from Gibbs Creek, but have smaller neck widths and better defined notches, barbs and stems. Another difference is that whereas dart points comprise only 41.3% of all corner-notched points in the Gibbs Creek locality, dart points comprise 88.7% of all corner-notched points in the Kamloops locality. The final significant comparison of corner-notched points concerns the resemblance of Group 2A points with Stryd's corner-notched arrow points and Group 2B points with his corner-notched dart points. This tends to support the above observation that Group 2A points post-date Group 2B points in the Kamloops sequence.

Group 3 arrow points from Kamloops resemble Stryd's side-notched arrow points in form and dimension. One of the Group 3 dart points compares to the side-notched dart points from Lillooet, while the other resembles a large Kamloops side-notched point. Arrow points comprise approximately similar percentages of all side-notched points in the two localities. There are resemblances between Group 4 points from Kamloops and stemmed dart and arrow points from Lillooet, with the only major difference being that Group 4 dart points are narrower with narrower neck widths than the stemmed dart points from Lillooet.

Although the basic trend of change in projectile point form and function (inferred) is similar in the two localities, the differences are much more distinct in the Kamloops assemblage. Its dart points are almost all corner-notched and restricted to the Thompson Phase, and its arrow points are almost all side-notched and restricted to the Kamloops Phase. In the Lillooet area these distinctions are not so well defined, as seen in the much higher percentage of corner-notched arrow points in the Kamloops Phase for example. One point type in the Lillooet area is absent in the Kamloops locality, and it is what Stryd refers to as the Lillooet Corner-Notched point type (Stryd 1973a: Fig. 24*u–x*).

Even though the four typological point groups from the Kamloops locality do not directly correspond to any of the 15 groups from Lochnore-Nesikep, most individual points are comparable. Group 1 points and Group 4 points with distal-lateral junctures from Kamloops resemble Group 1 Lochnore-Nesikep points, and there are several resemblances between Groups 2A and 2B from Kamloops with Sanger's Groups 5–8 and Group 13 from Lochnore-Nesikep. Group 3 points from Kamloops resemble but do not duplicate Group 10 points from Lochnore-Nesikep, and Group 4 points with distal-lateral and distal-medial junctures tend to resemble Group 14 points from Lochnore-Nesikep.

The temporal distribution of similar points from the two localities is comparable also. The distribution of Groups 2A and 2B points mostly in the Thompson Phase corresponds to the Upper Middle Period affiliation of Groups 5–8 and 13 from Lochnore-Nesikep. Group 3 points are restricted to the Kamloops Phase and the comparable Group 10 points are restricted to Sanger's Late Period. The only discrepancy concerns the temporal distribution of leaf-shaped and stemmed points, which are found

throughout the sequence in the Lochnore-Nesikep locality, but are mainly confined to the Thompson Phase in the Kamloops locality. Varying sample sizes may have influenced this discrepancy.

Bifaces

A few chipped stone biface types, including ovate, pentagonal, and triangular, are very similar in all three assemblages. Any variance that does occur is more a result of different typological descriptions rather than the presence of distinctive artifact types. Definite differences do occur however, and concern the presence of backed knives, and quadrilateral and rhomboidal bifaces in the Kamloops locality, which are either absent or not recognized as distinct artifact types in the two mid-Fraser assemblages. A final comparison regards the single hafted biface in the Kamloops assemblage, which does not compare either in form or dimension to any of those from Lochnore-Nesikep.

Scrapers

All scraper types in the Kamloops locality are present in the same relative frequencies in the Gibbs Creek locality. End scrapers in both localities comprise the largest category, being approximately five times as numerous as either side or continuous scrapers. Comparisons with the scrapers from Lochnore-Nesikep are difficult to make because most of the scrapers are associated with the Early and Middle Periods, and are rare in the Late Period (Sanger 1970: 109–110). Stryd (1973a:353) suggests that the Late Nesikep Tradition scrapers lack temporal significance because of their relatively low incidence and their limited morphological variation. In the Kamloops locality however, end scrapers are four times as numerous in the Thompson Phase as in the Kamloops Phase, and this may represent a significant temporal trend.

Drills

There is a higher incidence of drills in the Kamloops locality than in either of the two mid-Fraser assemblages. Resemblances in form occur between some of the expanding base and notched drills and what Sanger and Stryd refer to as perforators, but there are no similarities to what Stryd calls drills (Stryd 1973a: Fig. 28*l–q*). One of the three drills from Lochnore-Nesikep (Sanger 1970: Fig. 34*j*) does however very closely resemble one of the five expanding base drills from Kamloops (Fig. 45*c*).

Gravers

Even though the Kamloops locality graver typology includes more specific types, all the gravers from the three assemblages are basically similar in form and dimension. The only difference is that the proposed distinction between Kamloops Phase narrow spur gravers and Thompson Phase wide spur gravers is not evident in the mid-Fraser assemblages.

Ground and Pecked Stone

Comparisons of ground and pecked stone artifacts with the mid-Fraser localities are difficult to assess because of the discrepancy in the variety of classes between the assemblages. The Kamloops assemblage is unique among the three because of the presence of the ground point and the arrow shaft straightener, and the lack of several other artifact classes. The five fish-net weights from the Brocklehurst burial site also distinguish the Kamloops assemblage as they are not described in either of the mid-Fraser localities.

Bone Artifacts

In both the Kamloops and Gibbs Creek localities preservation of bone is relatively good throughout the sequences, as evidenced by amounts of associated faunal bone (Stryd 1973a:61). This possibly indicates that the representation of bone tools is more a function of technology than of preservation. Even though similarities in bone tools such as awls and points exist, only bone beads are both morphologically and temporally comparable in the Kamloops and Gibbs Creek localities.

The Nicola Valley Region

Wyatt (1972:39) describes the Nicola Valley region as a "... marginal area which faced, in seasonal round and culture, towards the Thompson River Valley". Reasons for this include the following:

- even though the Nicola River Valley is part of the Fraser-Thompson drainage, it lacks the Pacific salmon runs, and during aboriginal times, it was also resource poor in edible roots.
- the Thompson River Valley was abundant in both salmon and roots, and was readily accessible via the valley of the Nicola River, which flows into the Thompson River at Spences Bridge.
- contact with the Okanagan Valley to the east and with the Columbia Plateau to the south was hindered by upland areas, and contact with the Kamloops locality to the north was possibly hindered by the lack of an easily travelled route, especially by water.

Cultural similarities do exist however between the artifact sequences of the Nicola Valley and Kamloops locality, but they generally include traits that are also common to the mid-Fraser region. For example, the earliest known occupation of the Nicola Valley dates to around 2000 B.P., and includes such early Late Nesikep Tradition

elements as pit houses, a wide variety of basalt chipped stone artifacts, large corner-notched dart points without stem grinding, antler tools, and a lack of microblades and microcores. Another factor which may explain the cultural similarities between the Nicola Valley and the Kamloops region is that the former also possessed large herds of elk (Wyatt 1972:28), and thus the similarities, especially during Thompson Phase times, might well be the result of comparative patterns of exploitation of this common resource base, rather than a result of direct contact or diffusion of culture elements. Specific comparisons at this time include the projectile points from the Guichon Slough, Cottonwood and Skuhun Creek sites, which very closely resemble some of the Group 2A, Group 2B and Group 4 points from the Kamloops locality. Similarities later in time include the overall distribution of small side-notched arrow points in all of the Nicola Valley Kamloops Phase sites, and the specific presence of pentagonal bifaces in the Jenny's Flat site.

Generally speaking, the Nicola Valley was a marginal area of poor resources and relatively low wintertime populations, whose closest ties were to the Thompson River Valley to the west. Even though its archaeological sequence represents three periods of cultural adaptation that correspond in general attributes to the Thompson Phase, Kamloops Phase, and the protohistoric period of the Kamloops locality, there is no direct evidence of any form of mutual influence or exchange. Similarities in the two regions are more likely due to the fact that both regions were heavily influenced by cultural developments in the mid-Fraser region.

The Arrow Lakes Region

Separated from the Interior Plateau by the Monashee Mountains, the Arrow Lakes region bears little similarity to the Kamloops locality. It is situated on the Columbia River system and is much more culturally affiliated to the Upper Columbia region of the Columbia Plateau than it is to Interior Plateau cultures to the west. Turnbull (1973: 134) regards the Arrow Lakes' archaeological material as representing an adaptation to a region of limited resource potential, as it is much more heavily forested than the Interior Plateau, and as it also lacks the quantities of Pacific salmon that the Fraser and Thompson River drainages receive.

Even though elements of a successful Plateau adaptation are present (Turnbull 1973:164), the much smaller population size and density did not allow for the development of a culture which is comparable to those of the South Thompson and mid-Fraser regions. The best defined cultural unit for the Arrow Lakes region is the Deer Park Phase, which dates from approximately 3250–1250 B.P. Turnbull (1973:149) says that "Few relationships could be found between the Deer Park Phase and the Interior Plateau".

The Okanagan Region

The Okanagan region is somewhat more comparable to the Kamloops locality, even though its general cultural affiliation is southwards towards the Middle Columbia region of the Columbia Plateau. Although the Okanagan region also lacks quantities of anadramous salmon, this resource was probably obtained through contact with the South Thompson River region. This led to cultural convergence, especially when salmon fishing intensified during the Kamloops Phase of the latter. The Kamloops Phase is comparable but not identical to the Cassimer Bar Phase in the Okanagan region, which dates from 850–100 B.P. (Grabert 1974). The preceding Chiliwist Phase, 1950–850 B.P., also contains similar cultural elements to the Kamloops locality's Thompson Phase, but it probably represents nothing more than a similar adaptive strategy, which also emphasized the hunting of large ungulates. Lack of anadramous salmon may explain the cultural differences between these two regions at this time.

V DISCUSSION AND CONCLUSIONS

Summary of Components and Dating

The compositions of the archaeological components of the four house pit sites are shown in Tables 29 and 30. Table 29 lists the components and the architectural features uncovered in the sites, and Table 30 summarizes the distribution by excavation unit of the two cultural phases and one chronological period. Except for the latest component of the Leonard site and the burial sites investigated by Smith (1900), all of the excavated occupations on the Kamloops Indian Reserve at the confluence of the North and South Thompson Rivers belong to the Thompson Phase. It is the sole component in the Kamloops Reserve and the Van Male sites, and is also the earliest component in the Leonard and Harper Ranch sites. The Kamloops Phase, on the other hand, is comprised of only two components, one each from the Leonard and Harper Ranch sites. The proto-historic period is present only in the latest component of the Harper Ranch site.

Four radiocarbon dates from the Kamloops locality possibly signify the commencement of the Thompson Phase and most of the temporal range of Kamloops Phase. They are as follows:

1. sample: EeRb 3: House Pit 19 occupation zone
   date: 1920±100 B.P. (Gak 3902) – A.D. 30
   association: a floor consisting of black loam and charcoal
   culture phase: Thompson
2. sample: EdRa 9: House Pit 7 wood
   date: 400±80 B.P. (Gak 4914) – A.D. 1550
   association: burnt fallen roof structure lying on top of the pit house floor
   culture phase: Kamloops
3. sample: EdRa 9: House Pit 4 carbon lens beneath and predating house pit floor zone
   date: 1950±130 B.P. (Gak 4915) – A.D. 1
   association: Group 2B projectile points, as illustrated in Figure 38*h, i, j*
   culture phase: Thompson
4. sample: EdRa 9: House Pit 4 a lens containing black loam and charcoal
   date: 1140±100 B.P. (Gak 4916) – A.D. 810
   association: the lens lies underneath the house pit ridge and represents the surface of the pit house bench
   culture phase: Kamloops

Table 29. Distribution of cultural components, occupation zones and other features by site.

Site	Components	House Floors	Other Features	
			Sweat Lodge	Cache Pits
EeRb 3	1	4	1	
EeRb 10	1	4		
EeRb 11	2	2		
EdRa 9	3	11		156

Table 30. Distribution of cultural phases by house pit and locus. x'= presence of component associated with a living floor; x = presence of component not associated with a living floor

Site	House Pit	Locus	Cultural Phase/Period		
			Thompson	Kamloops	Proto-historic
EeRb 3	10		x'		
	19		x'		
	22		x'		
		1	x		
EeRb 10			x'		
EeRb 11		1	x'		
		2		x	
EdRa 9	1		x	x'	
	3			x'	
	4		x	x'	
	5		x'	?	x'
	6			x'	
	7			x'	x
	8			x'	
	9			x'	
	10				x'
	12			x'	
		1	x	x	
		2		x	
EdRa 11				x	

The calculation of ages is based on the Libby's half life of C-14, 5770 years, and the indicated ± errors are the years corresponding to the standard deviation (one sigma) of the beta rays counting statistical errors.

The Thompson Phase represents the initial Late Nesikep occupation of pit house villages in the Kamloops locality. It is distinguished from the succeeding Kamloops Phase and from the early periods of the mid-Fraser Late Nesikep by a variety of concrete cultural and inferred subsistence and demographic traits. The Thompson Phase contains most of

the elements that characterize the two early periods of the mid-Fraser Late Nesikep sequence (Stryd 1973b), but no distinctions are evident for division of this phase into sub-phases that might be comparable with the mid-Fraser sequence. The use of the bow and arrow appears to be present throughout most of the Thompson Phase, but with no definite date for its introduction, and with much less frequency than the use of darts. The representative projectile points are corner-notched dart points that exhibit a much wider variety of morphology and more precision and skill in manufacture than the points of the Kamloops Phase. The possibility of a greater reliance upon hunting over fishing in this phase is indicated by its higher percentage of chipped stone implements.

The Kamloops Phase is distinguished from the Thompson Phase in the Kamloops locality by cultural and temporal criteria. Small side-notched arrow points, ornamentation in bone and native copper, and decorative or functional incising on bone are all diagnostic traits of this phase. The relatively greater percentage of bone tools may indicate a change in technology related to an increased reliance on fishing over hunting. This inference must be made with care however, as differential rates of preservation and the use of nets in fishing must not be ignored as possible influencing factors in relative artifact counts. Whereas the house pits of the Thompson Phase are smaller, saucer-shaped depressions without ridges and often without circumventing benches, those of the Kamloops Phase are wider, circular to oval-shaped depressions, often having steep walls, ridges, and circumventing benches. Larger house pit sizes leads to the inference of larger family sizes, and thus possibly to increases in total population during the Kamloops Phase. Thompson Phase sites may have more house pits per site, but number of house pits in a site is not as indicative of population size as are individual house pit dimensions, because the house pits need not have been occupied all at the same time. Increases in population size are also inferred by the introduction of cache pits in the Kamloops Phase, which might reflect increased food supplies through more efficient means of riverine resource exploitation, and thus the ability to support a larger population. Teit (1900:198) says that caches, or underground cellars, were mainly used for the storage of berries and fish, and not for the storage of meat. Thus the Kamloops Phase may be differentiated from the Thompson Phase by increases in population size and by a shift in subsistence to a greater emphasis on riverine resources. The population increase is also seen in the presence of large complex burial sites such as the Chase Burial site (Sanger 1968) and those excavated by Smith (1900) in the Kamloops locality, all of which belong to the Kamloops Phase.

The date for the transition from the Thompson to the Kamloops Phase is not as important as the transition itself, and it has been tentatively set at 1400 B.P. This date is based upon the fact that the phase was well established by at least 1140±100 B.P., and that its development in the Kamloops locality was probably a result of a gradual diffusion of Kamloops Phase ideas and/or people from the mid-Fraser region, where it has an initial date of 1800 B.P. (Stryd 1973b).

The proto-historic is very poorly defined in the archaeological record in the Kamloops locality. It should be distinguished however because of the introduction of non-aboriginally manufactured items around 1750, and of the horse as early as 1780 (Teit 1909:533). Of the two, the latter had a much greater disruptive influence upon the socio-economic structure of the Interior Plateau culture, as it radically altered traditional concepts of wealth and leadership. Ray (1939), Browman and Munsell (1972), and Palmer (1974b) all emphasize that the introduction of the horse was the initial primary factor leading to the loss of aboriginal life ways. The historic period commenced with the introduction of Euro-Canadian economic values and demands associated with the building of trading posts at the confluence of the North and South Thompson Rivers in 1812. The introduction of guns and of more horses, and the demand for salmon and furs by the traders led to the disappearance of traditional patterns of seasonal transhumance and of production and exchange. Palmer concludes that following this initial demand for furs:

> The subsequent development of ranching, farming and other industries precluded a return to traditional practice by denuding the Interior Plateau of native foods and restricting the movements of the Indians (Palmer 1974b:79).

Settlement Patterns

A culture's settlement pattern refers to its spatial adaptation to an environment. Following Sanger (1970) and Stryd (1973a) this discussion on settlement patterns in a broad sense incorporates the morphology of individual house types, the relationship of houses within a community, or village, and the spatial relationships between villages.

House Types

The only house types investigated to date in the Kamloops locality are winter habitation, semi-subterranean pit house dwellings, whose form and dimension can be readily determined from their still extant house pits. The temporal significance of house pit design is one of the concerns in cultural reconstruction in the locality. The trend through time appears to be towards larger house pits, as smaller, shallower, saucer-shaped house pits are succeeded by wider, deeper house pits with steeper walls and circumventing benches. For example, the house pits of the Thompson

Phase average around five metres in diameter and less than 50 cm in depth, while those of the Kamloops Phase average over seven metres in diameter and 75 cm in depth. The opposite trend occurs in other areas in or near the south-central interior in the Lillooet area (Stryd: pers. comm.) as in the Okanagan region (Grabert 1974:71), in the Arrow Lakes vicinity (Turnbull 1973:138), and in the Hope-Yale locality (von Krogh 1976:214–15), where wider, steep-walled house pits predate the simple, saucer-shaped ones.

Reasons for this discrepancy may centre on the fact that house pit designs are influenced by demography, by rates of deposition, by soil conditions, and/or by climate. Both Sanger (1970:114) and Stryd (1973a:76) emphasize that house pit attributes probably reflect the insulative value of the house walls and the thickness and hardness of the strata that must be excavated in the original construction. The enlarging of an earlier house pit for reoccupation would also be easier than digging a new depression, and this might also be a reason for some of the larger later house pits in the Kamloops and Lillooet areas. Lack of comparative data hinders positive interpretation of the specific reasons for change in house pit design, but the author feels that the answer is more closely related to the size of the individual family unit that inhabited each house than to any other single reason.

Two distinctive house pits are present in the Kamloops locality, and they are House Pit 10 in the Harper Ranch site and the house pit outline associated with the Brocklehurst Burial site. The former is a proto-historic house pit and is the only recorded depression in the locality which indicates the presence of a side entrance. Ray states that side entrances to pit houses are unquestionably characteristic of the American Plateau, just as roof entrances are exclusively used in the Interior Plateau (Ray 1939:136). House Pit 10 must therefore either be a local development or a result of diffusion from the south, most probably after the introduction of the horse. The latter circumstance would correspond to its proto-historic content.

The Brocklehurst Burial house pit is the only one in the locality dug into gravel, and it is also the only one that contains a burial. There is a remarkable resemblance between this site and House Pit 1 at the Pine Mountain site in the Lochnore-Nesikep locality, as it too is the only house pit in that locality excavated into gravel and the only one that contains a burial (Sanger 1970) The burial is associated with Zone 1 in this depression and has a date of approximately 1500 B.P. If there is a direct relationship between these two sites, then this date places the Brocklehurst Burial site towards the end of the Thompson Phase. Comparison of the leister point found in the Brocklehurst Burial site with those from Zone 1 of the Moulton Creek site also gives it a Thompson Phase date.

Intra-site Relationships

House pits within three of the investigated sites are distributed in what appears to be randomly-placed locations in linear alignments that parallel the nearest water source. In both the Harper Ranch and the Leonard sites a line of single house pits parallels the shoreline of the South Thompson River, and in the Kamloops Reserve site the alignment that followed the shoreline of the former slough was several house pits thick. In the Van Male site the house pits are clustered together between two dry sloughs in what appears to be a non-random distribution, with the smaller depressions surrounding the largest one in the middle. This pattern is more comparable to intra-site relationships in the Lillooet area, and may be a holdover from it, as opposed to the linear house pit distribution in the Kamloops Reserve site which is probably a local development to suit local conditions. If this is the case, then we should expect the Van Male site to be the older of the two.

Village design is dependent upon the degree of contemporaneity of the dwellings; that is, the makeup of the village is related to the number of individual houses inhabited at one time. Because of its content and size, the inference is that only the Van Male site was completely inhabited at a single point in time. On the other hand, the number of house pits in the Kamloops Reserve and the Harper Ranch sites indicate that these locations were preferred for habitation over a longer period of time, and that individual village size at any one point in time would not correspond to the total number of house pits still extant today. The smaller artifact assemblage and thinner occupation zone in the Van Male site imply a comparatively shorter occupation than those at the sites with larger numbers of house pits. These data are comparable to the interpretations of village size in the Arrow Lakes vicinity by Turnbull (1973:142–143).

A final comment on intra-site relationships concerns the apparent lack of economic or social specialization associated with any individual habitation structure. The archaeological record implies that each household was self sufficient in the carrying out of everyday activities. Similar conclusions are drawn by Stryd (1973a:80) for sites in the Lillooet area. A possible exception to economic specialization occurs in House Pit 8 in the Harper Ranch site in which several deer had been butchered. This more likely represents however a case of immediate abandonment before the house was cleaned of debris. Non-habitation features in the house pit sites in the Kamloops locality include storage pits in the Harper Ranch site and a sweat lodge depression in the Kamloops Reserve site.

Inter-site Relationships

Locations of winter house pit sites are most probably

influenced by one or more of many ecological factors, including topography, water supply, soil conditions, wind, sunlight, and proximity to subsistence resources. The four house pit sites investigated in the Kamloops locality are all situated on flat terrain, in relatively loose, well-drained soils, and beside a source of clean water. One of the major differences between house pit sites in the South Thompson region and those in the mid-Fraser region concerns the respective ecologies that influenced site locations.

There are few factors restricting the location of winter sites in the South Thompson River region. The water is very drinkable along the entire course of the river, and the floodplain soils are all equally consistent for drainage. Protection from winter winds does not seem to have influenced site location, but there was probably a preference for residence on the north shore of the river to catch a greater amount of winter sunlight. In the mid-Fraser region the much steeper walls of the river valley and the high degree of silt in the river influenced the restriction of house pit sites to the flat terraces above the river beside fresh water creeks or springs. Also, in the Lillooet area, many of the house pit sites lie between knolls on the terraces, and are somewhat protected from the winter winds (Stryd 1973a:86). Ham (1975:211) reports that near the confluence of the Chilcotin and Fraser Rivers, house pits are located on the upper benches to catch the maximum amount of winter sunlight.

The restricting ecological factors in the mid-Fraser would have influenced continual occupation of sites for a much longer time than in the South Thompson region, where there was a greater freedom of choice in site selection. This is exemplified in portions of the South Thompson region floodplains where it is sometimes difficult to distinguish between individual site boundaries. This absence of restrictions to site location is probably the major reason for the comparatively few stratified sites and the much smaller artifact assemblages in the Kamloops locality, in comparison to the relative abundance of cultural material in Late Nesikep sites in the mid-Fraser region.

Subsistence Techniques

Direct archaeological information on subsistence techniques is difficult to obtain because of its dependency upon preservation conditions. Data for reconstruction of subsistence usually must be inferred by relating the carrying capacity and other ecological traits of the region under concern to the associated levels of technology and social organization. This is attempted in part in the following discussion on the subsistence techniques of the Shuswaps who inhabited the Kamloops locality and surrounding areas. Aboriginally, these peoples exploited a wide variety of food sources on a semi-nomadic seasonal round of hunting, fishing, and gathering. Palmer describes the nature of their subsistence by stating:

> . . .that pre-contact Shuswap populations reached equilibrium with the carrying capacity of a heterogeneous environment by following a strategy of balanced specialization on major resources with sufficient diversification to provide subsistence security (Palmer 1974b:23).

Hunting

Palmer (1974b:30) describes the South Thompson region ". . .as especially well situated with respect to hunting territory", because of the proximity of vast grasslands and parklands. In these habitats, mule deer *(Odocoileus hemionus)*, Rocky Mountain elk *(Cervus canadensis)*, and most probably mountain caribou *(Rangifer tarandus)* were the major large ungulates hunted by the Shuswap. Hunting was most often conducted in groups, and frequently involved the use of snares, corrals and dogs (Teit 1909). Both ecological and archaeological evidence implies that elk was more heavily relied upon in the South Thompson region and absent in the more forested mid-Fraser region, where deer was the most heavily exploited mammalian food source (Dawson 1894; Sanger 1968; Palmer 1974b:30). This evidence has important implications in the interpretation of the relatively late introduction of the bow and arrow into the archaeological sequence of the Kamloops locality. Stryd (1973a) hypothesizes that the introduction of the bow and arrow is related to the onset of more heavily forested conditions brought about by the increased rainfall of the Medithermal, and dates this introduction to about 2400 B.P. for the Lillooet area. He bases this upon the inference that a spear or a spear thrower is not as accurate as a bow in a forested habitat because it needs more room to operate. If we assume this hypothesis to be valid, then the heavier reliance in the South Thompson region upon elk would not have led to a similarly immediate adoption of the bow and arrow in early Medithermal times as occurred in the mid-Fraser region. This is because elk prefer the more open parkland country where clumps of conifers provide protection and deciduous trees interspersed with grasslands provide food (McTaggart Cowan and Guiguet 1965:358). Thus an inferred continued reliance upon the hunting of elk in these open parkland is a possible explanation for the emphasis upon corner-notched dart points relatively late in the Kamloops sequence.

Fishing

It is generally assumed by researchers of Interior Plateau prehistory that the exploitation of Pacific salmon was the dominant force behind the creation of traditional Plateau culture. The seasonal round of economic activities

was based upon the annual return to the major river valleys each autumn to fish the Pacific salmon runs. The Pacific salmon, chiefly the sockeye *(Oncorhynchus nerka),* provided a guaranteed annual food supply of high nutritive value, that could be stored for long periods of time. This subsistence pattern led to the establishment of permanent settlement for part of the year in winter villages, and to the gradual development of "Plateau" social institutions and economic trade patterns that persisted until contact times.

Concrete evidence of fishing activity in the assemblages of the Interior Plateau is scanty because of poor preservation of the fish remains and of the technology used to obtain the fish. Fishing implements mainly included nets, weirs, hooks, and spears, made from wood and fibres, and were not subject to high rates of preservation in archaeological sites. Butchering and drying techniques used in the processing of the salmon before its storage or consumption would also have tended to leave few traces in the archaeological record.

The amounts of salmon that were caught by the Shuswap are dependent firstly upon the abundance of salmon, and secondly upon its accessibility. Using data from the International Pacific Salmon Fisheries Commission, New Westminster, B.C., Palmer (1974a:6) states that the Shuswap living along the Fraser and Thompson Rivers and their tributaries would have had access to a low estimate of about ". . .3,900,000 sockeyes in a low year and 96,000,000 sockeyes in a dominant year" based upon the quadrennial cycle of salmon runs of one dominant year followed by three low years. He continues to state that this would ". . .yield an average of about 160,000 pounds of salmon per year". Other species of anadramous salmon probably doubled the carrying capacity of the river system, and thus doubled the potential catch (Palmer 1974a:6).

Availability and accessibility of salmon constitute separate entities however in trying to estimate numbers of fish caught. Kew (1976:9) states that accessibility of salmon is dependent upon two sets of factors: natural conditions and technology. Natural conditions include features of the water and natural habits of the salmon. In relating technology to access, Kew hypothesizes that technology will be highest where the value of the resource is the greatest and where the accessibility is the most difficult. This situation is very well represented by the salmon fishing on the Fraser River from its mouth to Soda Creek, north of Lillooet. Technology, nutritive value, and difficulty in accessibility all increase on the way downstream to the river's mouth. The fishing of salmon on the South Thompson River can also be incorporated into this hypothesis. In comparison to the mid-Fraser, there was less accessibility of fish on the South Thompson, because of the lack of turbulence and of dip-net stations. The fishing technology was thus more complex in the South Thompson region, utilizing more complicated weirs and traps instead of simple dip-nets, and also fishing at night from canoes with spears and torch light. This greater inaccessibility of salmon and the resulting need for more complex fishing technology may be one of the explanations of why there was a greater reliance upon hunting in the South Thompson region than in the mid-Fraser region.

A third aspect to be considered in analyzing fishing subsistence techniques is one expressed by Frederica de Laguna in a comment made at the Northwest Coast Studies Conference, Simon Fraser University, May, 1976. She emphasized that it was not how many fish were caught, but how many fish were processed by women and slaves that should be the important consideration in relating subsistence techniques to actual numbers of fish consumed. Thus it can be seen that even though fishing developed in a major subsistence activity in the Interior Plateau, the calculation of total fish consumption is hypothetical, and that most data on fishing technology must be derived from ethnographic sources.

Gathering

Gathering of vegetal foods was also a principal subsistence activity of the aboriginal Shuswaps, but again because of poor preservation, evidence of gathering technology must be derived from the ethnographies. Digging stick handles, mortars and pestles, are implements commonly associated with the gathering and processing of roots and berries, but they are absent in the excavated components of the Kamloops sequence. Stone mortars and pestles are recorded by Smith (1900) however and are also present in small amounts in local private collections in the Kamloops area. Their absence in the excavated components may be explained by the use of wood as their principal raw material. Appendix C lists most of the ethnographically-recorded plants utilized by the Shuswaps.

The presence of shell remains throughout some of the Thompson Phase and most of the Kamloops Phase components indicates that fresh water mussel shell was relied upon to a greater degree than one expects to find in winter habitation sites. The shell remains are *Margaritifera sp.,* the most common shellfish found in sites in the south-central interior. In the southern Okanagan, shellfish found in association with other food sources implies an early spring to early summer period of occupation (Copp 1976:35). Further study is necessary to interpret a similar situation for occupations in the Kamloops locality, such as that of House Pit 9 in the Harper Ranch site, that contain relatively large amounts of freshwater shell.

In summary, aboriginal Shuswap subsistence utilized a variety of techniques adapted to the exploitation of several seasonally abundant food sources. Palmer regards

Shuswap subsistence as taking the form of a balanced economic strategy of exploitation with equal emphasis upon the similar carrying capacities of deer and elk and of Pacific salmon and that "The figures indicate that ungulates and salmon would have rivaled one another in importance in the Shuswap diet" (Palmer 1974b:28). The archaeological record seems to imply that for a variety of ecological, cultural and demographic reasons, the Shuswap of the South Thompson region emphasized a continued exploitation of a wider variety of food sources than the inhabitants of the Lillooet area, who relied much more heavily upon the single resource of the anadramous salmon. This is probably one of the principal reasons for the differences that exist in the respective archaeological sequences.

Origins of the Kamloops Archaeological Sequence

The origins of the Kamloops archaeological sequence are represented by the initial intensive occupation of the locality's floodplains in association with the introduction of the Late Nesikep Tradition into the South Thompson River region. There is no evidence to date for the Early Nesikep Tradition in the region, and the only evidence for the Old Cordilleran Tradition appears in Zone II in the Moulton Creek site, which lies to the east of the boundaries of the locality. The Kamloops sequence dates to *ca.* 2000 B.P., and this section discusses the data that support the archaeology for the initiation of the sequence at this time. Hopefully, further research will not concentrate solely on pit house sites, but attempt to locate and recover data on components that might predate the Late Nesikep Tradition in this locality.

The origins of the Kamloops sequence can be related to Elmendorf's analysis of the glottochronology of the Interior Salish languages (Elmendorf 1965). Elmendorf hypothesizes that the proto-Interior Salish originally represented a single speech community that separated from the other proto-Salish speech communities around 6900–6000 B.P. This community developed without any marked internal divisions for a long period of time in a fairly limited region near the northwestern corner of the present Interior Salish territory, until it experienced two periods of expansion and differentiation. The first period reflects a primary dialectic split between easterly and westerly sections of the speech community, and was caused by a slow expansion eastwards and southwards between 4000–3000 B.P. This period was followed by internal divergences, which in the western group were characterized by a separation of pre-Lillooet from pre-Thompson-Shuswap in association with gradual territorial spread. Elmendorf states that much of this expansion ". . .may have proceeded rapidly after 1000 B.C." (Elmendorf 1965:76). The second and final period of expansion and differentiation involves the Shuswap language becoming fully differentiated from the Thompson language around ". . .the beginning of the Christian era" (Elmendorf 1965:76). The earliest radiocarbon dates for the Kamloops locality correspond exactly to this second period, indicating that from the first, the semi-permanent inhabitants of the Kamloops locality's floodplains have always been Shuswap-speakers.

There are several related factors that might explain the cause and/or nature of this territorial expansion of proto-Interior Salish speakers, one of which is a change in climate from the warmer, drier conditions of the Altithermal to the wetter, cooler conditions of the Medithermal, which had already commenced by 3000 B.P. This ecological change must be related to both the technological change from the Early Nesikep to the Late Nesikep Tradition, which Stryd (1973b) dates at 2800 B.P. for the mid-Fraser region, and also to the oldest estimated date for house pits of 3500 B.P. or earlier for the same region (Sanger 1969:196).

The gradually increasing exploitation of the anadromous salmon throughout the Early Nesikep Tradition made possible the use of pit houses for sedentary winter residence towards the end of this tradition. Even though the earliest date for seasonal pithouse villages on the Columbia Plateau is no earlier than 2000 B.P., the change from residence in isolated pit houses to that in permanent pit house villages reflects increases in population size (Browman and Munsell 1972:548), and might be closely related to the beginning of the Late Nesikep Tradition in the mid-Fraser region around 2800 B.P. Demographic pressures within the mid-Fraser region associated with changes in adaptive strategy to the new climatic conditions must both be considered as primary reasons for the eastward expansion of pre-Thompson-Shuswap speakers at this time. Stryd (1973b) suggests that the possibility of external pressures, such as applied by southward-moving Athapascans, might also be a related causal factor.

These ecological and linguistic hypotheses are used to explain the origins of the archaeological sequence in the Kamloops locality, and are summarized as follows:

- the development of intensive fishing techniques for the anadramous salmon in the mid-Fraser region led to increases in population size and to the establishment of semi-permanent pit house villages by 2800 B.P.

- demographic pressure was being applied to this region at this time forcing gradual territorial expansions eastwards.

- the expansions were oriented towards the distribu-

tion of salmon and ungulates, and thus followed the floors of the major river valleys and the adjacent edges of the newly-expanded forests.

- the subsistence emphasis was on hunting, possibly because of the need for more complex fishing technology once away from the mid-Fraser.

- winter residences were established in locales, such as the confluence of the North and South Thompson Rivers, by 2000 B.P., where abundant supplies of both salmon and ungulates were available.

The archaeological record of the Kamloops locality indicates that intensive fishing probably remained of somewhat secondary importance to the emphasis placed upon hunting until the end of the Thompson Phase, at approximately 1400 B.P.

Summary of Archaeological Relationships between the Kamloops Locality and the mid-Fraser Region

The area which is the most closely related to the Kamloops locality is the mid-Fraser region. The origin of the Kamloops sequence is directly linked to the history of cultural change in the mid-Fraser, and subsequent historical developments of culture in the two areas were heavily influenced by the constant exchange and common sharing of resource items that assured a continual diffusion back and forth of cultural elements.

There are however particular differences between the two archaeological sequences, and these reflect the distinctions that exist between the areas' ecologies, demographies, adaptive strategies, and the nature of their respective external contacts. Habitation of the mid-Fraser region occurred for a much longer period of time, and we should expect this duration of cultural accumulation to be responsible in part for the more permanent residence patterns and the slightly more varied technologies in the mid-Fraser region. Other factors that would influence the difference in mid-Fraser traits include:

- the easier accessibility of Pacific salmon, making it the principal food staple,

- the possibility of a larger and more accessible deer population, because of the more forested vegetation,

- the restriction of winter habitation sites to terraces above the Fraser River where fresh water streams or springs are located,

- and the much closer proximity to the influences of coastal cultures.

The archaeological sequence of the Kamloops locality begins much later and reflects a more nomadic settlement pattern with a more balanced exploitation of seasonal resources. Early in this sequence, subsistence emphasized the hunting of large ungulates, mainly elk, and was later supplemented by an emphasis on salmon fishing and the hunting of deer, associated with a noticeable increase in population size. The Thompson Phase represents a cultural development initiated by the introduction of Late Nesikep Tradition elements into what is inferred to be an Old Cordilleran cultural pattern. Old Cordilleran elements are thus present in the Thompson Phase to a much higher degree than in the contemporary early periods of the Late Nesikep Tradition in the mid-Fraser region. The subsequent change to the Kamloops Phase also therefore occurs later in time in the Kamloops locality.

The Kamloops Phase components of the mid-Fraser appear to be more numerous and richer in content. This is most likely a function of greater coastal influences in this area, and the tendency towards year-round settlement in one location as a result of obtaining subsistence needs solely by trading and by acting as "middlemen" in the exchange of goods between the coast and the interior (Teit 1909:535). The Kamloops Phase in the Kamloops locality is restricted to a few components, and this is probably due to limited sampling to date. Even though the locality acted also as one of the important trading centres in the Interior Plateau, the nature and amount of the trading never allowed for permanent year-round settlement. There was also little direct contact between the coast, or the lower Fraser canyon and this locality because of the filtering effect of the cultures in-between. Thus the South Thompson region probably had little to do with the contribution of interior traits into the cultural pattern represented by the Skamel Phase of the Fraser canyon sequence, and conversely received little direct influence from the cultures of the canyon's succeeding Emery and Esilao Phases, which is so evident in the mid-Fraser region. Even if direct contact occurred, the more nomadic subsistence patterns in the South Thompson region would not have been conducive to the adoption of coastal culture elements.

Summary of Conclusions

The archaeological analysis discussed in this report attempts to reconstruct the culture history of the aboriginal Shuswap peoples who inhabited the Kamloops locality. Emphasis is placed upon the adaptive values of the material culture, and how this culture was initiated and changed through time in response to changing cultural ecologies. The principal purpose of the research is to interpret a chronological framework and to provide adequate data to be used as a basis for new avenues of research.

The archaeological materials in this study represent approximately 2000 years of continuous occupation of the Kamloops locality, and they reflect two major adaptive strategies. The earlier one, from *ca.* 2000–1400 B.P., is referred to as the Thompson Phase, and is characterized by hunting, fishing and gathering subsistences. The archaeological evidence implies that subsistence emphasis at this time was placed upon the hunting of large ungulates, principally elk. The succeeding adaptive strategy is referred to as the Kamloops Phase, and dates from 1400–200 B.P. It is associated with population increases, and emphasizes the fishing of Pacific salmon as its principal source of subsistence.

The aboriginal culture of the Shuswap evolved in a true "Plateau" sense without influence from the Coast or the Plains. It evolved out of a territorial expansion eastwards from the cultures of the mid-Fraser region approximately 3000 years ago. The two cultural areas subsequently developed somewhat similar adaptive strategies in response to similar ecologies. Major distinctions exist however between the two cultures, and these are reflected in the slightly divergent archaeological chronologies. In describing this divergence, the Kamloops locality may be regarded as peripheral to the comparative cultural affluence of the mid-Fraser region, but this is only due to the former's lack of cultural time depth, its more nomadic subsistence patterns, and its absence of coastal influences.

Due to lack of previous archaeology in the locality, several assumptions have been used in this study, and selected ones are listed as follows:

- settlement in pit house villages implies intensive fishing of Pacific salmon;
- projectile point functions are related to their neck widths;
- house pit size reflects the size of the family that inhabited it;
- cache pits were primary used for the storage of salmon;
- the Early Nesikep Tradition is absent in the Kamloops locality;
- Elmendorf's glottochronology of the Interior Salish is valid.

Using these assumptions in the analysis of the archaeological data, several inferences and interpretations have been proposed to aid in the description of the archaeological chronology. The principal ones concern the elements that mark the change from the Thompson Phase to the Kamloops Phase. They include the introduction of small side-notched projectile points, cache pits, large house pits, bone technology, ornamentation, the inferred change in subsistence emphasis from hunting to fishing, and the inferred increases in population size. Another proposed inference is that sites with fewer house pits were inhabited for shorter periods of time than larger house pit sites.

Hopefully, future research in the locality will test some of the hypotheses proposed here, in order to further our understanding of the cultural adaptation and change that was experienced by the Shuswap peoples of the Interior Plateau of British Columbia.

ACKNOWLEDGEMENTS

This report was originally a masters thesis in the Department of Archaeology, Simon Fraser University.

I would like to thank the following for their assistance in the research and preparation of this work, the Department of Archaeology, Simon Fraser University and the Archaeological Survey of Canada for providing financial assistance; the Kamloops Indian Band for their continued cooperation throughout the investigation; Mr. Raymond Curr for allowing us to camp and work on his land; and Mary Balf of the Kamloops City Museum for informing us of threatened archaeological sites and for providing laboratory and storage facilities. Studer Brother Construction and Walter Cabott Construction delayed their operations so that the two burial sites could be salvaged. Trans Mountain Pipe Line Company assisted in backfilling.

My thanks goes to the members of my committee, Dr. R.L. Carlson, P.M. Hobler, and Dr. A. Stryd for their advice, and also to Dr. H.L. Alexander and Dr. K. Fladmark who also contributed suggestions and criticisms.

I thank the following for their assistance in the preparation of the thesis: B. Hodgson, B. Seymour, D. Lundy, M. Bedarnski, and J. Alperin-Wilson for the artifact drawings; O. Beattie for the artifact photographs; and B. Galdikas-Brindamour, J. Williams, and N. Boucher-White for the faunal analysis.

I thank all the crew members for their participation in the field work, and especially Linda Mitcham who directed the excavation of the Leonard Site.

Finally I am indebted to Joan Alperin-Wilson who encouraged and inspired me to persevere. I would also like to thank my parents who have been so patient.

APPENDIX A

This appendix lists a selection of items of material culture used by the ethnographic Shuswap, as recorded by Boas (1890) and Teit (1909). Some additional information concerning implement function, method of manufacture, and material is also given.

Chipped stone (basalt)
- arrow points
- spear points
- knives – for removing hair from deer hide
- gravers – for cutting and carving of antler and bone

Ground and pecked stone
- pestles and hand-hammers – for driving chisels, wedges and stakes
- celts – clubs, axe-heads, chisels, adzes, and skin scrapers
- wedges – for woodworking
- arrow shaft smoothers – sandstone – grooves made with beaver-tooth knives
- pipes – steatite – bored with flaked basalt point and drills
- paint dishes – steatite
- whetstones and files – sandstone and gritstone

Bone
- chisels (small)
- adzes
- knives
- daggers
- awls
- needles

Antler
- chisels (small)
- chisels (large) – elk, cariboo, and deer – for cutting trees
- arrow flakers
- wedges
- adzes
- knives
- daggers
- root diggers – also used for the digging of copper and paints
- bark-peelers

Shell
- ornaments – Dentalia – traded from the Chilcotin – nose ornaments and necklaces, also used as money

Teeth
- ear ornaments (men and women)
- knives – beaver incisors – for carving wood and stone
- dice – beaver

Copper
- cylindrical beads – for bracelets and necklaces – obtained partly by trade, but mostly was mined at local "digging" on north shore of Lake Kamloops, also used as money

Fibre
- household goods – basketry – made from white pine roots – used for storing, carrying, and cooking
- mats – bulrushes, strung on threads of nettles – mat lodges

Wood
- wedges
- canoes – cottonwood and cedar dugouts, and bark frame canoes
- fire-drills – with rotten willow roots used for spunk
- snowshoes – maple, fir, birch
- baskets – birch bark

Skin
- clothing – deer
- storage – smaller land mammals
- snowshoes – deer and caribou

Implements associated with fishing:
- dip-nets
- fish spears
- hooks and lines
- sinkers

Implements associated with warfare:

Weapons:
- bow and arrow
- lance
- bone club, with a sharp edge
- stone axe, having a sharp point (the stone is fastened in a perforated handle)
- stone club, consisting of a pebble sewn into a piece of hide, and attached to a thong, suspended from the wrist

Armour:
- coats made from strips of wood, and jackets made of a double layer of elk skin
- shields of wood and hide

APPENDIX B

This appendix lists a summary of mammal species in or near the Kamloops locality, as described by McTaggart Cowan and Guiguet (1965). Those mentioned in the ethnographies as being of economic importance are indicated by an "X". Aboriginally, animals were hunted for a variety of reasons, including subsistence, clothing, storage, and/or they represented Guardian spirits. The reader is referred to Teit (1900, 1909) for complete ethnographic accounts of the use of animal resources.

Rocky Mountain Bighorn Sheep *Ovis canadensis canadensis*	X
Mountain Goat *Oreamnos americanus americanus*	X
Mountain Caribou *Rangifer tarandus montanus*	X
British Columbia Moose *Alces alces andersoni*	X
Whitetail Deer *Odocoileus virginianus ochrourus*	
Mule Deer *Odocoileus hemionus hemionus*	X
Rocky Mountain Elk (Wapiti) *Cervus canadensis nelsoni*	X
Lynx (Bobcat) *Lynx rufus pallescens*	X
Mountain Lion (Cougar) *Felis concolor oregonensis*	X
Striped Skunk *Mephitis mephitis hudsonica*	
Badger *Taxidea taxus taxus*	
Wolverine *Gulo luscus luscus*	X
Fisher *Martes Pennanti columbiana*	X
Long-tailed Weasel *Mustela frenata nevadensis*	
Marten *Martes americana abietinoides*	X
Grizzly Bear *Ursus arctos horribilis*	X
American Black Bear *Ursus americanus cinnamomum*	X
Red Fox *Vulpes fulva subsp.*	X
Wolf *Canis lupis columbianus*	
Coyote *Canis latrans lestes*	X
Porcupine *Erethizon dorsatum nigrescens*	X
Meadow Jumping Mouse *Zapus hudsonius tenellus*	
Muskrat *Ondatra zibethica oxoyoosensis*	
Vole *Microtus sp.*	
Bushy-tailed Woodrat (Pack Rat) *Neotoma cinerea occidentalis*	
White-footed Mouse *Peromyscus maniculatus artemisiae*	
American Beaver *Castor canadensis sagittatus*	X
Northern Pocket Gopher *Thomomys talpoides incensus*	
Yellow-bellied Marmot *Marmota flaviventris avara*	X
Snowshoe Hare *Lepus americanus pallidus*	X
Red Squirrel *Tamiasciurus hudsonicus streatori*	X

APPENDIX C

This appendix is a selected list of roots and berries commonly used for food by the ethnographic Shuswap, as recorded by Teit (1909) and Surtees (1974). Additional information concerning when the plants were gathered and eaten, and how they were processed is also given.

Both the abundance and nutritive value of roots and berries made them an important staple of aboriginal subsistence. Teit records that there was a heavier reliance on berries in the northern Shuswap territory, and that the southern Shuswaps relied more on roots, using all the varieties that were used by the neighbouring Thompsons (Teit 1909: 514).

The gathering and processing of roots and berries was women's work. Digging sticks of varying lengths with either wooden or antler handles were used in the gathering of roots, and berries were collected in bark or woven baskets. If not cooked and eaten right away, roots would be strung up to dry on wooden frames, and berries would be laid out on grass mats to dry. Berries were often boiled immediately after they were gathered and made into berry cakes. Underground pits were used to cook fresh roots or to steam dried roots.

Besides being consumed as food, plants were also used for medicines, for chewing gum, for non-medicinal drinks, and for smoking. Fibres and wood were also extensively used in manufacture, and various fruits and lichens were used in the making of dyes and paints. Plants were also used for purification and as scents and charms, and some were even used as horse and dog medicines and animal food. The reader is referred to Steedman (1930) for a complete listing of plants that were utilized by the ethnographic Thompson Indians.

Berries

Saskatoon (Service-berry) *Amelanchier alnifolia*
- the most important berry staple
- gathered in late June/early July
- most were preserved by drying

Soapberry (Soopolallie) *Shepherdia canadensis*
- next in importance
- used to make a berry juice attained by steaming or simmering

Blueberry (Huckleberry) *Vaccinium membranaceum*
- very sweet and tasty
- used as a sign of goodwill, departing guests would receive some as gifts
- dried blueberries were boiled or steamed before being eaten

Chokecherry *Prunus sp.*
- used as a stimulant or for loss of diet

Raspberry *Rubus sp.*
- dried or made into pulp cakes

Thimble-berry *Rubus sp.*

Blackberry *Rubus sp.*

Gooseberry *Ribes sp.*

Currant *Ribes cereum*

Strawberry *Fragaria californica*
- mashed, dried and stored in cakes

Bearberry (Kinnikinnick) *Arctostaphylas uva-ursi*
- sometimes boiled in soups

Roots

Yellow-lily *Erythronium grandiflorum*
- gathered and dried in the autumn
- a very important winter staple
- needed long digging sticks as roots were deep down

Bitter root *Lewisia redivia*
- an important winter food as it dried well
- often cooked with Saskatoons

Sunflower *Balsamorhiza sagittata*
- eaten raw, or often dried and stored for winter

Tiger lily *Lillium columbianum*
- dug in the fall
- sometimes cooked in underground pits with salmon roe

Spring beauty *Claytonia lanceolata*
- delicious and eaten right away
- could not be stored for winter use
- dug with small digging sticks as roots are near the surface

Chocolate lily *Fritillaria sp.*
- eaten right away as they could not be dried for storing
- had to be kept moist
- cooked in underground steam pits

APPENDIX D

This appendix lists a summary of mammal species and a minimum number of individual mammals from the faunal assemblage of the Van Male site. The faunal analysis was conducted by Birute Galdikas-Brindamour, and these data are part of an earlier publication (Galdikas-Brindamour 1971).

Species	Number of bones	Individuals
Odocoileus hemionus Blacktail deer	92	3
Alces alces American moose	1?	1?
Canis familiarus Domestic dog	3	1
Canis lupis Wolf	34	1
Vulpes fulva Red fox	4?	1
Mephitis mephitis Striped skunk	2	1
Erethizon dorsatum Porcupine	3	1
Lepus americanus Snowshoe hare	148	5
Castor canadensis American beaver	31	1
Microtus sp. Field vole	15	?

EXCAVATIONS AT THE CURR SITE

CATHERINE CARLSON

I. INTRODUCTION

During the summer of 1977 from May through July, archaeological excavations were conducted at the Curr site (EdRa 22), a prehistoric house pit village on the north shore of the South Thompson River near Kamloops, British Columbia. Very brief test excavations were also carried out during July at another house pit site (EeRa 4), approximately 3.2 km downstream from the Curr site. Archaeological excavations were conducted at these sites for a number of reasons. First, both are imminently threatened by the proposed straightening and widening of Shuswap Road which runs directly parallel to the sites, and which has in fact already partially destroyed some of the cultural depressions on the northern boundaries of the Curr site. Consequently the major objective of the project was salvage. Secondly, as the Curr site is in close proximity to the city of Kamloops, it logistically provided an excellent place to carry on the archaeological field school for Cariboo College, which was scheduled for six weeks in May and June. Collaboration between the College and the Office of the Provincial Archaeologist therefore ensured the salvage of the Curr site, and at the same time provided field personnel for the excavations, and a field school for Cariboo College. A third objective of the project was to instigate an experimental program in public education, as an 'archaeological resource conservation' measure. In the Kamloops area, destruction of sites through relic collecting activities is very severe, and some form of public education dealing with the conservation of archaeological sites was deemed beneficial. As stated by Lipe (1974: 216):

> More stringent legislation is not the answer; we have much more legislation than we use now. But if more of the public understood and respected archaeological values, greater self-restraint would be exerted . . .

Consequently a program providing a full-time field and lecture person to act as site-guide and conduct tours with various groups of local school children, was initiated. The program was extremely successful in terms of local response (Byers 1977).

Funding, in the form of a contract administered by Cariboo College, was allotted to the project by the B.C. Department of Highways through the Office of the Provincial Archaeologist. The government Youth Employment Program (YEP) also provided funding to hire a full-time field technician from the Kamloops Indian Band. Research was conducted under permit #77–4.

Research Goals

The primary requirement of the salvage project was recovery of threatened archaeological data, and identification and assessment of cultural resources due to be affected by the proposed road construction. A detailed descriptive report is the minimum obligation for salvage research. This must include description of all recovered cultural materials and determination of the age of the site. Finally, the site must be placed within a regional archaeological framework.

Despite the salvage nature of this archaeological project, and built-in constraints, e.g., shortness of time, research did not focus solely on culture history. Very little ethnographic information is recorded for functional specialization, and size variation of structures in a winter village site. Also, little is documented in terms of activity areas and community patterning in areas outside the house pits. For this reason, research focused on two specific problems:

(a) Determining the function of small, shallow saucer-shaped depressions at the site; and
(b) Detecting activity patterning outside house pits.

Most archaeological excavations in this area have concentrated on large deep 'house pit' depressions, to the exclusion of other areas and smaller depressions within winter village sites. Small saucer shaped depressions ranging in size from approximately 2.5 to 4.5 m in diameter, are often commonly thought to represent 'mat lodges', 'menstrual isolation huts', or 'sweat lodges', even though detailed investigations of these features and their archaeological remains have never been intensively undertaken. For these reasons, it was thought that new types of information could be gained about the archaeology of village sites within this area by digging in areas outside house pits, as well as in the small depressions of dubious function. Unfortunately, lack of time and funding permitted only brief salvage test excavations at EeRa 4, and all problem oriented studies were focused on the Curr site.

Research Area

Both EdRa 22 and EeRa 4, are on the north shore of the South Thompson River, approximately 18, and 15.5 km, respectively, east of the confluence of the North and South

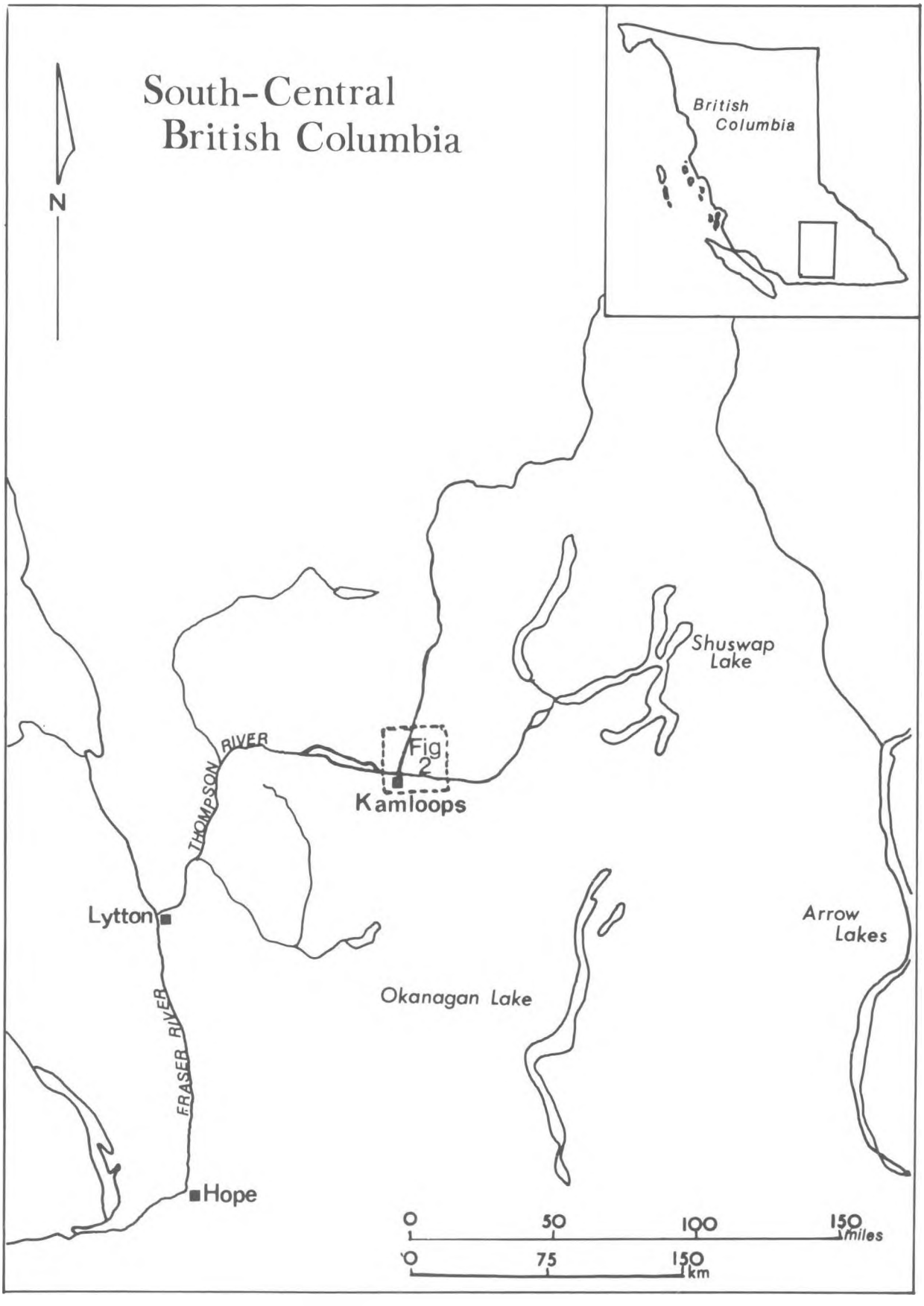


Fig. 1. South-Central British Columbia.

Thompson Rivers. EdRa 22 lies at 51° 39' 47" N, 120° 06' 20" W, at an elevation of 340 metres above sea level. EeRa 4 lies at 50° 40' 20" N, 120° 08' 20" W, at an elevation of 350 metres above sea level. Both sites are within the boundaries of the City of Kamloops.

The Curr site (EdRa 22) is a winter house pit village containing a total of 29 surficial cultural depressions ranging in size from small 1 m diameter 'cache pits', to 8 m diameter 'house pits', all circular in shape. The depressions are arranged in a linear pattern approximately 2 – 4 m from the edge of the river terrace, which rises about 6 m above the summer level of the river. The eastern extent of the site is bounded by a small intermittent creek. Little cultural material was observable on the surface of the site.

Site EeRa 4 is situated on the east bank of a creek draining Scheidam Lake, at its confluence with the South Thompson River. Surficial cultural depressions are arranged in a semi-circular pattern, approximately 10 m from the edge of the river bank. Nine circular cultural depressions are observable, ranging from 1.5 to 7 m in diameter. The house pits at this site are on the average approximately 50 cm deeper than those at the Curr site, and house pit lips are better defined. Some basalt chipping detritus is observable on the surface of this site, but not in great quantity.

Ethnographic Settlement Data

Wilson in the accompanying paper summarizes Shuswap ethnography. However, it does seem appropriate to describe summer lodges here.

During the warmer months of the year when the Shuswap were not occupying winter pit houses, summer lodges made of a framework of poles covered with mats or bark, were used. Circular lodges covered with mats were the most common type utilized in the South Thompson River area. The framework for the lodges consisted of four moderately heavy poles with forked ends, which were interlocked above the area that had been cleared, with their butt ends placed outside the cleared circle (Teit makes no mention that the "cleared area" was in any way excavated into any form of shallow pit). Smaller poles were then placed around the circle to fill in the gaps, and mats covered the framework (Teit 1909). Teit states that mat lodges of the Thompson Indians were similar in construction to those of the Shuswap, and gives a useful diagram of construction variations of the lodge frames (Fig. 5, Teit 1900: 197).

The description of specialized structures such as the sweat lodge is not well documented. According to Teit (1900), the lodges, usually found close to water, were

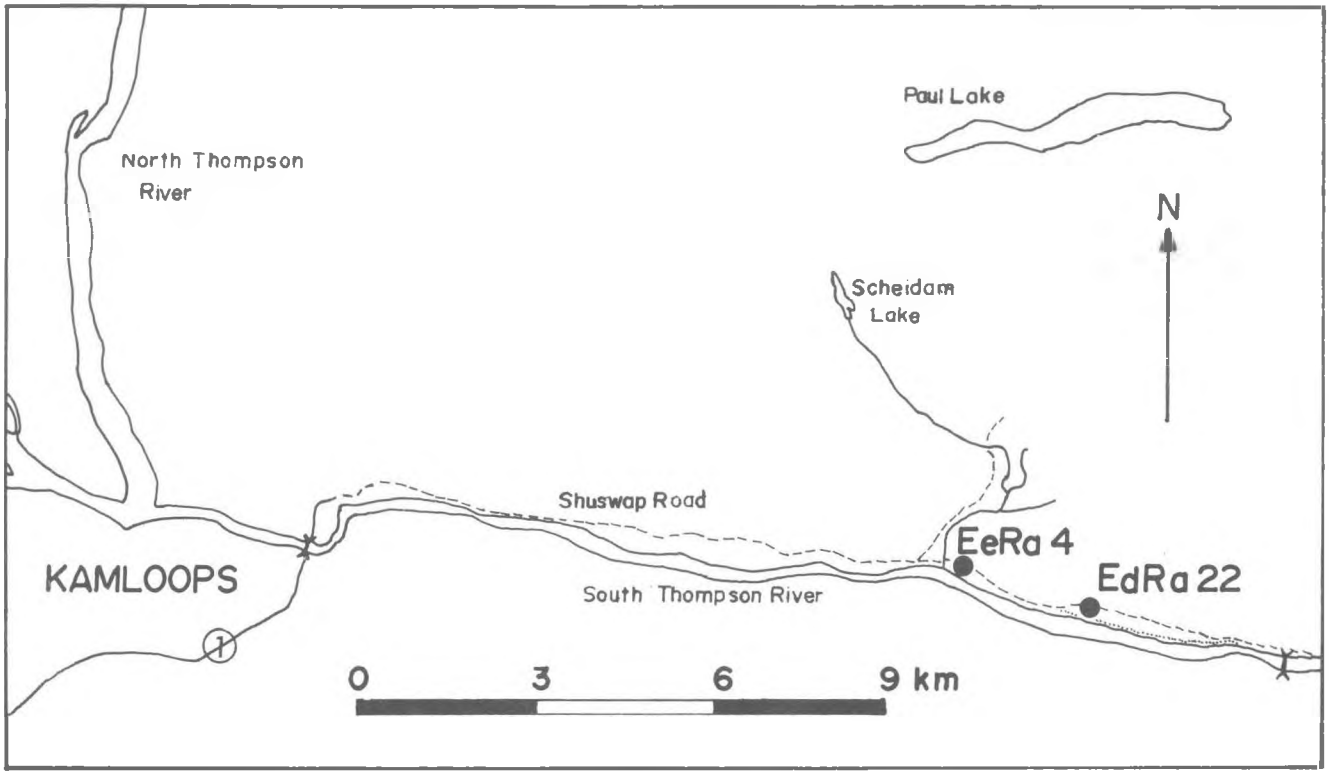


Fig. 2. Investigaged Sites (1977) Kamloops locality.

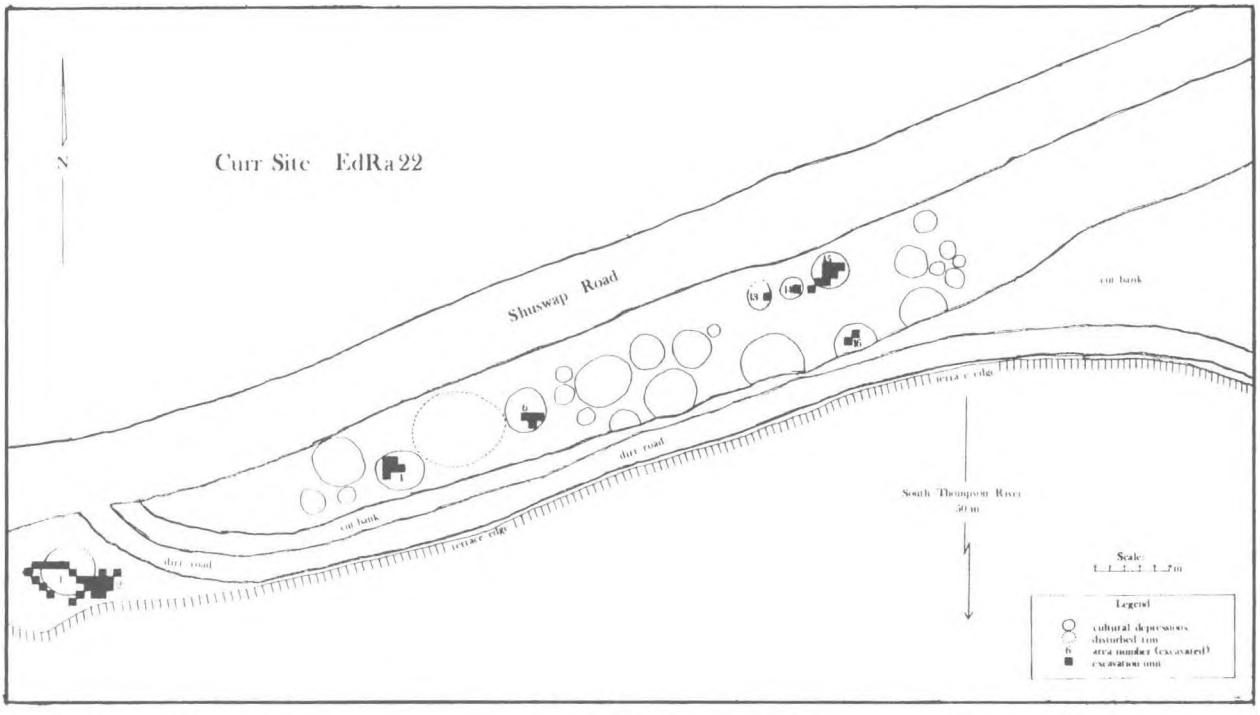


Fig. 3. Curr Site EdRa 22.

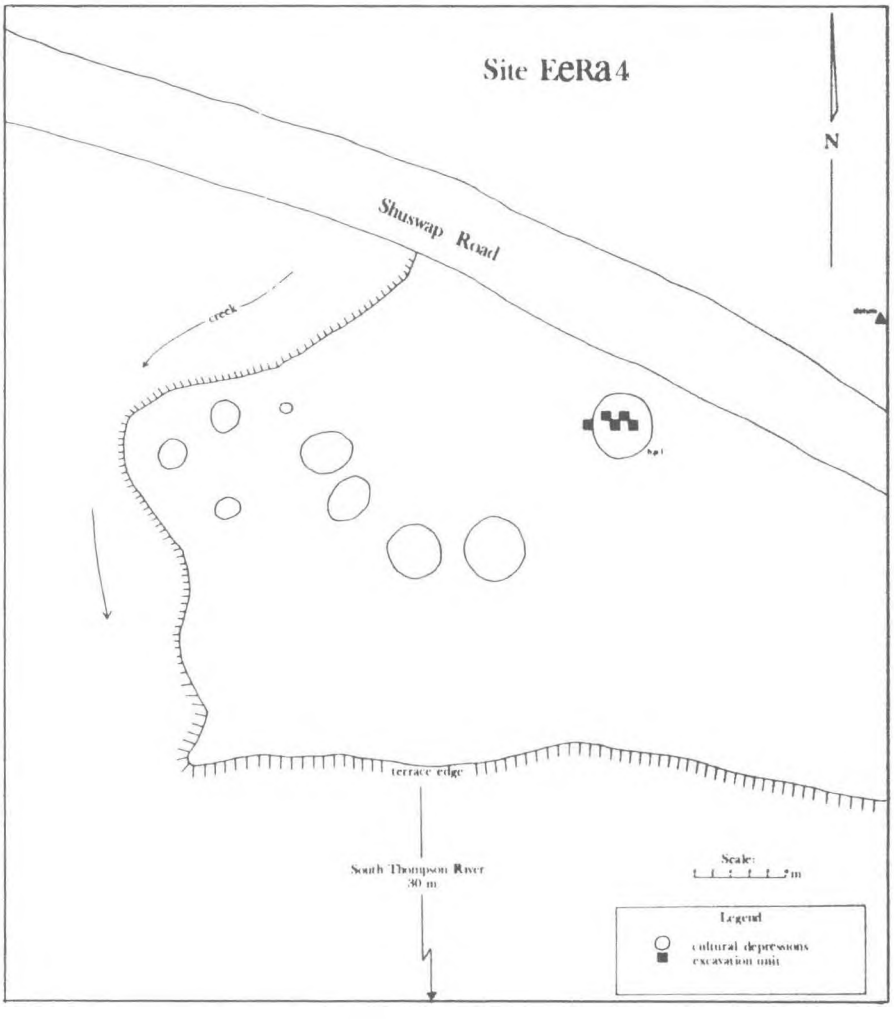


Fig. 4. Site EeRa 4.

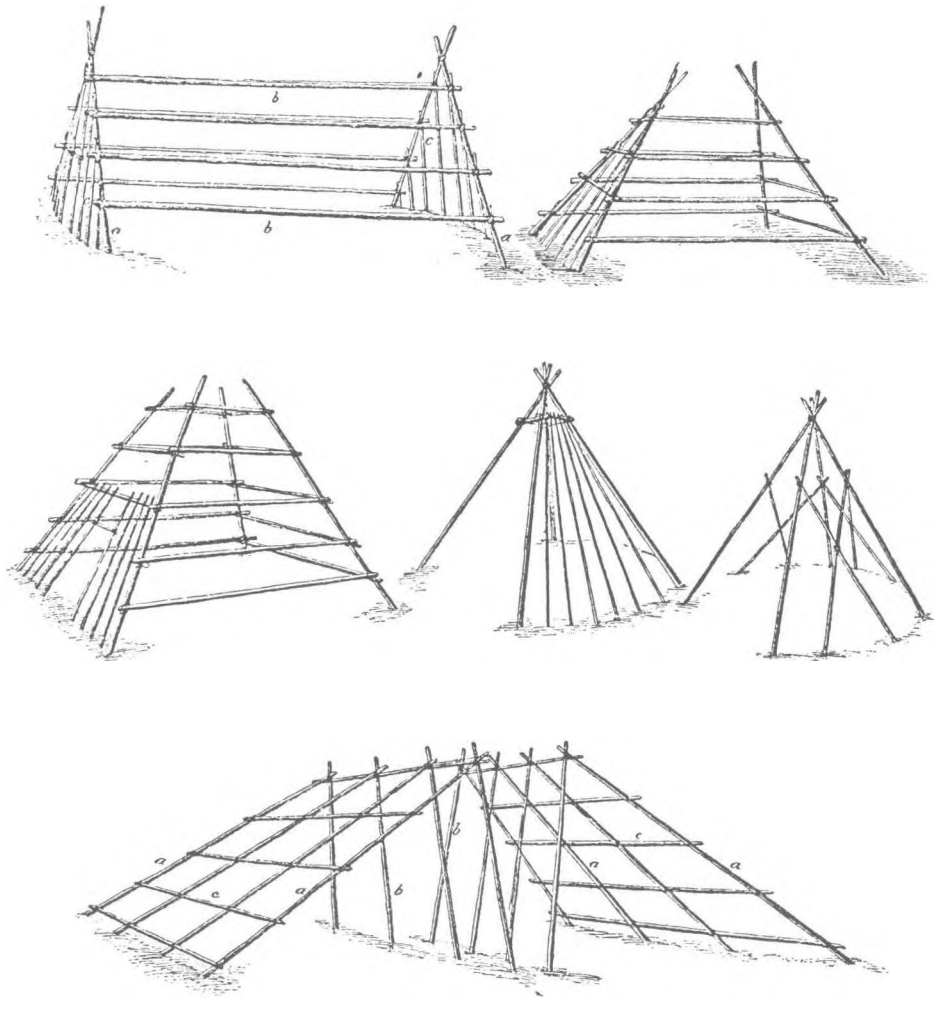


Fig. 5. Ethnographic Summer Lodge Frameworks (Teit 1900).

constructed of a number of willow wands stuck in the ground in a circle and bent over and tied at the top. Other wands were interwoven between these. The structure was then covered with dry pine needles and a thick layer of earth. A hole approximately 30 cm square was dug to one side of the entrance to accommodate the hot stones (Teit 1900: 198).

II. ANALYSIS

The purpose of this section is to discuss the extent and methods of excavation, sampling and the factors influencing the selection of areas to excavate, and the typology and description of the archaeological materials recovered.

Data Requirements and Sampling Methods

The main objectives of the research, as stated previously, were to investigate areas outside house pits, and inside small 3 – 4.5 m diameter shallow depressions. Due to the limited amount of time (six weeks), it was decided that intensive excavations in a contiguous area outside one house pit would be of more value in determining activity patterning than a number of scattered test units over a large number of outside areas within the site. Consequently, the house pit exhibiting the least amount of disturbance around its perimeters and its surrounding area (H.P.1), was chosen for concentrated sampling. Within the time allowed, it was felt that a minimum of two small depressions could also be completely excavated for evidence of construction and structural function. Again, depressions exhibiting minimum surficial disturbance were chosen for excavation. Later, time allowed test excavation of four other small depressions at the site. In choosing these areas for excavation, it must be remembered that excavation within one or two locales, does not necessarily give representative information on total intra-site variation. Despite this limitation, data found in such areas may be useful for future inferences concerning the function of similar areas at this site.

Excavation areas were judgmentally selected. Considering the site disturbance by relic hunters and road activity, areas suitable for excavation were limited. Because of this and the fact that the original population, or site, boundaries could not be delimited, it was felt that judgmental sampling relying largely on the criteria of practicability and stated research goals, was the most appropriate sampling procedure to be employed.

Excavation Methods

A 1 x 1 m grid oriented to magnetic north was surveyed over the site by use of a transit. Wooden stakes were placed at 1 m intervals on the grid on those areas on the site that were to be excavated. The arbitrary horizontal datum at the Curr site was placed to the southwest of the site, although a permanent iron stake was placed in the ground 6 m east of house pit 1, at grid coordinate N100/E121, to mark the grid system for possible future reference. Datum was marked at EeRa 4 by means of a small iron spike driven into the base (south side) of the first hydro electric power pole northwest of the most easterly house pit (H.P.1).

Excavations were carried out in arbitrary 10 cm levels throughout each 1 x 1 m excavation unit. Shovel-shaving techniques were used when excavating through roof fill and areas of little cultural material. Trowels were used on occupation floor areas, on features, and in areas of heavy cultural accumulations. All artifacts found in situ were given a vertical provenience measured below surface, and a horizontal provenience measured from the arbitrary datum. All portable cultural materials including faunal remains were placed in appropriate level bags, and features were drawn and photographed. All excavated deposits were screened through ¼" mesh.

Each excavated cultural depression or locus within the site was designated by a number, and consequently all recovered materials from each area were recorded and catalogued under their respective area numbers. The specific areas excavated within the site were numbered as: area 1 (or H.P.1), 2 (or locus 2), 4, 6, 13, 14, 15, and 16. Descriptions of each of these areas will be given below.

Stratigraphy was recorded at all four walls of each excavation unit by scaled profile drawings. Soil samples were taken from each stratigraphic layer within each excavation unit. All stratigraphy was also recorded on black and white, and color film.

A total of six excavation units were excavated within house pit 1 in order that the stratigraphy and artifacts from the surrounding area could be correlated with the house pit. Nineteen excavation units were dug in the outside area 2; six in area 4; four in area 6; one in area 13; one in area 14; eight in area 15; and two in area 16.

At site EeRa 4, similar excavation techniques were employed. Lack of time and field personnel permitted the excavation of only five 1 x 1 m test units within the house pit nearest the road, (designated H.P.1).

The schedule of field work included six weeks of excavation from the middle of May to the end of June at the Curr site, with the members of the field school, and three research assistants. Three weeks in July were spent in

mapping and test excavation at EeRa 4 by myself and two assistants. The last week in July and all of August were spent in lab work and analysis.

DESCRIPTION OF AREAS OF EXCAVATION:

EdRa 22

The following is a description of the excavation, artifacts, stratigraphy and features of the eight areas of excavation at EdRa 22.

AREA 1 (HOUSE PIT 1)

House Pit 1 is the most westerly cultural depression on the site. It measures 6.5 m in diameter, and is approximately 70 cm in depth at the centre. It is somewhat disassociated from the other cultural depressions as the nearest one to it is 29 m to the east. However the road which lies directly east of House Pit 1, may have destroyed intervening depressions (Fig. 3).

Excavation

Six 1 x 1 m squares were excavated in 10 cm arbitrary levels, to a depth between 60 and 70 cm below surface. Trenching and alternate square excavation techniques were employed.

Stratigraphy and Features

Strata within the house pit include two main cultural zones: (1) roof-fill extending to approximately 40–45 cm below surface, and (2) the floor, lying directly under the roof-fill and extending to approximately 60 cm below surface. The two cultural zones are bracketed by a 10 cm humus-turf zone at the surface, and sterile non-cultural sub-soil underneath (Fig. 6; Fig. 7).

Table 1. Features Associated with Roof Fill in H.P. 1

Feature No.	Type	Excavation Unit	Dimensions
1–1	fire-cracked rock, burnt earth and charcoal	N100–101 E112–113	0.18x0.17 m 0.05 m deep
Description: This feature was uncovered within the roof fill 19 cm below surface. It is possible that it represents redeposited hearth material that was thrown out onto the roof when the house was in use.			
1–4	3 burnt wood beams	N98–99 E114–115	4.5x8.0 cm 3.0x8.0 cm 2.0x4.0 cm
Description: This feature was 3 cm below surface, and it is doubtful that it is associated with the house pit structure. The wood appears to be too recent to represent a house pit beam, and may be historic fencing.			

(1) Roof Fill – This is represented by a fairly compact dark yellowish brown (Munsell color 10YR 4/2), silty loam sediment. Pieces of charcoal, debitage, faunal remains, and artifacts were incorporated in the fill.

(2) Floor Zone – The floor zone in the house pit is not a well defined layer as it is the same colour as underlying sterile subsoil. The distinctions between the floor and sterile soil is made on the basis of compaction and cultural content. The floor soil is fairly compact, although not as compact as the underlying sterile soil. It is dark yellowish olive grey (5Y 5/1), and has the texture of silty clay. The vertical extent of the floor zone is between approximately 45–60 cm below surface, although some artifacts were found at 65 cm below surface. Artifacts, debitage, and faunal remains were found in this zone.

Table 2. Features associated with floor zone in H.P. 1

Feature No.	Type	Excavation Unit	Dimensions
1–3	pit	N101–102 E111–112	35.0x40.0 cm 20.0 cm deep
Description: This circular pit appeared in the north-east corner of the unit at 60 cm below surface, and extended to 80 cm below surface. The entire pit was not excavated as it extended into the wall of the unit. The pit contained a large amount of carbon, and very few pieces of fire cracked rock, burned bone and debitage. A sample for C-14 analysis was taken from the pit. Possible function may be a cooking pit. This feature is almost identical in form to Feature 4-4 in Area 4.			
1–7	post hole	N99–100 E114–115	12.0x12.0 cm 15 cm deep
Description: This post hole appeared at 53 cm below surface and extended to 68 cm. It is located 49 cm west of the house pit floor/wall juncture, and angles slightly to the southeast. Its small diameter does not suggest any type of main support beam, but it may have functioned as a small support post going to the centre of the house pit.			

AREA 2

Area 2 immediately surrounds House Pit 1 and is classified as an outside activity area. The entire area is very flat, containing only one small shallow surficial depression about 1 m east of the house pit. The boundaries of this area are necessarily nebulous, the southern boundary being defined only by the terrace edge.

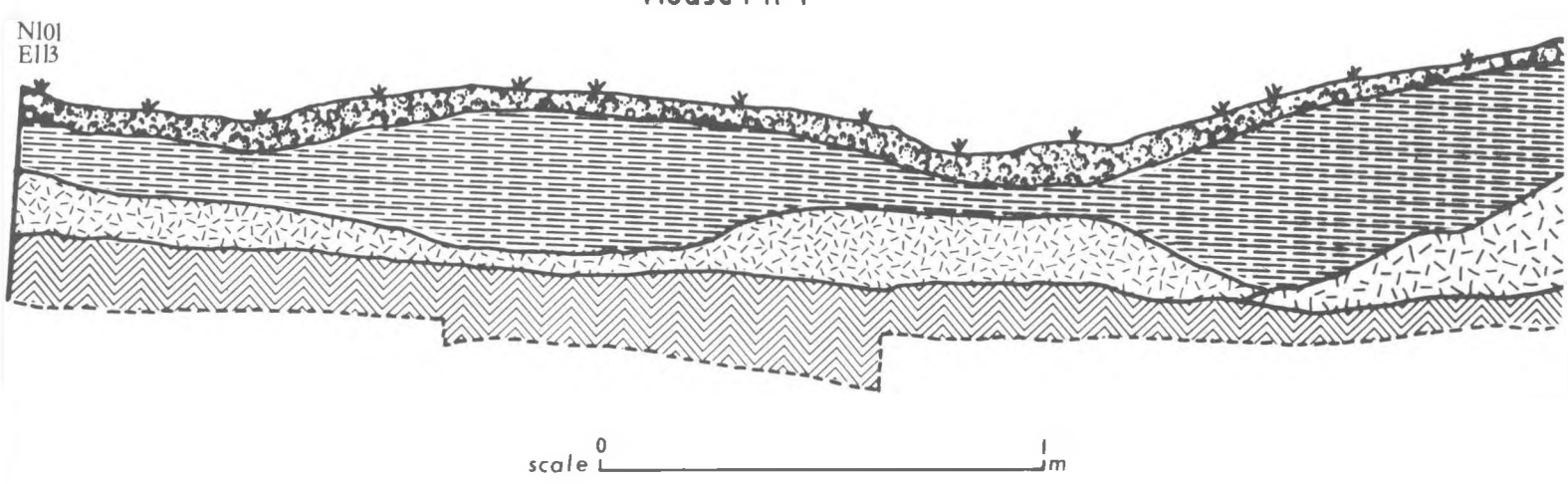


Fig. 6. Stratigraphic Profile of H.P. 1 and Area 2 West (EdRa 22): N101: E106–113.

Excavation

Nineteen 1 x 1 m excavation units were excavated west, east, and south of the house pit. The area north of the house pit was too disturbed by the road to warrant excavation.

Five units were excavated to the west, three to the south and 11 to the east and southeast (Fig. 3).

Stratigraphy and Features

West and South Area:

Within this area, cultural deposits extend only to 30 cm below surface. Major stratigraphic zones delimited are:

(1) Turf zone – Unconsolidated silty loam with a high humus content. Dark yellowish brown (10YR 4/2) in colour, and approximately 10 cm in depth. This layer contained approximately 20% of the recovered artifacts.

(2) Major Cultural Zone – This extends under the turf to about 30 cm below surface. The sediment is fairly consolidated dark yellowish brown in colour (10YR 3/2), and a silty loam in texture. All features were recovered in this zone, and approximately 80% of the artifacts.

(3) Sterile Zone – Below 30 cm from the surface, no cultural material was recovered. This sediment is light olive grey in colour (5Y 5/2), and silty clay in texture. This would have been the original sediment that the house pit was excavated into (Fig. 6).

Stratigraphy and Features – East Area:

Stratigraphy within this area is essentially the same as that of the west and south area, except that two dark 2 cm

Table 3. Features associated with Area 2 – West

Feature No.	Type	Excavation Unit	Dimensions
2–1	hearth	N99–100 E107–108	15.0x53.0 cm 10 cm deep

Description: The top of this hearth lies 15 cm below surface, and extends to 25 cm below surface. The entire hearth was not excavated as it extended into the south wall of the unit. It contained a large number of fire cracked rocks and chacoal, and appeared to be roughly circular in shape.

2–5	hearth	N100–101 E106–107	54.0x34.0 cm 5.0 cm deep

Description: The top lies at 15 cm below surface, and extends to approximately 20 cm below surface. The entire hearth was not excavated as it extended into the northwest corner of the unit, but it appeared to be circular in shape. It contains a large concentration of fire cracked rock and charcoal.

2–7	post hole	N100–102 E106–107	13.0x13.0 cm 18.0 cm deep

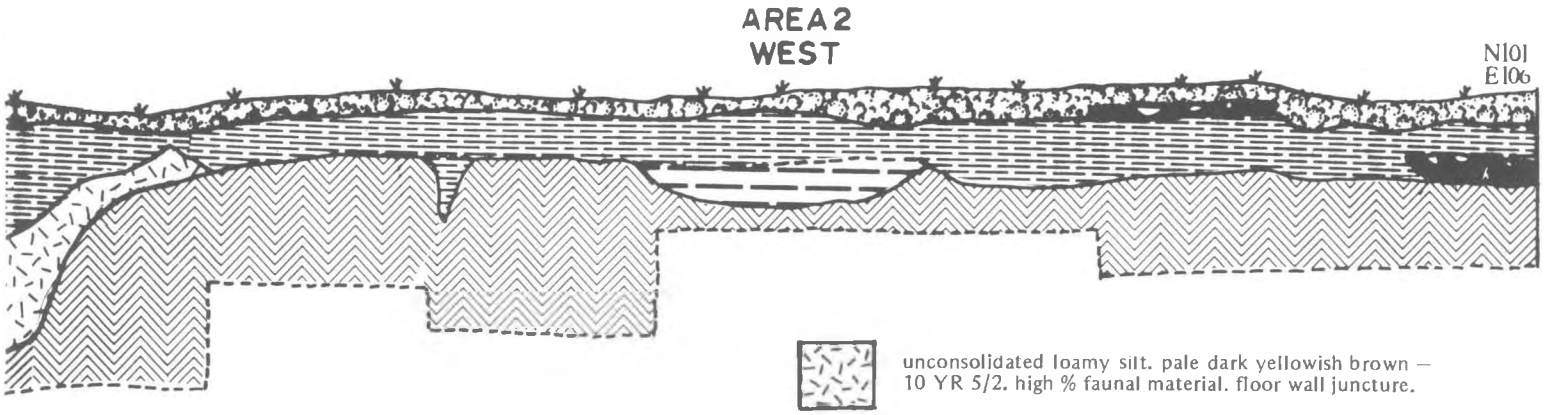
Description: This circular post hole extends from 15 to 28 cm below surface. It is directly on the house pit rim.

2–15	post hole	N101–102 E108–109	8.0x8.0 cm 18.0 cm deep

Description: This circular post hole extends from 12 to 29 cm below surface. It is directly on the house pit rim.

2–18	artifact cache	N101–102 E107–108	N101.10–101.35 E107.70–107.87 24.0–27.0 cm below surface

Description: A group of 21 artifacts was found piled together at the edge of the house pit rim. A small piece of birch bark was found directly underneath these artifacts and may be the remains of a bark container. The formed artifacts include three gravers, one concave-sided biface, one endscraper, one continuous scraper, and two backed knives. Unformed artifacts include nine bifacially retouched flakes, and four unifacially retouched flakes. It is possible that this group of artifacts may represent a tool kit, probably used in hide preparation activities (Fig. 25, Fig. 26).



turf layer. unconsolidated loamy silt. dark yellowish brown – 10YR 4/2.

unconsolidated loamy silt. roof fill zone. dark yellowish brown – 10YR 4/2.

consolidated silty clay. dark light olive grey – 5Y 5/1. probable floor zone.

unconsolidated loamy silt. pale dark yellowish brown – 10 YR 5/2. high % faunal material. floor wall juncture.

f.c. rock and charcoal.

lense of silty clay with charcoal staining. dark moderate yellowish brown – 10YR 6/4

consolidated silty clay. yellowish light olive grey – 5Y 6/2. underlying basal soil.

thick strata are present in the middle of the major cultural zone. These are thought to represent buried 'A' horizons separating two seasonal occupations. These two strata have been truncated in some spots, and particularly noticeable truncation occurs with the beginning of pit feature #2–2. Why these strata were not visible in the west and south areas is difficult to determine. Perhaps humus accumulation was more rapid on the east side of the house pit due to greater use by the inhabitants (Fig. 7).

Table 4. Features associated with Area 2 – East

Feature No.	Type	Excavation Unit	Dimensions
2–2	pit	N97–101 E115–118	N97.82–100.03 E115.25–117.40 45.0–112.0 cm below surface

Description: Oval in shape, 221 cm long axis, and 215 cm short axis. It extended from 45–112 cm below surface, although it was difficult to visualize at first and conceivably could have started higher up. Small steps or benches were discovered around the inside wall of the pit at approximately 70 and 90 cm below surface, 12 cm and 8 cm in width, respectively. Stratigraphic indications suggest that this feature was excavated after the construction of the house pit as it partially truncated the house pit wall. A large amount of bone, debitage, and artifacts were found in this pit. Several scrapers, projectile points (including one obsidian point), bifaces, etc. were also found. Presumed function may have been a cellar or cache. No surficial indications of this feature were evident (Fig. 8).

2–3	pit	N99–100 E117–118	N99.70–100.00 E117.70–118.00 50.0–90.0 cm below surface

Description: This feature shows up surficially as a small depression approximately 2 m east of the house pit. Only one corner of the pit was excavated, but it appeared circular in shape. The pit contained a fairly large amount of charcoal.

2–4	post hole	N99–100 E117–118	N99.55 E117.78 30.0–44.0 cm below surface

Description: This post hole is 14 cm in diameter, and 14 cm deep, although the feature was not identified until excavation had reached the level of the yellow sterile basal sediment and so may have started higher than 30 cm below surface. The post hole is circular in shape with a small projection off to the north side indicating that a stake may have been driven in beside the post. The feature fill consisted of a moderate yellowish brown (10 YR 5/4) silty clay. It is associated with two pit features (#2–2, #2–3), and it may have served as a support post for a superstructure over one of these pits.

2–10	pit or post hole	N97–98 E113–114	south wall profile E113.42–113.72 18.0–32.0 cm below surface

Description: This feature is on the edge of House Pit 1, and may indicate a large roof support post for the house pit. It is oriented at a 30° slant towards the west.

2–11	post hole	N97–98 E113–114	west wall profile N97.10–97.20 36.0–54.5 cm below surface

Description: Small post-hole near rim of House Pit 1.

AREA 4

Area 4 is a small cultural depression near the centre of the site. It measures approximately 5 m in diameter, and 40 cm in depth at the centre.

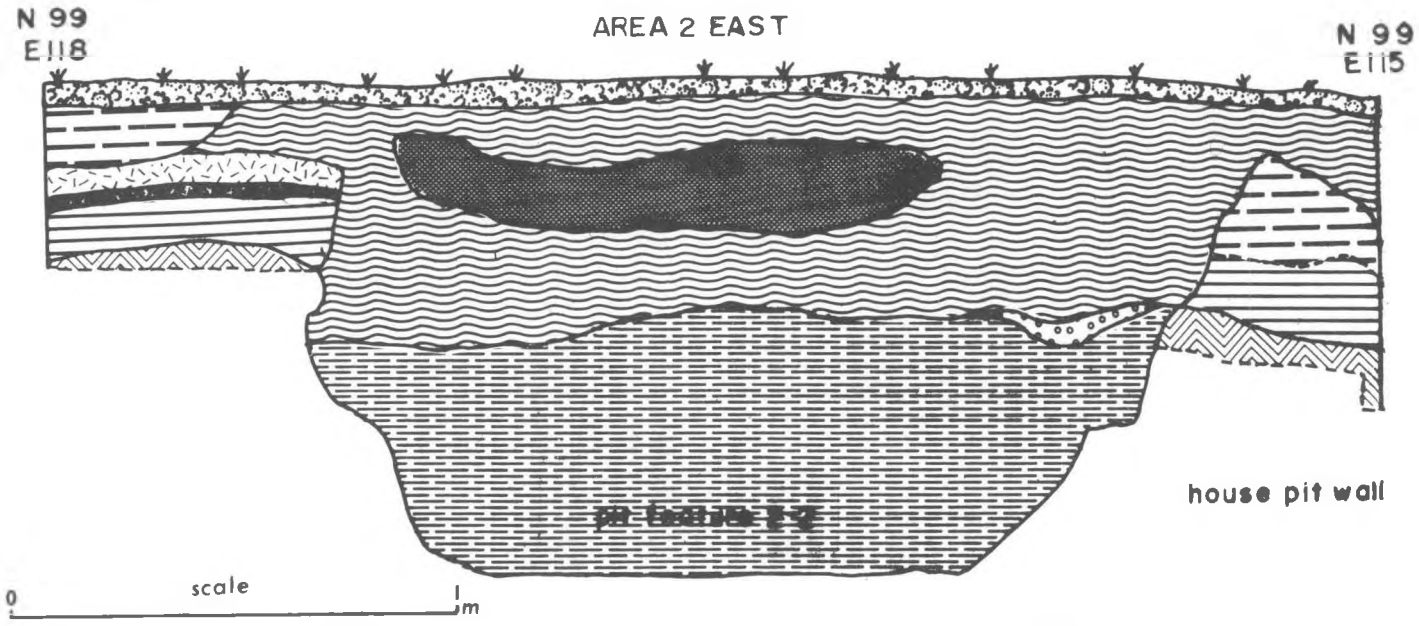


Fig. 7. Stratigraphic Profile of Area 2 East and H.P.1 (EdRa 22): N99: E113–118

turf layer. high humus content greyish brown – 5YR 3/2

silty loam. artifacts, debitage, fauna greyish brown – 5YR 3/2

lense of charcoal staining and charcoal flecks. dusky brown – 5YR 2/2

silty clay. artifacts, debitage, fauna dark yellowish brown – 10YR 4/2

silty clay. artifacts and debitage. orange yellowish brown – 10YR 6/4

probable buried 'A' horizon. dusky yellowish brown – 10YR 2/2

silty clay. artifacts and debitage. moderate brown – 5YR 4/4

clay silt lense. orange in color – 10R 4/6

compact silty clay. charcoal, artifacts, debitage, shell, fauna. 10YR 4/2.

silty clay. artifacts, debitage, fauna. light olive grey 5Y 6/1.

compact silty clay. probable floor zone. dark yellowish olive – 5Y 5/2.

well consolidated silty clay. underlying basal soil. yellowish light olive grey – 5Y 6/2.

Excavation

Six 1 x 1 m squares were excavated in 10 cm arbitrary levels to 60 – 70 cm below surface.

Stratigraphy and Features

Stratigraphy within Area 4 consists of three main cultural zones bracketed by overlying turf and underlying sterile basal sediments. The three cultural zones consist of:

(1) Fire Cracked Rock and Charcoal Zone – This deposit ranges from approximately 8 – 30 cm below surface, and contains a very heavy concentration of fire cracked rock and charcoal, interspersed with faunal remains, debitage, and some artifacts including a bone awl and a side-notched projectile point. It is possible that this layer indicates that Area 4 was used most recently as some sort of oven or fire-pit.

(2) Roof-Fill Zone – This layer is barely visible, as it is only approximately 15 cm in depth, and is the same colour as the overlying deposit, but contains no fire cracked rock and charcoal. It ranges from approximately 30 – 45 cm below surface.

Table 5. Features associated with Area 4

Feature No.	Type	Excavation Unit	Dimensions
4–1	possible hearth and 2 associated post holes	N114–115 E155–156	50 cm below surface
Description: A circular hearth consisting of fire cracked rock and charcoal, measuring approximately 41.0 cm diameter, and 3.0 cm deep. Two post holes were associated with this hearth, one 4 cm to the northeast of the hearth, and one 25 cm west. The north post hole is 15 cm in diameter, and 29 cm deep with a pointed end. The west post hole is 14 cm in diameter, and 15 cm deep.			
4–2	post hole	N115–116 E154–155	N115.29–115.48 E154.81–154.97 45.0–73.0 cm below surface
Description: One roughly oval shaped post hole, approximately 17 cm in diameter, associated with the floor zone.			
4–4	pit	N114.85–115.30 E155.84–156.18	55.0–75.0 cm below surface
Description: Circular pit measuring approximately 45.0 cm diameter, and 20.0 cm deep. It is associated with the floor zone and may have served as a cooking pit. It is very similar to the pit excavated in House Pit 1 (feature 1–3).			

(3) Floor Zone – The floor zone is indicated by an olive grey (5Y 4/1) silty clay layer containing 4 post holes, and possible hearth and pit features. There is also an increase in debitage from the above zones. The approximate depth of the floor zone is 45 – 55 cm below surface, although this is difficult to definitely determine as it is essentially the same colour and texture as underlying non-cultural sediments (Fig. 9).

AREA 6

Area 6 is a small cultural depression near the centre of the site. It measures approximately 5.50 m in diameter and is approximately 80.0 cm deep.

Table 6. Features associated with Area 6

Feature No.	Type	Excavation Unit	Dimensions
6–1	burnt beams	N123–124 E176–177	17.0–22.0 cm below surface
Description: This feature covered the entire unit at approximately 16.0 cm below surface. It consisted of charcoal flakes and chunks. The majority of these were randomly oriented, but one definite beam was uncovered. This piece was burnt on only one side. This feature probably represents the remains of a burnt and collapsed roof structure.			
6–2	post hole	N123–124 E174–175	N123.70–123.84 E174.73–174.86 50.0–60.0 cm below surface
Description: Post hole 14.0 cm in diameter associated with the floor zone.			

Excavation

Three 1 x 1 m square units were excavated in 10 cm arbitrary levels to 60 cm below surface. These were joined in a trench crossing east-west through the depression.

Stratigraphy and Features

Two major cultural zones occur in this area – a roof-

Fig. 8. Feature 2–2. Large Pit from Area 2.

fill layer and a floor layer. These are bracketed by turf and non-cultural basal sediments.

(1) Roof-Fill – This layer ranges 15 – 40 cm below surface and consists of an unconsolidated silty clay with some charcoal, debitage, and artifacts.

(2) Floor Layer – The floor zone is distinguishable from underlying sterile sediments by its compaction and large amount of debitage. It ranges approximately 40–45 cm below surface (Fig. 10).

AREA 13

Area 13 is a small cultural depression near the eastern end of the site. It is approximately 3 m in diameter, and very shallow. It is somewhat oval in shape, and the northern edge has been disturbed by road grading activities.

Excavation

One 1 x 1 m unit was excavated to a depth of 50.0 cm below surface.

Stratigraphy and Features

One homogeneous cultural zone of compact dark yellowish brown (10YR 4/2) silty clay is present. It contained only four pieces of debitage, and one small shell fragment. Its depth ranged to approximately 40.0 cm below surface (Fig. 11).

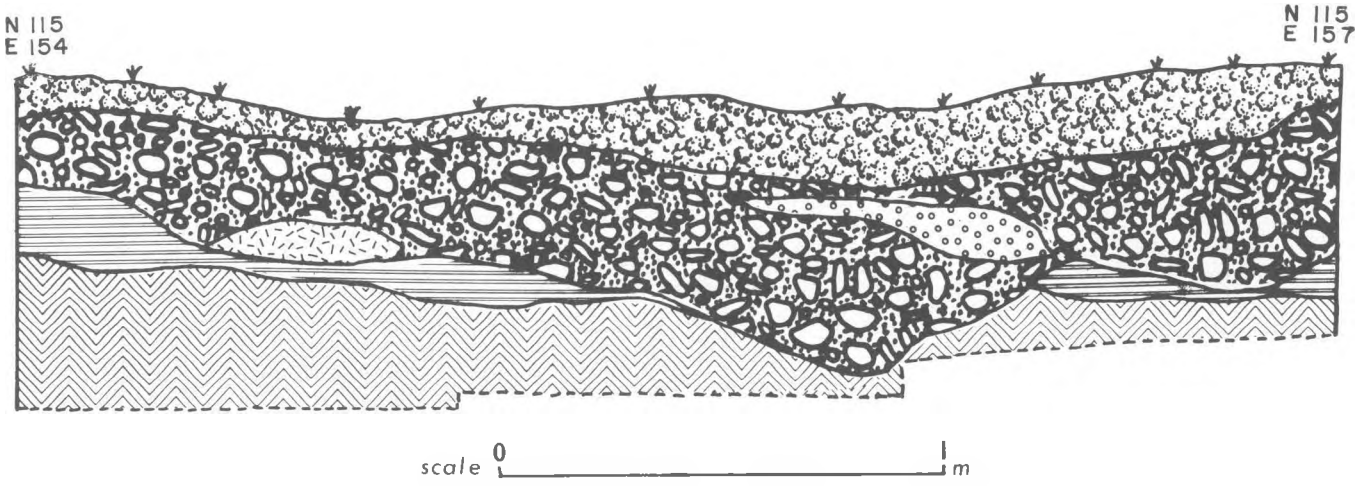
Table 7. Features associated with Area 13

Feature No.	Type	Excavation Unit	Dimensions
13–2	post hole	N140–141 E204–205	south wall profile E204.48–204.76 5.0–33.0 cm below surface

Description: Large post hole with tapering pointed end.

AREA 14

Area 14 is a small cultural depression measuring 2.5 m in diameter. It may be a small cache pit associated with Area 15.



turf layer. loosely consolidated. dark yellowish brown – 10YR 4/2.

fire cracked rock and charcoal zone. silty matrix. olive black – 5Y 2/1.

consolidated silty clay. probable floor zone. olive grey – 5Y 4/1.

highly consolidated silty clay. basal sediment. yellowish light olive grey – 5Y 6/2.

lense of burned soil. pale yellowish orange – 10YR 8/6.

ash lense. yellowish grey – 5Y 7/2.

Fig. 9. Stratigraphic Profile of Area 4 (EdRa 22): N115; E154–157.

Excavation

One 1 x 1 m unit was excavated in the centre of the depression to 60 cm below surface.

Stratigraphy and Features

One homogeneous cultural zone of a compact silty loam was present. It contained a total of one unifacially retouched flake, six pieces of debitage, two small pieces of birch bark, and a small amount of fire cracked rock. No features were present (Fig. 12).

AREA 15

Area 15 is a 5 m diameter circular depression located at the eastern end of the site. It is approximately 40 cm deep at the centre.

Excavation

Eight 1 x 1 m units were excavated in arbitrary 10 cm levels to 40 cm below surface.

Stratigraphy and Features

Two main cultural layers are present, a roof-fill deposit,

Table 8. Features associated with Area 15

Feature No.	Type	Excavation Unit	Dimensions
15–1	fire cracked rock and charcoal concentration	N144–145 E213–214	N144.00–144.15 E213.37–213.80 18.50–23.00 cm below surface
Description: This feature appears to be a dump of fire cracked rock and charcoal within the roof fill deposit.			
15–3	hearth	N143–144 E212–213	N143.47–144.15 E212.49–213.00 25–33 cm below surface
Description: Hearth feature roughly circular in shape, full of charcoal and fire cracked rock. Associated with the floor zone of Area 15.			
15–9	hearth	N144–145 E212–213	N144.82–145.00 E212.18–212.55 30–40 cm below surface
Description: Circular area of fire cracked rock and charcoal, thought to represent another hearth area associated with the floor zone.			
15–12	post hole	N143–144 E213–214	N143.73–144.03 E213.06–213.36 40–61 cm below surface
Description: Large 30 cm diameter circular post hole associated with the floor zone.			

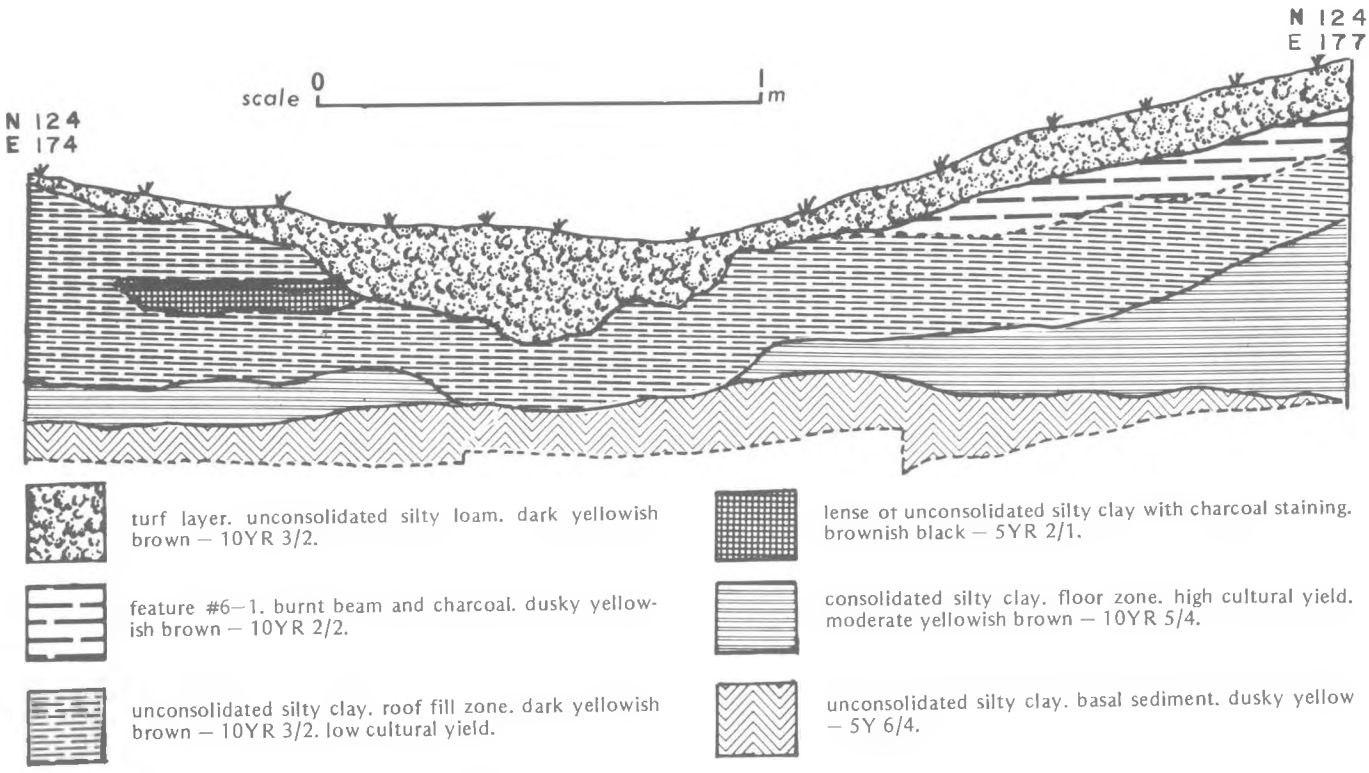
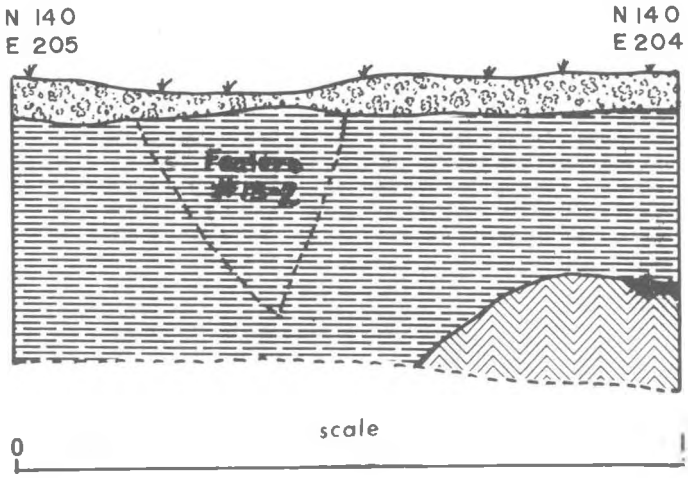


Fig. 10. Stratigraphic Profile of Area 6 (EdRa 22): E124; E174–177.



turf layer. unconsolidated silty loam. dark yellowish brown — 10YR 4/2.

consolidated silty clay. few debitage. dark yellowish brown — 10YR 4/2.

very compact silty clay. sterile. light olive brown — 5Y 5/6.

Fig. 11. Stratigraphic Profile of Area 13 (EdRa 22): N140; E204—205.

and a floor zone. The roof-fill extends to approximately 30.0 cm below surface, and consists of consolidated silty loam with fire cracked rock, charcoal, artifacts, debitage, faunal remains, and shell. The floor zone is approximately 30—40 cm below surface, and contains two hearths, and one large post hole. It is somewhat indistinguishable from the underlying basal sediment, but is defined by the degree of compaction, and artifacts and features (Fig. 13).

AREA 16

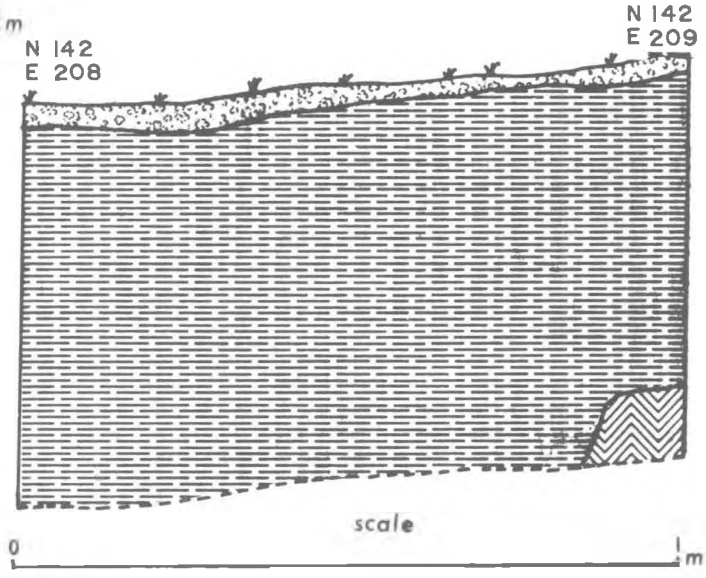
Area 16 is a 6 m diameter cultural depression at the eastern end of the site. It is almost identical to Area 15 in size and shape. The southern side of the depression has been cut by the road.

Excavation

Two 1 x 1 m units were excavated to 70 cm below surface.

Stratigraphy and Features

Two cultural zones are present: a dark yellowish brown (10YR 4/2) compact silty clay containing some fire cracked rock and debitage; and a compact silty clay, dusky yellow (5Y 6/4) in colour, containing some debitage, and three unifacially retouched flakes. These zones probably represent roof-fill and floor deposits (Fig. 14).



turf layer. unconsolidated silty loam. dark yellowish brown — 10YR 4/2.

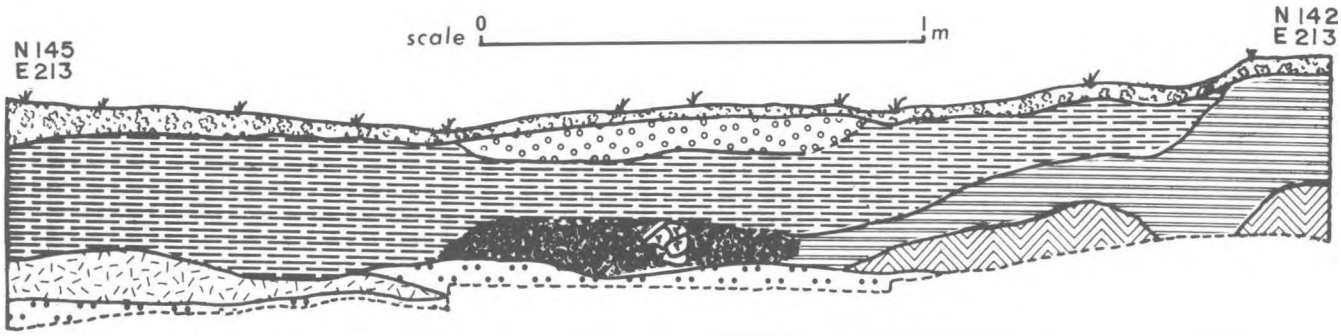
consolidated silty loam. few debitage. moderate yellowish brown — 10YR 5/4.

consolidated sandy silt. light olive brown — 5Y 5/6. sterile.

Fig. 12. Stratigraphic Profile of Area 14 (EdRa 22): N142; E208—209

EeRa 4

House pit 1 at EeRa possessed a well defined roof-fill deposit of silty loam with debitage, charcoal, artifacts, and faunal remains, extending approximately 50 cm below surface. Underlying this is a poorly defined floor zone of compact silty clay with a high percentage of artifacts, and some faunal remains. This extends to approximately 60 cm below surface, where the sediment, of essentially the same colour and texture, becomes sterile of cultural materials (Fig. 15).



turf layer. silty loam. dark yellowish brown — 10YR 3/2.

lense of silty loam, light olive grey — 5Y 6/1. no cultural material.

consolidated silty loam. roof fill zone. high cultural content. dark yellowish brown — 10YR 3/2.

hearth feature #15—3. fire cracked rock and charcoal.

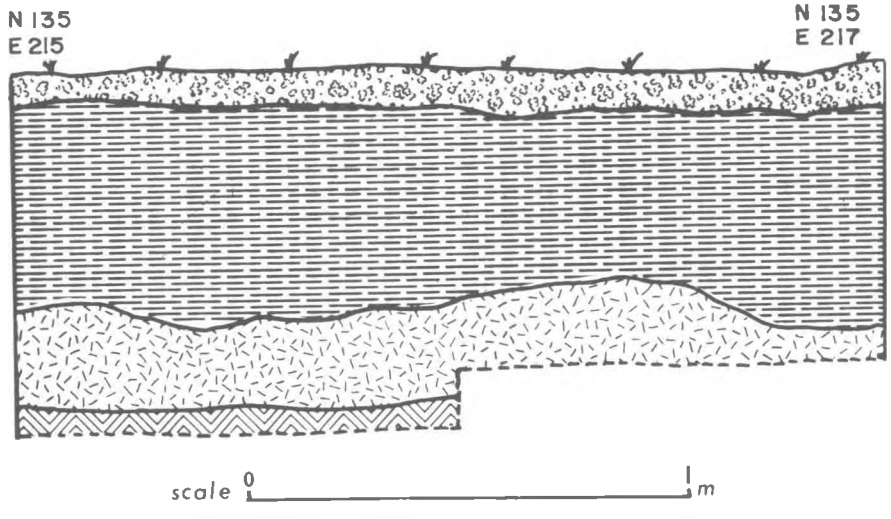
consolidated clay loam. low cultural content. dark yellowish brown — 10YR 4/2.

consolidated silty clay. basal sediment. light olive brown — 5Y 5/6.

loosely consolidated silty sand. very low cultural yield. dark yellowish orange — 10YR 6/6.

mixture of burnt soil 5YR 5/6, light brown, and dark yellowish brown — 10YR 4/2 (roof fill).

Fig. 13. Stratigraphic Profile of Area 15 (EdRa 22): N142—145; E213



turf layer. loosely consolidated silty loam. olive grey — 5Y 3/2.

consolidated silty clay with some fire cracked rock and debitage. dark yellowish brown — 10YR 4/2.

compact silty clay. debitage. probable floor zone. dusky yellow — 5Y 6/4.

unconsolidated sandy silt. sterile basal soil. dark yellowish orange — 10YR 6/6.

Fig. 14. Stratigraphic Profile of Area 16 (EdRa 22): N135; E215—217

Table 9. Features associated with house pit 1 (EeRa 4)

Feature No.	Type	Excavation Unit	Dimensions
1–1	burnt roof beams	S10–11 W30–31	15–20 cm below surface
Description: Four burnt beams and charcoal associated with the roof-fill.			
1–2	charcoal concentration	S10–11 W30–31	S10.60–10.85 W30.00–30.48 41–56 cm below surface
Description: Rectangular area of charcoal concentration associated with the house pit floor. C–14 sample taken.			
1–3	post hole	S10–11 W28–29	S10.28–10.40 W28.13–28.27 41–56 cm below surface
Description: Circular post hole, 13 cm diameter.			
1–4	post hole	S29–30 W11–12	S11.57–11.69 W29.78–29.92 60.0–68.5 cm below surface
1–5	post hole	S10–11 W28–29	S10.20–10.41 W28.87–29.00 62–105 cm below surface
Description: Post hole 21 cm diameter, tapering at the bottom. Associated with the house pit floor.			

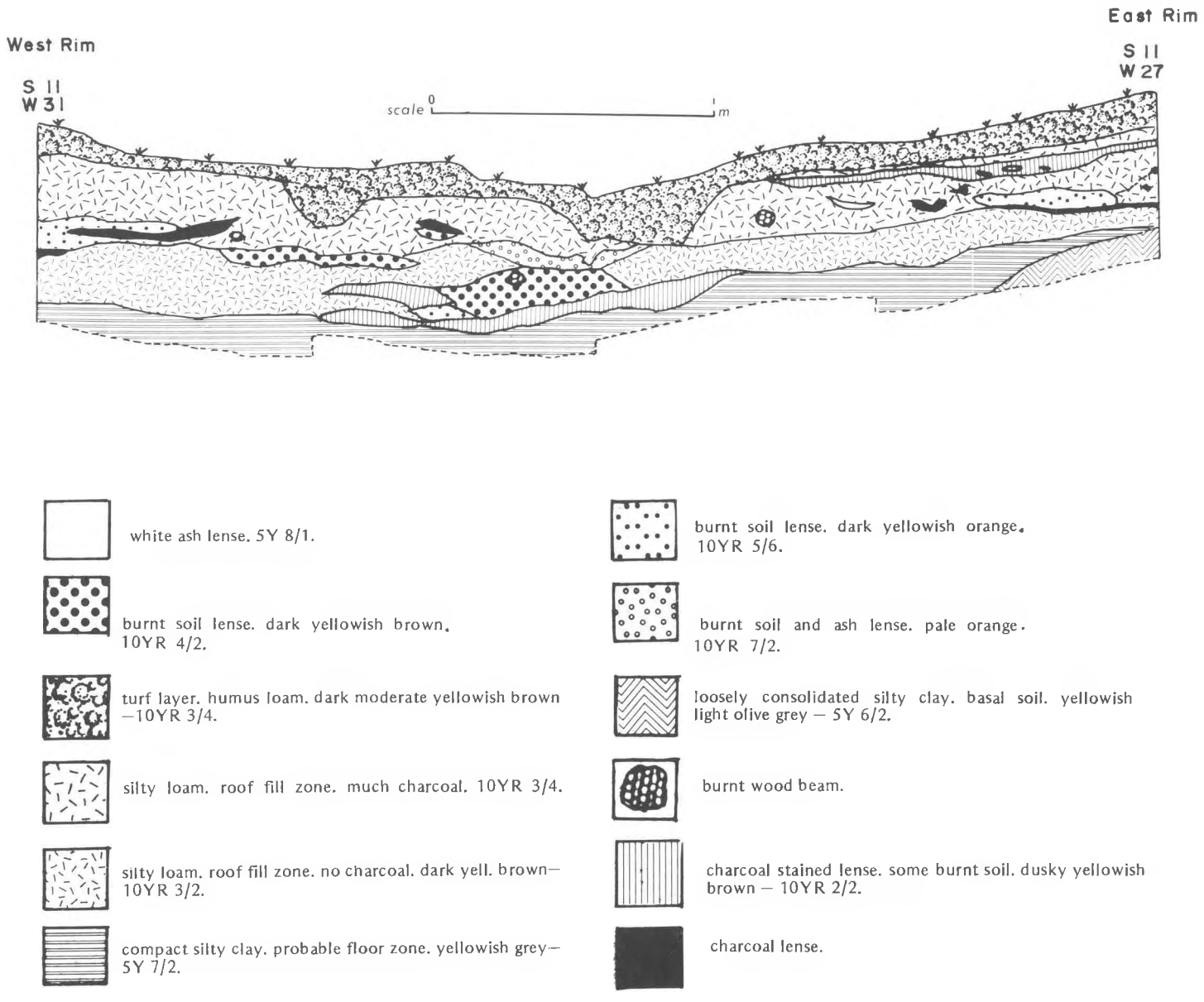


Fig. 15. Stratigraphic Profile of H.P.1 (EdRa 4): S11; W27–31

ARTIFACT DESCRIPTION AND TYPOLOGY (EdRa 22)

It is the purpose of this section to describe the recovered archaeological materials from the Curr site. The total sample numbers 591 prehistoric artifacts and 21 historic artifacts from the surface. Lithic debitage is not included under the total number of artifacts, and is dealt with only briefly in this report. The prehistoric artifacts are classified into three major categories on the basis of primary manufacturing technique, and type of raw material. These categories are: (1) the chipped stone industry, (2) the pecked and ground stone industry, and (3) the bone and antler industry. Standard deviations have been calculated for sake of consistency even though it is realized that they are of doubtful value in frequencies less than 4.

CHIPPED STONE INDUSTRY

This industry makes up the bulk of the assemblage, with a total of 574 chipped stone artifacts, representing 97.12% of the prehistoric assemblage. Table 10 gives the percentages of raw materials utilized for artifacts.

Table 10.Percentages of raw materials used for artifacts

Material	Percentage of Artifacts
vitreous basalt	83.93
non-vitreous basalt	8.39
quartz	3.39
chert	1.96
chalcedony	1.61
welded volcanic tuff	.36
green chrysocolla	.18
obsidian	.18

The single piece of obsidian recovered was a basally notched projectile point. On visual examination only, Dr. Erle Nelson (Simon Fraser University), identified its source as probably the Oregon Glass Butte area, although the possibility exists that it could be from the Mackenzie Pass source in British Columbia. Positive identification will have to await x-ray fluorescence (Nelson 1977: pers. comm.).

I. Bifacially Flaked Artifacts N = 144

These artifacts exhibit bifacial flaking along 1 or more edges. They are subdivided into formed and unformed bifaces on the basis of shape and extent of retouch.

A. Formed Bifaces N = 68

These artifacts represent an attempt by the manufacturer to achieve a preconceived form (Sanger 1971:71). A well defined outline with extensive bifacial retouch are the primary characteristics of these artifacts.

1. Points N = 15

Points are those objects exhibiting a hafting element and thin edges converging to a sharp tip (Loy and Powell 1977:59). Hafting elements include notching and stemming in this assemblage. Functional distinctions between dart, arrow, and spear points have not been attempted due to the small sample size. Wilson, (this volume) in doing metric analyses of the neck widths of points from sites within the Kamloops locality, has suggested a neck width of 10 mm as the most likely measurement dividing arrow and dart points. If this can be applied directly to the points from the Curr site, then it would appear that the assemblage contains 12 dart points and two arrow points.

The points have been subdivided for descriptive classification into three basic types based on the type of notching present: (1) corner notched, (2) basal notched, and (3) side notched.

a. Corner Notched N = 11

These points exhibit notching over parts of both the reconstructed blade and base (Loy and Powell 1977: 45). There are two basic varieties within this type which warrant further subdivision: (1) those with barbs, and (2) those with shoulders.

i. Barbed Corner Notched N = 7 **Fig. 16: g–l**

These corner notched points exhibit a slanting lateral projection at the base of the artifact instead of a shoulder.
Material: vitreous basalt (7)

Attribute	N	Range (cm)	Mean (cm)	S.D.(cm)
length	6	2.80–4.30	3.64	.57
width	4	1.35–2.50	2.04	.49
thickness	7	0.35–0.55	0.47	.06
neck width	6	0.75–1.35	0.92	.45
weight (g)	3	1.30–3.80	2.47	1.26

ii. Shoulder Corner Notched N = 4 **Fig. 16: b–c**

These corner notched points exhibit an upward and lateral expansion of the stem from the width of the base to the width of the widest part of the blade, forming a shoulder (Loy and Powell 1977:63–4).
Material: vitreous basalt (4)

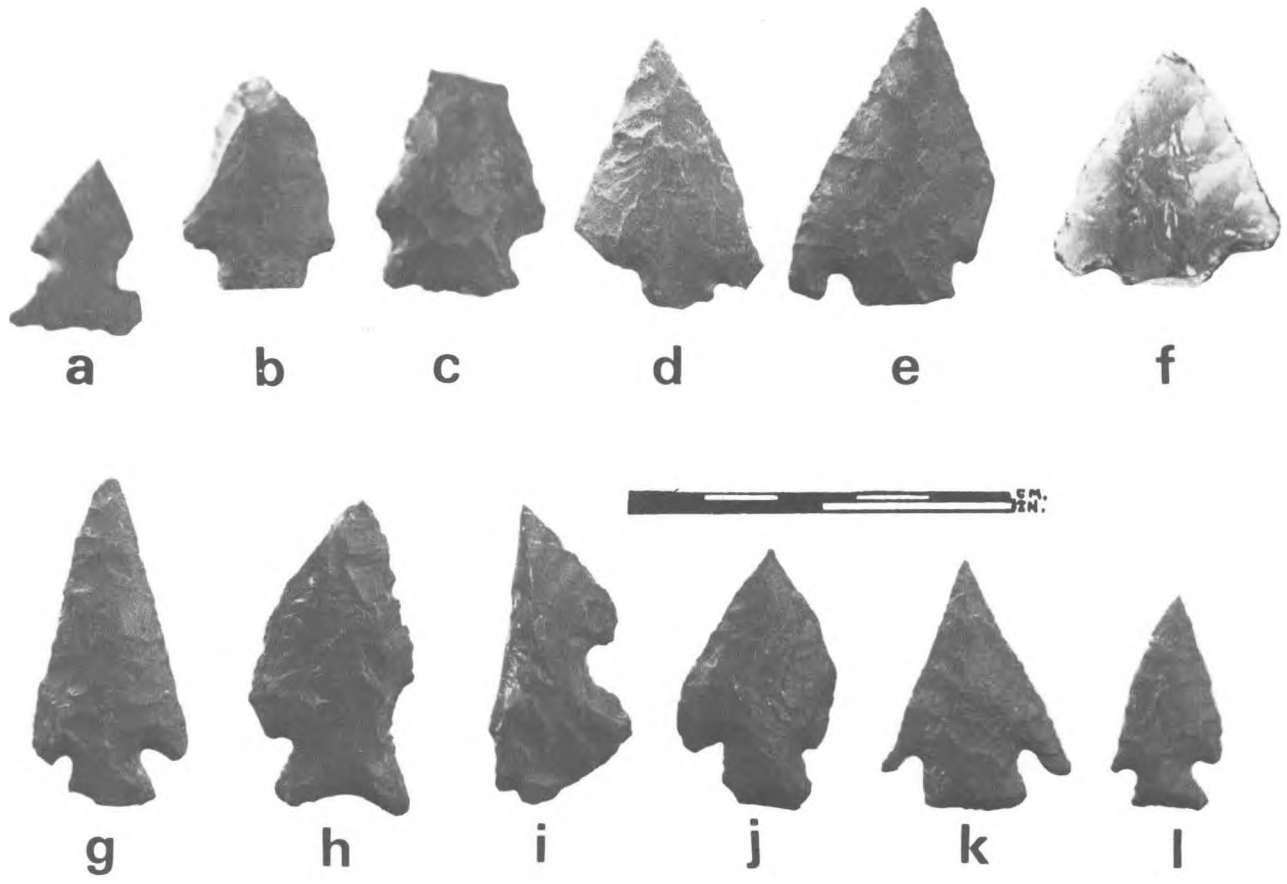


Fig. 16. Bifacially Chipped Stone Points. (EdRa 22). Side-notched Point (a); Barbed Corner-notched Points (g–l); Shouldered Corner-notched Points (b–c); Basal-notched Points (d–f).

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	3	2.80–6.30	4.80	1.80
width	4	1.75–2.20	1.93	0.20
thickness	4	0.50–0.80	0.68	0.15
neck width	4	1.00–1.55	1.26	0.23
weight (g)	3	3.00–6.90	5.37	2.08

b. Basal Notched N = 3 **Fig. 16: d–f**

On these specimens, the notch is produced from the base of the point.

Material: vitreous basalt (2) obsidian (1)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	3	3.10–3.95	3.52	0.43
width	1	2.90		
thickness	3	0.45–0.60	0.53	0.08
neck width	3	1.05–1.40	1.27	0.19
weight (g)	1	4.70		

c. Side notched N = 1 **Fig. 16: a**

On this point, notches are produced in the lateral blade edges.

Material: vitreous basalt (1)

Attribute	Measurement
length	2.25 cm
width	1.75 cm
thickness	0.30 cm
neck width	0.89 cm
weight	1.00 g

2. Ovate Bifaces N = 3 **Fig. 17: a–c**

Those artifacts exhibiting a roughly oval outline with pointed distal ends, excurvate blade edges, and convex to straight bases. No wear-polish was evident on any of these specimens, so inference concerning function is difficult. However they probably would have been used as some form of cutting tool or knife (Sanger 1970).

Material: vitreous basalt (3)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	0	–	–	–
width	3	2.63–3.00	2.81	0.19
thickness	3	0.60–0.80	0.72	0.10
weight (g)	3	7.80–14.90	10.97	3.61

3. Triangular Bifaces N = 2 **Fig. 17: d–e**

These bifaces are equilateral triangles in outline. One specimen possesses a square notch in one blade edge. Wear-polish is evident along the steeply retouched edge of the unnotched specimen, indicating that this artifact may have functioned as a scraping tool.
Material: vitreous basalt (2)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	2	3.25–3.75	3.50	0.35
width	2	3.00–3.20	3.10	0.14
thickness	2	0.42–1.00	0.71	0.41
weight (g)	2	4.90–11.00	7.95	4.31

4. Pentagonal Bifaces N = 1 **Fig. 17: g**

This five-sided biface has an incipient stem, with the distal blade edges converging to a sharp tip. Crude flaking on this artifact may indicate that it is unfinished. No wear polish is evident.
Material: vitreous basalt

Attribute	Measurement
length	3.45 cm
width	2.80 cm
thickness	0.85 cm
weight	5.30 g

5. Concave-Sided Biface N = 1 **Fig. 17: f**

This single specimen is a finely made pointed biface with a concave cutting edge. It may have functioned as a hafted carving knife like those shown by Teit (1900:184). Wear-polish is evident along the lower lateral edges, indicating possible hafting.
Material: vitreous basalt

Attribute	Measurement
length	5.30 cm
width	3.20 cm
thickness	0.83 cm
weight	10.40 g

6. Backed Knives N = 5 **Fig. 18: a–e**

Wilson describes similar implements in his assemblages from the Kamloops locality. None have bifacial flaking on their entire surfaces, but all have small retouch along one thin lateral working edge. The other lateral edge is thick, probably to be held in the hand. Four of the five specimens' thick lateral edges are formed by a single long burin-like scar. The fifth artifact has a back formed by natural cortex.
Material: vitreous basalt (5)

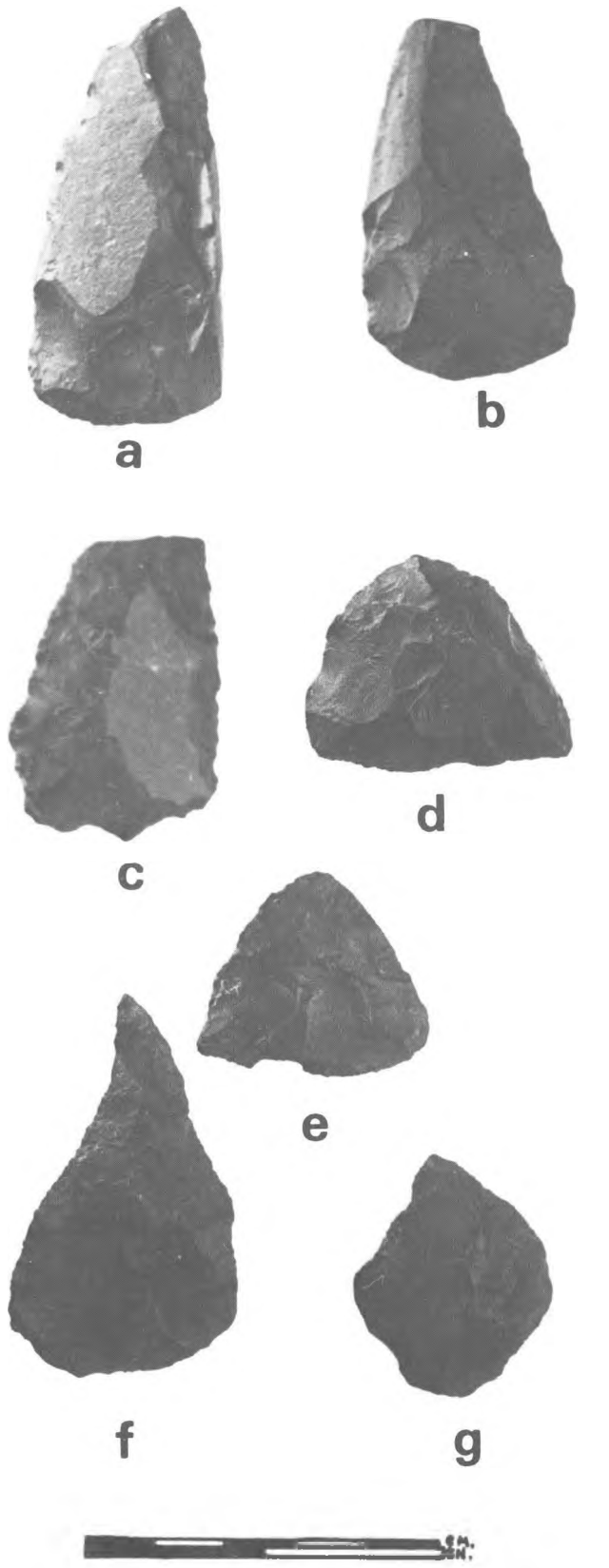


Fig. 17. Formed Bifaces. (EdRa 22). Ovate Bifaces (a–c); Triangular Bifaces (d–e); Concave-sided Bifaces (f); Pentagonal Biface (g).

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	4	6.14–7.15	6.78	0.32
width	5	2.58–3.25	2.92	0.27
thickness	5	0.80–1.05	0.94	0.10
weight (g)	4	13.70–20.7	16.33	3.03

7. Spall Tools N = 1 Fig. 23: d

This single specimen is a primary flake struck from a granite cobble with bifacial retouch along all its edges. Wear-polish is difficult to detect due to the granular raw material, although possible functions of these tools include hide preparation, fish processing, and sawing stones (Von Krogh 1976:119).
Material: granite

Attribute	Measurement
length	8.10 cm
width	6.40 cm
thickness	2.00 cm
weight	91.60 g

8. Formed Biface Fragments N = 40

These are fragments of artifacts that cannot be assigned to any of the previous categories due to their fragmentary nature. The fragments are subdivided into four groups based on their place in the original artifact, and one indeterminate group.

a. Tips N = 16

i. Point Tips *N = 13*
Material: vitreous basalt (11) quartz (1) chert (1)

ii. Other Biface Tips *N = 3*
Material: vitreous basalt (3)

b. Bases N = 8

i. Point Bases *N = 6*
Material: vitreous basalt (3) non-vitreous basalt (1) quartz (2)

ii. Other Biface Bases *N = 2*
Material: vitreous basalt (1) non-vitreous basalt (1)

c. Mid-sections N = 5

i. Point Mid-sections *N = 2*
Material: vitreous basalt (1) quartz (1)

ii. Other Biface Mid-sections *N = 3*
Material: vitreous basalt (3)

d. Indeterminate N = 11

Material: vitreous basalt (9) non-vitreous basalt (1) quartz (1)

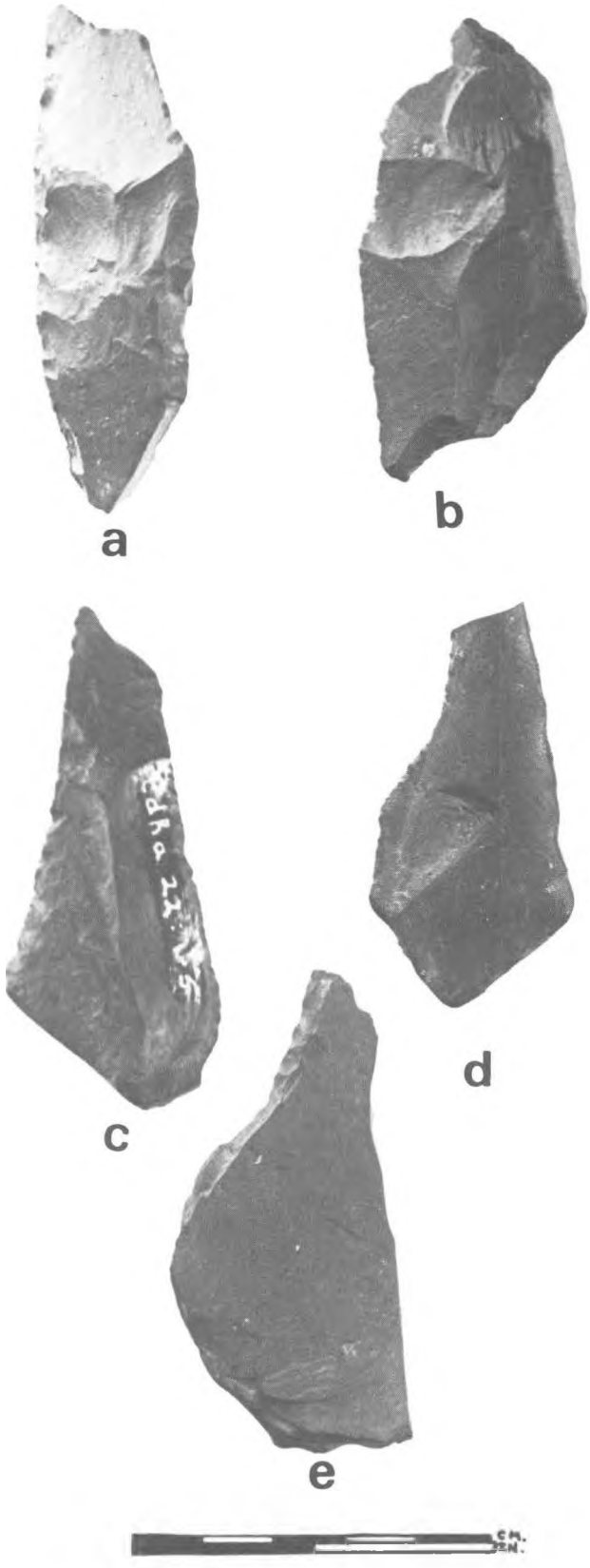


Fig. 18. Backed Knives. (EdRa 22).

B. Unformed Bifaces N = 76

These artifacts have amorphous unpatterned shapes which do not appear to have any deliberate form. They have been divided into two sub-groups: (1) bifacially retouched flakes, and (2) bifacial preforms. The bifacially retouched flakes may have bifacial edge retouch, or alternate retouch on the same or different edge (Wilson 1976:132). Preforms can be described as amorphous chunks of raw material that have some initial bifacial flaking, but which are still in a rough and undeterminable form (Crabtree 1972:85).

1. Bifacially Retouched Flakes N = 60
Material: vitreous basalt (47) non-vitreous basalt (10) chrysocolla (1) welded volcanic tuff (1) quartz (1)

2. Preforms N = 16
Material: vitreous basalt (13) quartz (3)

II. Unifacially Flaked Artifacts N = 427

Unifaces exhibit unifacial retouch on 1 or more edges of an original flake. They form the majority of the chipped stone artifacts from this site (75.40%). They are divided into two main sub-types: (1) formed, and (2) non-formed.

A. Formed Unifaces N = 63

These artifacts exhibit unifacial retouch along one or more edges, and have an intentionally designed form. The formed unifaces are divided into two further sub-types based on their presumed function: (1) scrapers, and (2) gravers.

1. Scrapers N = 48

Scrapers are defined as flake tools with steep unifacial retouch along at least one edge, referred to as the primary working edge. Scrapers are divided into four sub-types based on the location of their primary working edge(s): (1) endscrapers; (2) sidescrapers; (3) end and side scrapers; and (4) continuous scrapers (Wilson, this volume).

a. Endscrapers N = 30 **Fig. 19: a–r; Fig. 20: a–f**

These scrapers have steep retouch along the distal end of a flake, forming a convex primary working edge. Retouch occurs along the lateral edges as well, but is not steep in angle. Wilson suggests that this lateral retouch is probably used to flatten the implement to facilitate gripping or hafting, or may also have served as a cutting edge. Wear-polish is visible on 12 specimens on their primary working edges.

Material: vitreous basalt (19) non-vitreous basalt (3) chalcedony (4) quartz (3) chert (1)

Attribute	N	Range	Mean (cm)	S.D. (cm)
length	27	2.25–5.30	3.54	0.78
width	24	1.70–4.05	2.72	0.61
thickness	30	0.30–1.35	0.82	0.30
weight (g)	23	1.60–22.00	8.90	5.17

b. Sidescrapers N = 4 **Fig. 20: h–k**

These have a primary working edge along one or both lateral margins. Edges are either straight or slightly convex. Three of the scrapers have one primary working edge, while one has two edges. All have additional retouch on secondary distal and lateral working edges.
Material: vitreous basalt (4)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	4	2.95–4.65	4.10	0.78
width	4	2.30–3.50	2.93	0.51
thickness	4	0.58–0.75	0.66	0.08
weight (g)	4	6.90–11.60	8.70	2.04

c. End and Side Scrapers N = 1 **Fig. 20: g**

This scraper exhibits uninterrupted steep retouch along the distal and a single lateral margin. The distal edge is convex, and the lateral edge is straight.
Material: vitreous basalt

Attribute	Measurement
length	4.00 cm
width	2.40 cm
thickness	0.70 cm
weight	7.30 g

d. Continuous Scrapers N = 13 **Fig. 21: a–m**

These scrapers exhibit continuous primary retouch along at least three margins. The fourth margin is either fragmented or carries the striking platform of the original flake. These scrapers are smaller than the other types and are sometimes referred to as "thumbnail" scrapers. Two of the specimens are made on extremely thin oval flakes and exhibit only fine unifacial retouch along the distal and lateral margins. One of these exhibits a stem on its proximal margin, and the other may have been stemmed, which has since been broken off (see Fig. 21: l–m). No other examples of these two tools could be found in the existing literature.
Material: vitreous basalt (8) non-vitreous basalt (2) grey chert (2) welded volcanic tuff (1)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	9	1.92–4.75	3.07	0.90
width	9	1.70–3.90	2.44	0.60
thickness	13	0.25–1.20	0.51	0.25
weight (g)	6	2.20–9.70	4.38	2.73

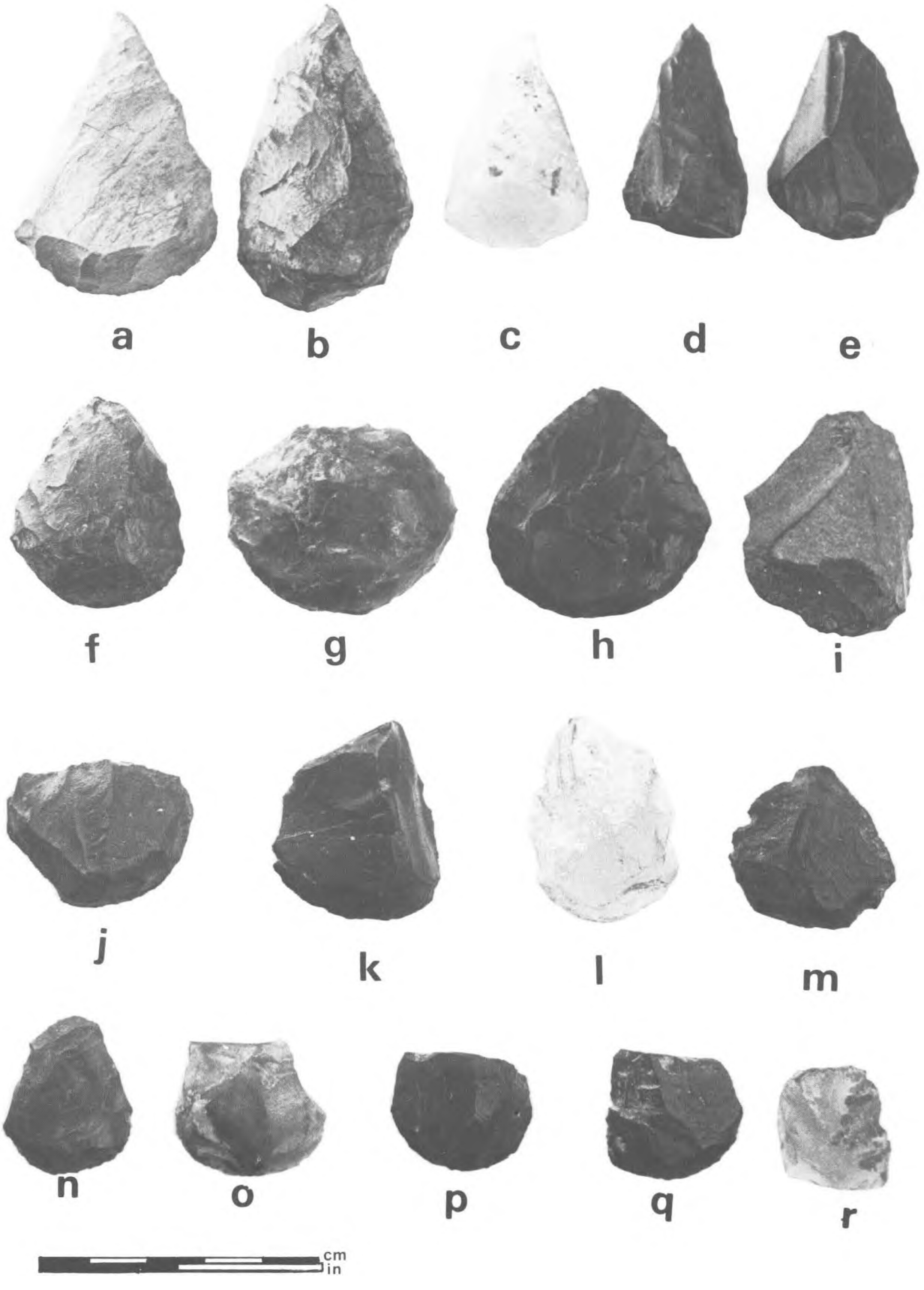


Fig. 19. Endscrapers. (EdRa 22).

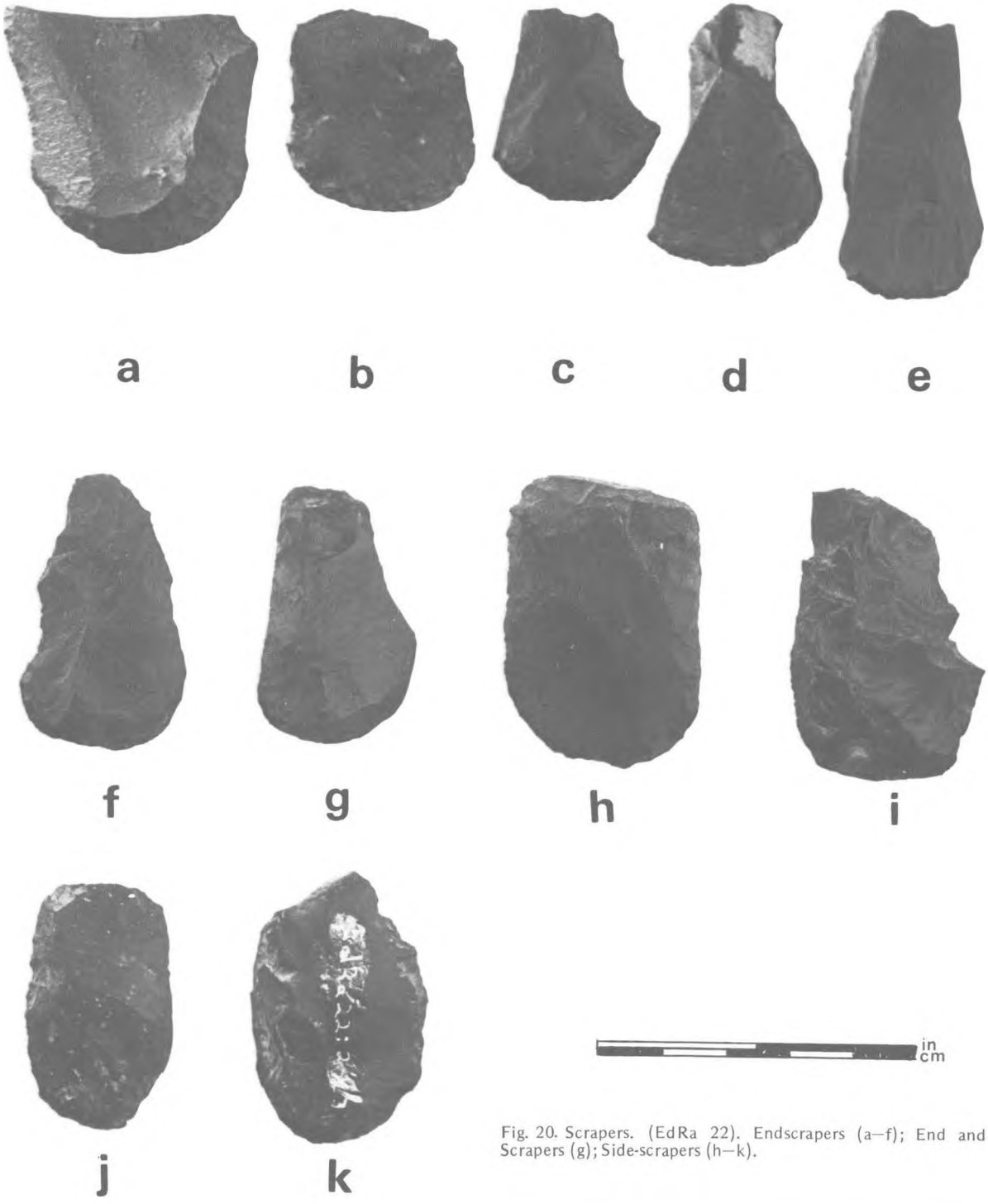


Fig. 20. Scrapers. (EdRa 22). Endscrapers (a–f); End and Side Scrapers (g); Side-scrapers (h–k).

2. Gravers N = 15

After Sanger (1970:83), gravers are defined as artifacts exhibiting a pronounced projection(s) in the form of a point or spur. The graver spur is always formed by unifacial retouch. Their function was probably for cutting, incising, or perforating, bone, antler, or wood. The gravers have been divided into two sub-types based on the sharpness of the

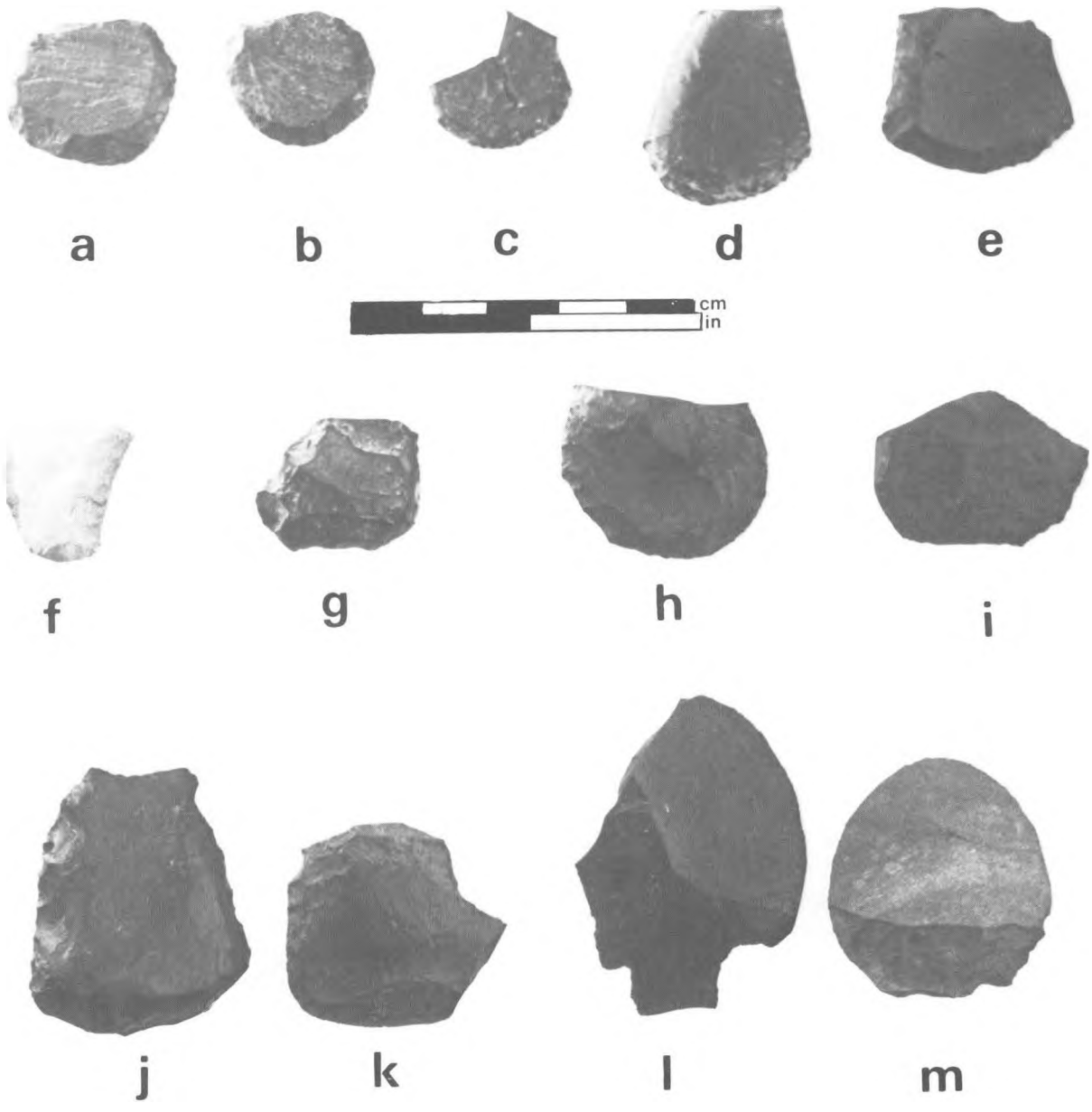


Fig. 21. Continuous Scrapers. (EdRa 22).

graver spur.

a. Sharply Pointed Graving Spur N = 10 Fig. 22: a–i

The specimens in this group have a small sharp pointed spur or spurs, and are thin in cross-section.

Material: vitreous basalt (5) quartz (3) chert (1) chalcedony (1)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	8	2.30–4.10	3.02	0.59
width	10	1.35–2.75	1.88	0.43
thickness	10	0.30–0.80	0.58	0.18
weight (g)	8	1.50–5.00	3.06	1.29

b. Rounded Graving Spurs N = 5 Fig. 22: j–n

These gravers have a single thick spur, rounded at the point. Sanger (1970:84) suggests that these gravers may have been used for heavier bone and wood cutting tasks, rather than for delicate finishing work.

Material: vitreous basalt (3) grey chert (1) chalcedony (1)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	4	2.31–7.90	5.07	2.28
width	4	1.10–2.55	1.83	0.59
thickness	4	0.60–1.05	0.85	0.21
weight (g)	4	1.20–13.50	8.33	5.81

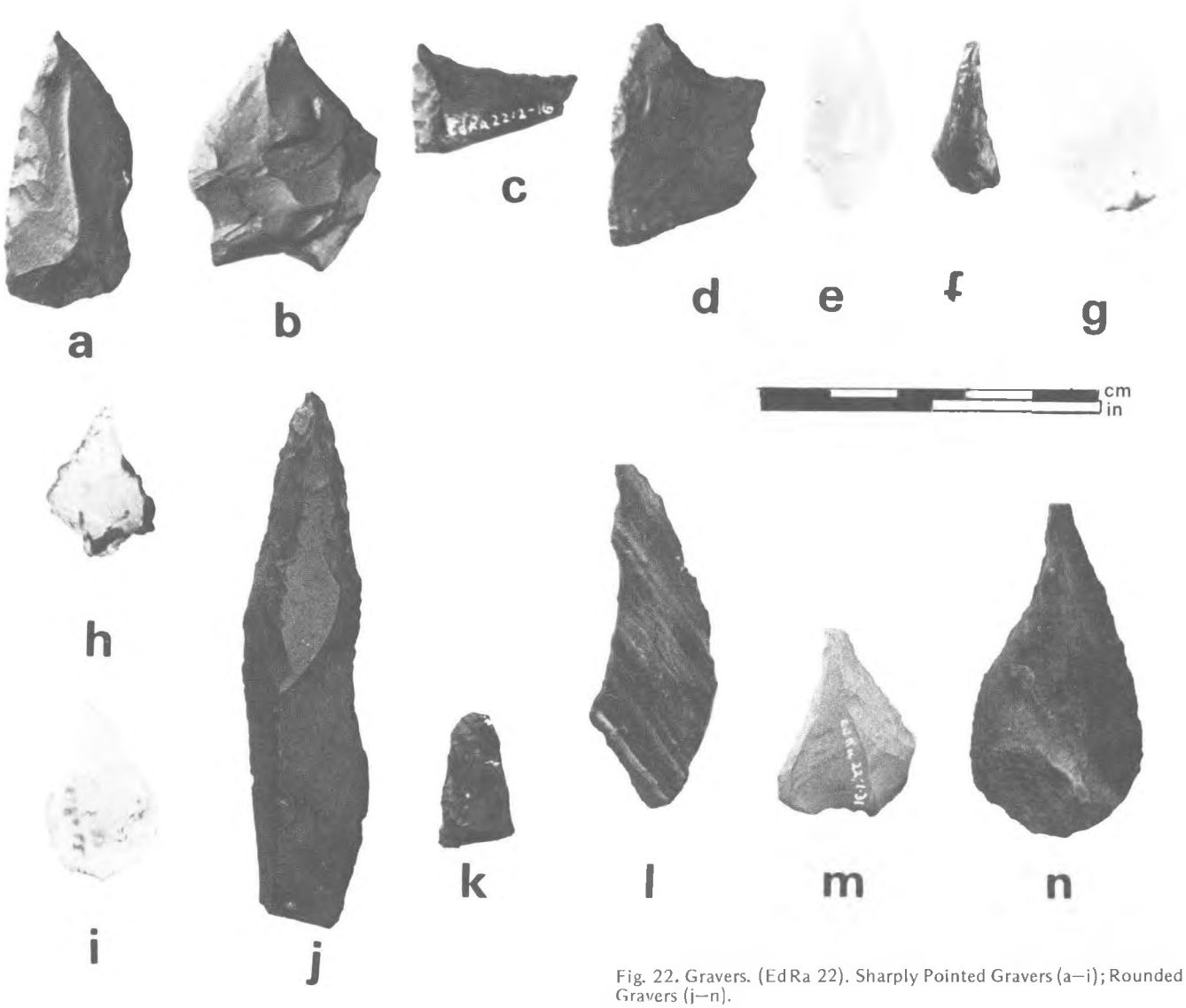


Fig. 22. Gravers. (EdRa 22). Sharply Pointed Gravers (a–i); Rounded Gravers (j–n).

B. Unformed Unifaces *N = 367*

This group comprises all unifacially retouched and utilized flakes within the assemblage. They are of various amorphous shapes with no intentional or deliberate shaping. Functionally, they have been described as "flake scrapers" (Sanger 1970:80).

Material: vitreous basalt (328) non-vitreous basalt (26) chert (6) quartz (4) chalcedony (3)

PECKED AND GROUND STONE INDUSTRY

Pecked and ground stone artifacts are very rare in this assemblage, as in other assemblages from the Kamloops locality. All pecked and ground stone artifacts found at EdRa 22 comprise only 1.38% of the total prehistoric assemblage. These 17 artifacts are divided into two types: (1) hammerstones; and (2) abraders.

1. Hammerstones N = 6 Fig. 23: a–c

All the hammerstones are made on cobbles and show battering on their butt ends. Three of the specimens are made on oval cobbles, and a fourth is a fragment of a probably oval cobble. One of the other two hammerstones is made from a larger round cobble, and the other is a flat "disk" shaped cobble battered around all edges.

Material: granite (6)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	5	8.50–16.50	12.80	3.43
width	5	4.70–16.00	9.54	5.07
thickness	5	3.10– 9.50	4.78	2.70

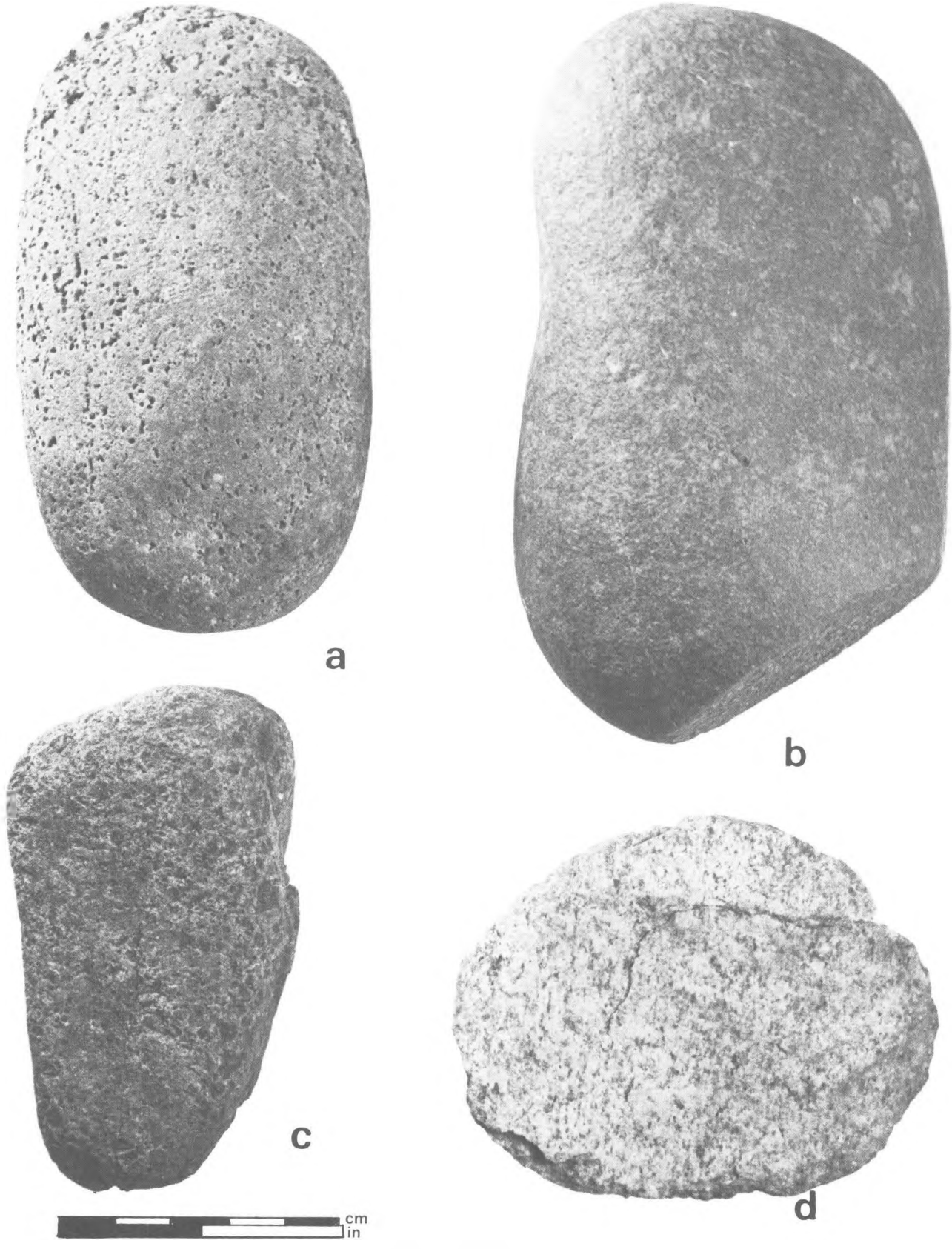


Fig. 23. Hammerstones and Spall Tool. (EdRa 22). Hammerstones (a–c); Spall Tool (d).

Table 11. Frequency of Artifacts recovered from each Excavation Area at EdRa 22

Artifact	H.P.1	Area 2	Area 4	Area 6	Area 14	Area 15	Area 16
corner notched points	3	6	1	1	-	-	-
basal notched points	-	1	-	1	-	1	-
side notched points	-	-	1	-	-	-	-
ovate bifaces	-	1	-	2	-	-	-
triangular bifaces	-	1	1	-	-	-	-
pentagonal bifaces	1	-	-	-	-	-	-
concave-sided bifaces	-	1	-	-	-	-	-
backed knives	2	3	-	-	-	-	-
spall tools	1	-	-	-	-	-	-
biface tips	4	4	5	2	-	1	-
biface bases	3	3	1	1	-	-	-
biface mid-sections	1	4	-	-	-	-	-
indeterminate biface fragments	6	3	-	1	-	1	-
bifacially retouched flakes	13	28	6	5	-	8	-
bifacial preforms	5	5	-	1	-	5	-
endscrapers	16	10	-	2	-	2	-
sidescrapers	1	2	1	-	-	-	-
end and side scrapers	1	-	-	-	-	-	-
continuous scrapers	6	4	1	1	-	1	-
sharp gravers	5	2	-	2	-	1	-
rounded gravers	2	3	-	-	-	-	-
utilized & unifacially retouched flakes	131	153	30	9	1	40	3
hammerstones	1	3	2	-	-	-	-
abraders	-	-	2	-	-	-	-
bone beads	1	3	-	-	-	-	-
bone awls	-	-	1	-	-	-	-
bone tubes	1	1	1	-	-	-	-
miscellaneous worked bone	1	-	-	-	-	-	-
TOTAL	205	241	53	28	1	60	3

II. Abraders N = 2

Both abraders are made of a granular sedimentary rock, and exhibit no patterned outline. Both are approximately of the same size and thin in cross-section, with a single abraded surface.

Material: sandstone (2)

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	2	8.65–11.20	9.93	1.80
width	2	5.60– 6.70	6.15	0.78
thickness	2	0.90– 1.70	1.30	0.57

BONE INDUSTRY

Bone implements represent only 1.56% of the total prehistoric assemblage. They are divided into four classes, of which two are functional, one is descriptive, and one is miscellaneous. These are: (1) bone beads; (2) bone awls; (3) bone tubes; and (4) miscellaneous worked bone.

I. Bone Beads N = 4 Fig. 24: a–d

All four bone beads are rectangular in shape with rounded corners, and a round or oval hole in the centre. They are made from slightly convex sections of bone shaft. Two of the beads were found together and fit one on top of another, possibly forming a composite bead.

Attribute	N	Range (cm)	Mean (cm)	S.D.(cm)
length	4	1.45–1.70	1.58	0.14
width	3	1.07–1.20	1.14	0.07
thickness	4	0.12–0.25	0.21	0.06

II. Bone Awl N = 1 Fig. 24: e

One fragmented bone awl was made from a mammal long bone. The tip is finely ground to a sharp point. The base has been broken off and lateral edges have been ground.

III. Bone Tubes N = 3

Three worked and polished fragments of tubular bone were recovered. Function is unknown although they may be fragments of cylindrical beads. Mean diameter of the two measurable specimens is 0.75 cm.

IV. Miscellaneous Worked Bone N = 1

One small fragment of polished bone measuring 1.95 x 0.70 cm was recovered. It has been finely ground to a polish on both sides, but is too fragmentary for further identification.

Fig. 24. Bone Artifacts. (EdRa 22). Bone Beads (a–d); Bone Awl (e).

ARTIFACT DESCRIPTION AND TYPOLOGY
EeRa 4

A brief description of the artifacts recovered from test excavations at EeRa 4 will be presented here. The typology used is the same as that for EdRa 22.

CHIPPED STONE INDUSTRY

I. Bifacially Flaked Artifacts N = 11

A. Formed Bifaces N = 6

1. Points N = 2 Fig. 27: a–b

Two corner notched projectile points made of vitreous basalt were recovered.

Attribute	N	Range (cm)	Mean (cm)	S.D. (cm)
length	2	3.85–4.85	4.35	0.71
width	2	2.20–2.40	2.30	0.14
thickness	2	0.50–0.70	0.60	0.14
neck width	2	1.11–1.60	1.36	0.35

2. Formed Biface Fragments N = 4

This group consists of one point mid-section, one point base, and two biface fragments of indeterminate form.

B. Unformed Bifaces N = 5

This group includes four bifacially retouched flakes of various shapes, and one bifacial preform. One flake is of welded volcanic tuff, the others are vitreous basalt.

II. Unifacially Flaked Artifacts N = 42

A. Formed Unifaces N = 2 Fig. 27: e–f

This category includes a side-scraper of vitreous basalt, and a concave-sided chert implement with a convex base and pointed distal end, retouched along all of its edges.

B. Unformed Unifaces N = 40

This class is comprised of unifacially retouched and utilized flakes.

Material: vitreous basalt (24) non-vitreous basalt (14) chalcedony (1) chert (1)

BONE AND ANTLER INDUSTRY

One antler wedge with a ground wedge-shaped tip, and one piece of incised bone with a ground proximal end were recovered.

Fig. 27: g–h

Artifact	Length	Width	Thickness
antler wedge	8.90 cm	4.30 cm	1.05 cm
incised bone	7.40 cm	0.85 cm	0.85 cm

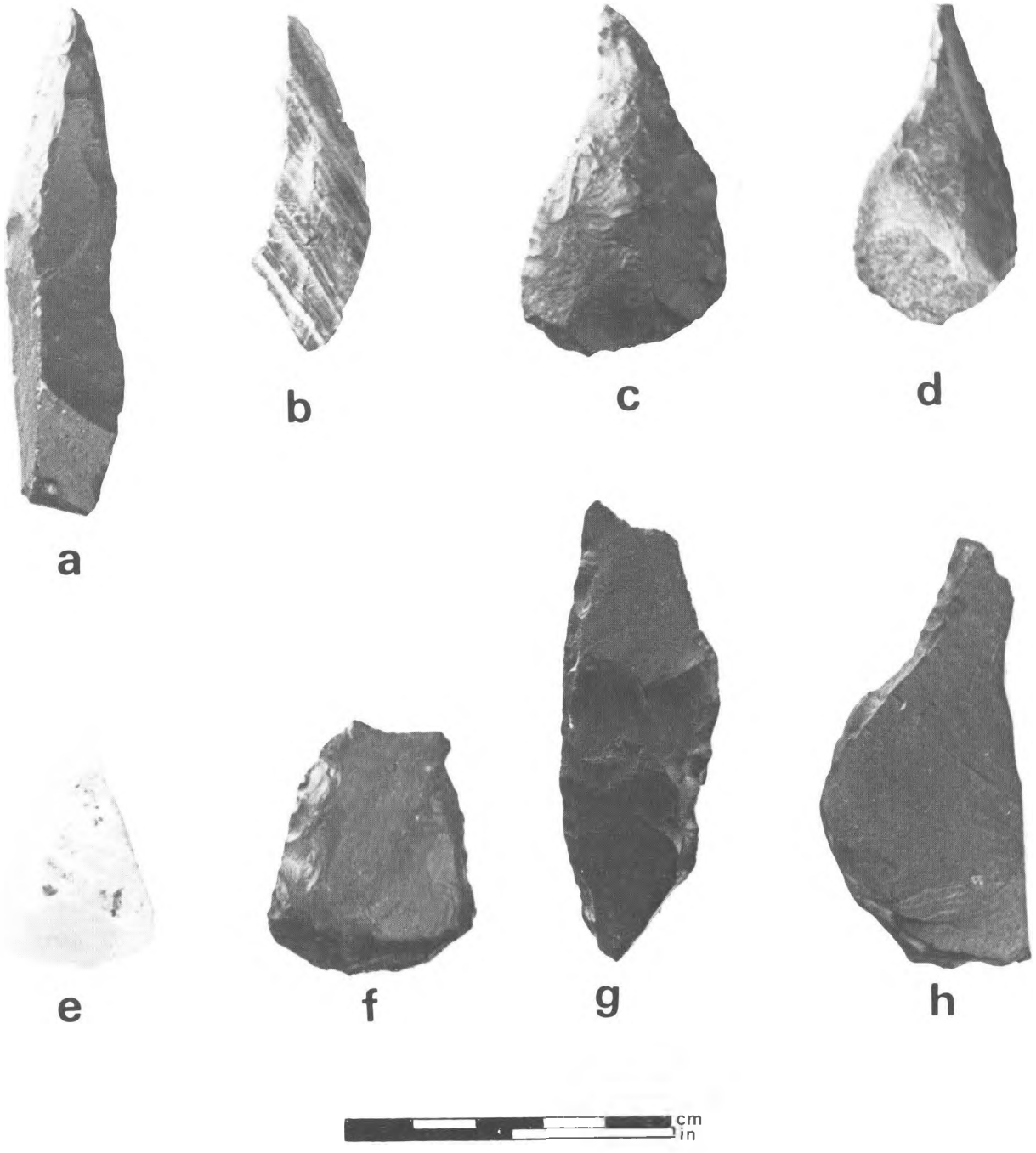


Fig. 25. Formed Artifacts Found within Cache Feature 2–18. (EdRa 22). Rounded Gravers (a,b,d); Concave-sided Biface (c); Endscraper (e); Continuous Scraper (f); Backed Knives (g–h).

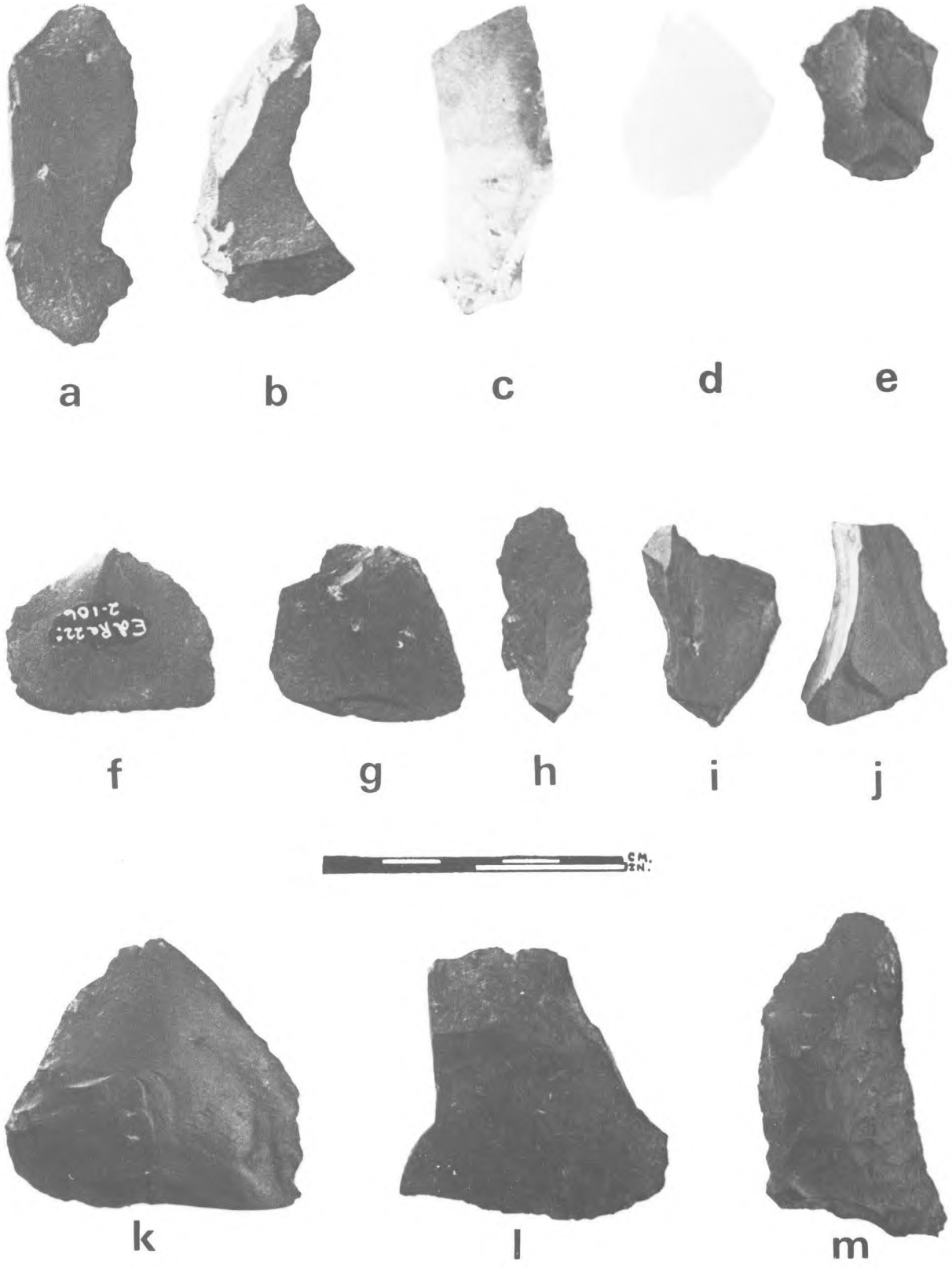


Fig. 26. Unformed Artifacts Found within Cache Feature 2–18. (EdRa 22). Bifacially retouched (a–d, f–g, k–m); Unifacially retouched (e, h–j).

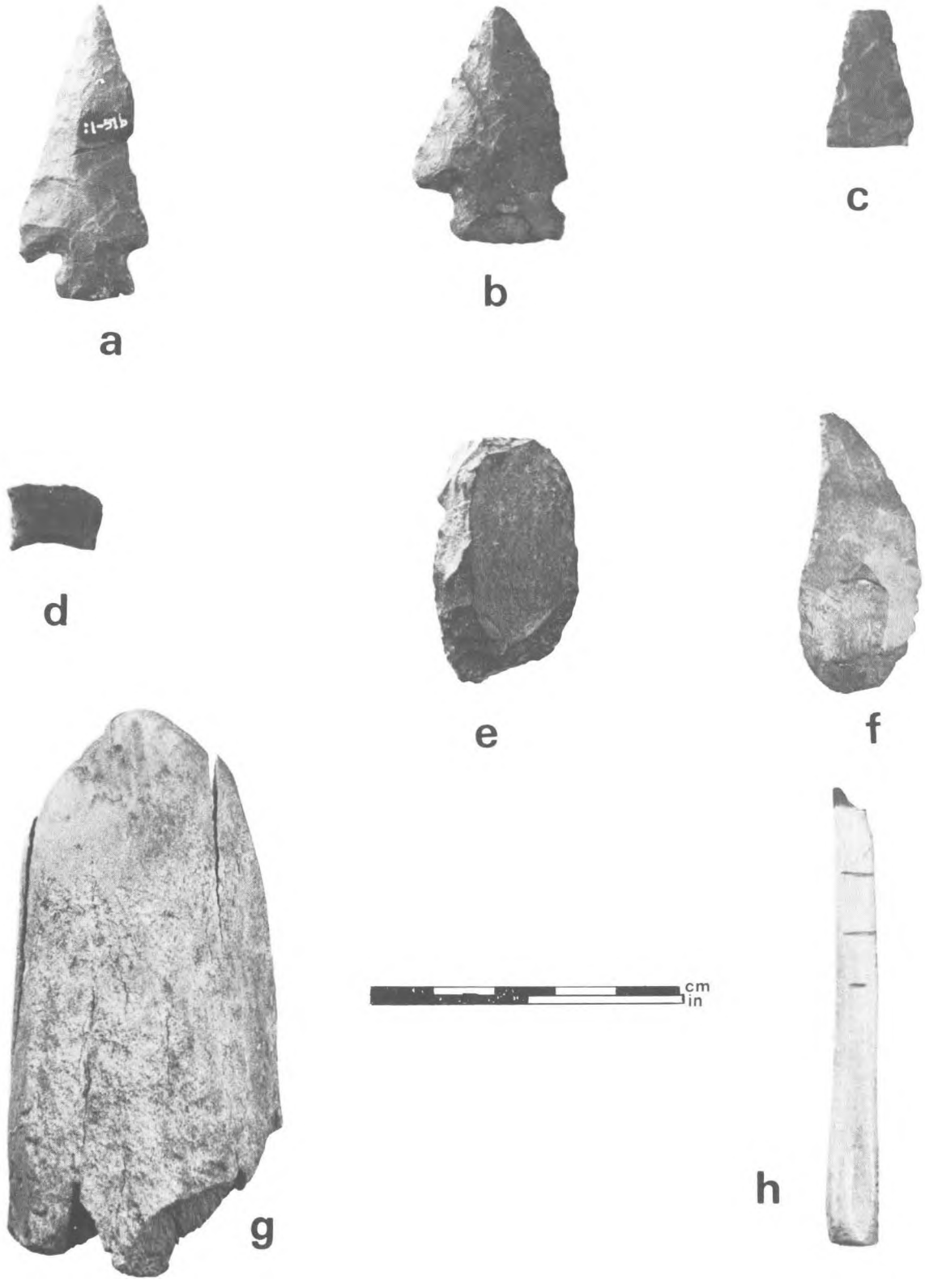


Fig. 27. Formed Artifacts from EeRa 4. Corner-notched Points (a–b); Point mid-section (c); Point Base (d); Side-scraper (e); Concave-sided Uniface (f); Antler Wedge (g); Incised Bone (h).

III. DISCUSSION AND CONCLUSIONS

It is the purpose of this section to place the materials from EdRa 22 and EeRa 4 in the chronological framework previously established for the Kamloops locality. Secondly, results of excavations in the outside house pit area, and in the six small cultural depressions will be discussed. Finally, some recommendations for future research for the South Thompson area will be proposed.

Brief History of Archaeological Work

Most previous archaeological research in the Kamloops locality was done by Robert Wilson (this volume) when he excavated seven sites along the South Thompson River. Wilson outlined a cultural chronological framework for the area, and the materials from EdRa 22 and EeRa 4 will be placed within this framework.

Other work in the area was conducted by H.I. Smith (1900). He excavated at three sites at the confluence of the North and South Thompson Rivers near the Indian Residential School. The Chase burial site was excavated by Sanger and Borden in 1960 (Sanger 1969), and work was also carried out near Chase by Johnson-Fladmark (1973) and Eldridge (1974). The Pemberton Village site (EeQx 2) on the north bank of the South Thompson River near Pritchard was excavated by Eldridge and Blake (1971). At the Rocky Point site (EdQx 20), on the south bank of the South Thompson River approximately 30 km east of Kamloops, Blake (1976) entirely excavated a single house pit in an attempt to determine in-house activity areas.

Chronological Archaeological Units

Two prehistoric cultural phases have been outlined for the Kamloops locality: (1) The Thompson Phase, *ca.* 2000–1400 B.P.; and (2) The Kamloops Phase, *ca.* 1400–200 B.P. This is followed by the Protohistoric period, 200–125 B.P. Wilson (this volume) has suggested that:

> The onset of the Medithermal in the South Thompson area may have influenced the initial occupation of the river floodplains in the Kamloops locality. This and other data, especially Elmendorf's cultural ecology of the Interior Salish, and Palmer's cultural ecology of the southern Shuswap, all suggest that the initial intensive occupation of the Kamloops locality started around 2000 B.P.

The definition of two phases within this area are based largely on changes in technology, house pit form, and inferred subsistence patterns. Characteristic traits of the Thompson Phase are listed by Wilson (p.8 this volume).

The temporal trend in projectile point styles appears to be from early large corner-notched dart points through to smaller corner-notched dart points, and finally to small side-notched arrow points. Generally, the Thompson Phase contains mainly dart points, although Wilson states that in his assemblages small numbers of arrow points are found. Also, expanding stem points appear to cluster earlier in time than straight stem points (Wilson this volume p.9).

The Thompson Phase also contains spall tools, and a higher percentage of endscrapers (4x) than the Kamloops Phase, as well as all formed bifaces except for the pentagonal type. Wide spur (rounded) gravers also appear to belong to the Thompson Phase, while those with narrow spurs (sharp) belong to the Kamloops Phase. Wilson also notes the presence of microblades in the Thompson Phase, although his sample size is only five, and no microblade cores were recovered. The microblade technology therefore must be relatively insignificant.

Chronology of EdRa 22

Based on Wilson's distribution of artifact types, it appears that the largest proportion of the artifactual material recovered from this site is representative of the Thompson Phase. Areas 13, 14, and 16 contain no diagnostic artifacts, so little can be said about their age on the basis of artifact styles. Artifacts from Areas 1, 2, 15, and possibly 6, appear to represent the Thompson Phase. The only difficulty in fitting these artifact assemblages into Wilson's definition of the Thompson Phase is that they possess a higher percentage of sharp than round gravers, and there were no microblades or chipped stone drills present.

Area 4 contains a side-notched projectile point and a bone awl, objects generally thought to represent the Kamloops Phase. Area 4 also lies directly to the west of a large house pit (the largest), that exhibits a well-defined rim, lip, and steep walls, characteristic of the Kamloops Phase.

Table 12 lists those charcoal samples submitted for radiocarbon analysis. Age estimates received on these samples are:

Sample #	Isotopes #	Age Estimate	Date
1–C1	I–10,061	1,995 ± 190 B.P.	45 B.C.
2–C1	I–10,032	520 ± 85 B.P.	1430 A.D.
2–C3	I–10,033	2,235 ± 90 B.P.	285 B.C.
4–C3	I–10,105	490 ± 80 B.P.	1460 A.D.
6–C1	I–10,486	385 ± 80 B.P.	1565 A.D.
15–C1	I–10,487	1,200 ± 85 B.P.	750 A.D.

Table 12. Samples submitted for C–14 analysis (EdRa 22)

Sample #	Area	Unit #	Provenience
1–C1	H.P.1	N101–102 E111–112	N101.67–102.00 E111.69–112.00 76 cm below surface

Description: This sample comes from feature 1–3, a pit found on the house pit floor. It will date the pit and associated occupation floor of the house pit.

2–C1	Area 2	N99–100 E107–108	N99.00–99.15 E107.34–107.87 15–20 cm below surface

Description: This sample comes from the hearth feature 2–1 on the west side of House Pit 1 and will date the outside cultural zone and associated artifacts.

2–C3	Area 2	N99–100 E117–118	N99.00–99.75 E117.00–117.35 45–60 cm below surface

Description: This sample comes from within the large pit feature 2–2 on the east side of House Pit 1 and will date the contents of the pit.

4–C3	Area 4	N114–115 E155–156	level 4 35–40 cm below surface

Description: This sample will date the bottom of the fire cracked rock zone.

6–C1	Area 6	N123–124 E176–177	17 cm below surface

Description: This sample was taken from throughout level 2 and comes from part of the burned roof structure. It will date the collapse of the roof.

15–C1	Area 15	N143–144 E212–213	N143.41 E212.47 30 cm below surface

Description: This sample consists of large pieces of charcoal from the hearth feature 15–3, and will date the hearth and associated occupation floor of the structure.

From the C-14 estimates, H.P. 1 and the associated pit feature 2–2 fall well within the limits of the Thompson Phase, and Area 15 dates the period near the end of the Thompson Phase and the beginning of the Kamloops Phase. The hearth feature found outside House Pit 1 in Area 2 (sample 2–C1) is obviously not associated with the occupations at the site.

Based on artifact styles, house pit form, and the radiocarbon estimates, it appears that the Curr site was inhabited from approximately 2300–300 B. P., or most of the known local prehistoric sequence. Whether or not it was inhabited repeatedly from year to year is unknown, however it is clear that all of the cultural depressions, house pits, and outside areas are not contemporaneous. The size of the site and the number of surficial features evident now, can be misleading in terms of envisioning how the village was composed during its occupation. Age estimates indicate that this site has been utilized as a village location for over a period of about 2000 years, and undoubtedly most of the house pits were occupied time after time.

Chronology of EeRa 4

The meager sample of artifacts recovered from this site consisted of large corner notched points with expanding bases, and an antler wedge, artifacts representative of the Thompson Phase. Testing also yielded decorated incised bone, and large circular house pit depressions with ridges, two criteria indicative of the Kamloops Phase.

The single charcoal sample from a hearth on the floor of House Pit 1, yielded a radiocarbon age estimate of 2080 ± 80 B.P. (I–10,485) – a date earlier than any of Wilson's Thompson Phase dates. If this age estimate is correct, then large circular house pits with ridges, and incised bone, may not be cultural traits distinguishing the Kamloops Phase. House pit form may not be therefore temporally significant, but may be related to some other factors, such as the size of the family unit. Wilson's proposed trend in house pit form through time from small saucer-shaped to large ridged is questionable. The occurrence of large circular ridged house pits with the initial occupation on the South Thompson, fits in better with the evidence from the mid-Fraser region (Stryd 1973a), where the large circular ridged house pits occurred around 3000 B.P.

Carbon sample description submitted for EeRa 4

Sample #	Area	Provenience
1–C2	House Pit 1	S10.60–10.85 W30.00–30.48 65–67 cm below surface

Description: This sample was from a concentration of charcoal on the floor of House Pit 1, and consequently will date the occupation floor.

Discussion

What the "transition" between the Thompson and Kamloops Phases means in terms of adaptive culture change is not exactly clear. Is there concrete evidence to differentiate early and late phases in the Kamloops locality, and on what criteria? Does the settlement pattern change within the South Thompson locality? Are there overall changes in the subsistence pattern from early to late, and can changes in demography and social organization be inferred? Wilson states that traits marking the change from the Thompson to the Kamloops Phase are: "introduction of small side-

notched projectile points, cache pits, large house pits, bone technology, ornamentation, the inferred change in subsistence emphasis from hunting to fishing, and inferred increases in population size" (this volume, p. 82).

An inferred change in subsistence emphasis from hunting to fishing seems somewhat dubious. Evidence for the increased use of the bow and arrow in the later period appears to be more indicative of increased hunting efficiency than vice versa. Wilson also suggests that the possibility of a greater reliance upon hunting than fishing in the Thompson Phase is indicated by its higher percentage of chipped stone artifacts, assuming that bone artifacts are used more in fishing technology. However, as has been noted by Wilson himself, this may be more indicative of poorer bone preservation than of any cultural phenomenon. Also, many of the implements of a fishing technology such as nets, weirs, and hooks, are made of wood which would not survive in the archaeological record. The soil conditions are extremely alkaline within this area and are generally very poor for bone or wood preservation. It is proposed here that the evidence suggests increasing technological efficiency within both hunting and fishing strategies through time, and that increasing emphasis on one or the other form of subsistence is not well enough documented.

Population increase has also been postulated for the Kamloops Phase, because of the introduction of larger house pits, and more cache pits. If the adaptive efficiency of the subsistence technology increased, then population increase may have occurred. However, I would argue that an increase in house pit dimension does not indicate a population increase during this time period in the Kamloops locality, due to other conflicting evidence. First, the Kamloops Phase sites may contain larger house pits than the Thompson Phase, but there are fewer of them within each site. This is evidenced in Wilson's assemblages, and also at the Curr site. Second, there are fewer sites containing Kamloops Phase components than Thompson Phase. Third, it must be taken into account that the Thompson Phase is only half as long as the Kamloops Phase, i.e., 600 years in duration as compared to approximately 1200 years for the Kamloops Phase.

The early date of 2080 ± 80 B.P. on the large circular ridged house pit at site EeRa 4 also strongly argues against this house pit form as being only late. Possibly the occurrence of larger house pits represents the aggregation of family units into fewer but larger houses, rather than a population increase. That variations in pit house structures did occur is documented by Smith (1947) and Ray (1939), including differences in the size and shape of the initial excavation, and in roof pitches and post patterns. Stryd (1973a: 410–416) documents variations in size and post patterns of archaeological pit houses in the Lillooet area, but does not attach temporal significance to house pit size and structure. Stryd (1972:38) states,

> . . .other attributes such as overall size, geometric shape, and maximum depth do not have temporal significance. Instead, local environmental conditions and possible familial traditions of pithouse construction seem to be more instrumental in determining the structural attributes of the dwelling.

I would suggest therefore that an increase in house pit dimension need not imply a population increase during the later time period in the Kamloops locality.

The hypothesis that an increase in number of cache pits during the Kamloops Phase is indicative of greater resource utilization leading to population increase may also be questioned. It is possible that caches may be simply less visible in earlier sites, due to the greater amount of time available for their obscuration. This possibility is supported at the Curr site where the large pit feature #2–2, representing a probable cache or cellar outside of House Pit 1, was not visible surficially at all.

In conclusion it is questionable whether or not it is possible to define an early and a late phase in the Kamloops locality on anything other than a change in point styles from large corner-notched to small triangular side-notched. While Wilson infers change in subsistence emphasis from hunting to fishing, population increase, change in house pit form, and increased storage facilities from the Thompson Phase to the Kamloops Phase, I would suggest that there is no substantial evidence to date for this. The concept of 'phase', while controversial in the archaeology of the Interior Plateau, is still useful however in those terms as stated by Stryd (1973a:22), that,

> . . .it permits us to translate the alternations and fluctuations in material culture into an orderly and more manageable sequence of units without necessarily implying drastic changes in the life ways of people responsible for that material culture.

Therefore it can be said that there is to date conclusive evidence indicating changes in point form through time, however, that only advises for the use of phase in the sense of ordering archaeological material culture, but does not necessarily infer great changes in the overall cultural pattern.

Interpretations of Activity Areas

Areas Outside House Pits

In order to carry out a spatial analysis of "activities" within an occupation, you have to be sure that the past depositional process represents a single temporal event in order that you don't run into the problem of two or more activities occurring at the same location, but at different times, and showing no discrete spatial depositional boundaries. Also, you have to be sure that you are dealing with a deposit of primary refuse, or "those cultural items on the location of use, manufacture or procurement" (Schiffer

1972:162), and not secondarily deposited refuse such as that incurred with the aboriginal cleaning of the house and dumping of the garbage outside.

Early in the field season it became evident that due to the number of occupation floors recovered outside the house pit, a single temporal activity area associated with the house could not be delineated. It was therefore not possible to attempt a spatial analysis as originally proposed, of a discrete occupation area and its specific activities in relation to the house. There was simply too much mixing of refuse over what appeared to be a long period of time. Also, as was later revealed by the radiocarbon estimate, the hearth outside the house is 1,475 years later in age than the house. Therefore the research aim was altered to investigate only general outside activities cross-cutting occupations.

The outside area yielded abundant artifacts, features, faunal remains, and other refuse. it contained an accumulation of projectile points, bifaces, knives, retouched flakes, preforms, scrapers, gravers, hammerstones, bone beads and tubes, chipping detritus, hearths, storage pits, post and stake holes, and an artifact cache. This debris probably represents a gradual accumulation of artifacts and refuse, and may indicate the following activities as having been carried on outside the house:

1) cooking and food preparation as represented by hearths and animal bones;
2) production of tools, represented by waste flakes;
3) production or modification of hunting tools as represented by stone points;
4) scraping and cutting tasks represented by knives, scrapers, gravers, and retouched flakes;
5) food storage as represented by outdoor pits or cellars, and by posts and stake holes possibly indicative of drying racks or above ground caches.

This accumulation of refuse, while not indicative of any single discrete and specific activity, is representative of general activities carried out within the spatial vicinity of the house. Essentially all artifact classes represented within the house also occur outside, in similar proportions. It appears therefore that there is no positive support for the suggestion that different subsistence and technological activities were carried on outside and inside the house. This statement must be viewed with care, however, for the possibility always exists that artifacts may not have been found in their area of manufacture or utilization, but may have been carried there for other reasons such as the cleaning of the house. The whole problem of artifact curation, and primary and secondary deposition is extremely important to consider when trying to interpret, even generally, past "activity areas".

Studies done on activity areas within houses such as that by Blake (1976) for a house pit on the South Thompson River, are so fraught with assumptions about the past cultural and natural depositional processes, as well as certain statistical assumptions, i.e. assuming normal distributions, as to render the results highly speculative. His predictions are only distributions of artifact classes which give no interpretations of activity areas, as he states that, "each class analyzed was labelled with a corresponding arbitrary activity so as not to indicate function" (Blake 1976:20). It is difficult to see how an artifact class distribution can represent an activity, arbitrary or otherwise, and particularly without function. These problems are so great, that I am extremely reluctant to place much validity on the whole concept of the "activity area", and its contributions to Archaeology to date.

Storage Pits

The contents of the large circular pit outside house pit 1 provided some information on domestic activities. It seems likely that food storage was the major function of this subterranean pit. As well as a notable amount of faunal remains (yet to be analyzed), indicative of food storage, this pit also contained artifacts that may have been abandoned while in storage. These included a large number of scrapers, as well as stone points, bone beads, and retouched flakes. Thus, household implements may have been stored in outside pits. The pit also contained a large amount of refuse such as unmodified flakes, and while probably originally used for storage, was eventually used as a refuse container. The abandonment of the pit probably occurred in conjunction with the abandonment of the house, and perhaps house debris was swept into the pit.

While cache or storage pits are common for the sites in this area, pits of the large size and depth of this one have not been previously described. Interestingly, this pit was not visible surficially at all which leads one to question the idea that cache pits may only have become numerous during the Kamloops Phase. The real possibility exists that caches may simply be less visible in earlier sites, due to the greater amount of time available for their obscuration. In general, due to the amount of material recovered, it is concluded that excavation in areas outside house pits is of value to the archaeological interpretation of a site as a whole. Initially, because of statements in the literature that "...the preliminary testing revealed comparatively little cultural data outside house-pits" (Wilson 1976:23), it was thought that little information could be collected from these areas. This inital assumption appears false for this site, and it is recommended that these areas be further tested in other sites.

Small Cultural Depressions

Untested assumptions about the function of the small shallow circular depressions often found surficially at sites along the South Thompson River, are that they represent the remains of the summer dwelling or mat lodge. This assumption has been stated very early in the literature, for example, Harlan I. Smith (1913: 18) writes that,

> "On the sites of the old villages there are shallow saucer-shaped depressions, like those formed by continual sweeping in the conical lodge or summer house of the modern Indians".

Excavations in some of these small shallow depressions have revealed stratigraphic evidence of well defined 'roof-fill' and 'floor' zones in Areas 4, 6, 15, and 16, and it is therefore probable that these areas are not representative of mat lodge remains where roof-fill zones would not be expected. A hearth found on the floor of Area 15 would also indicate that it is a winter dwelling. The presence of large post holes would also argue against light mat lodge structures. Menstrual isolation huts were also constructed like small pit houses (Teit 1900), although due to the number of projectile points found within these areas, it does not seem likely that these depressions are the remains of isolation huts. Area 4 is somewhat more complex than the others. It was apparently originally a small pit house, as evidenced by a 'floor' and 'roof fill' zone, large post holes, and a cooking pit almost identical to the one excavated in House Pit 1, but was later reused probably as a fire cracked rock refuse area from perhaps the large house pit adjacent to it, or possibly some form of oven.

Areas 13 and 14 revealed so little cultural material (1 unifacially retouched flake from Area 14), that it is difficult to determine their function. The pits may be small enough to represent some form of cache.

More work should be done on small depressions in winter pit house villages. Functional interpretations derived from this study do not coincide with the common assumptions and indicate further study is required.

Acknowledgements

Contract salvage funds were provided by the British Columbia Department of Highways through the Office of the Provincial Archaeologist. The Youth Employment Program provided funding for the salary of one field technician from the Kamloops Indian Band.

My thanks go to the members of the Kamloops Indian Band Council for their cooperation with the project; to Mr. and Mrs. Raymond Curr for allowing us to excavate and camp on their land; and to the Administration at Cariboo College for handling the financial bookwork and for the provision of lab space.

I would also like to thank the members of the field school for their hard work and persistence even during extremely hot weather conditions: Diane Dick, Sheryl Emery, Susan Fleming, Jacques Goutier, Brenda Hardy, Pat MacNemara, Carolyn Martin, Tim Nagurski, and Georgina Spearman.

My three field assistants, Stephen Lawhead, Rena Webber, and Ada Seymour deserve special thanks for their hard work and valuable suggestions. Nicole Byers did an excellent job of conducting site tours, as well as helping with lab and office work. I would also like to thank Cyndy Seymour for her volunteer field work during July. Thanks go to Robert Spearman for doing the back-filling at the Curr site, and to Diana French for helping with the back-filling at EeRa 4. Thanks also go to Tom Loy of the Provincial Museum for identifying some of the recovered lithic raw materials.

I am grateful to the Department of Archaeology at Simon Fraser University for providing me with lab space and dark room facilities from September to December of 1977. I would also like to thank Dr. Knut Fladmark for his direction and assistance in preparing this report.

Finally, I wish to thank Dr. Arnoud Stryd of Cariboo College, who initiated the project. Without him the work would never have begun, and his involvement and assistance throughout were invaluable.

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