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.

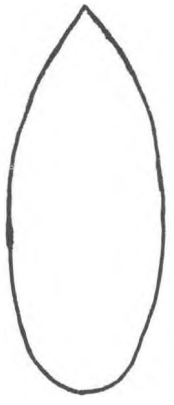
Artifact	Number	Site				
		EeRb 3	EeRb 3(s)	EeRb 10	EeRb 11	EdRa 9
Projectile points	7	2		2		3
Formed bifaces	15	7		2		6
Non-formed bifaces	28	16		3		9
Non-formed unifaces	99	74	7	8	5	5
Scrapers	11	5	1		2	3
Drills	2	1				1
Gravers	5	4			1	
Microblades	3	1			1	1
Macroblades	1			1		
Miscellaneous	1	1	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

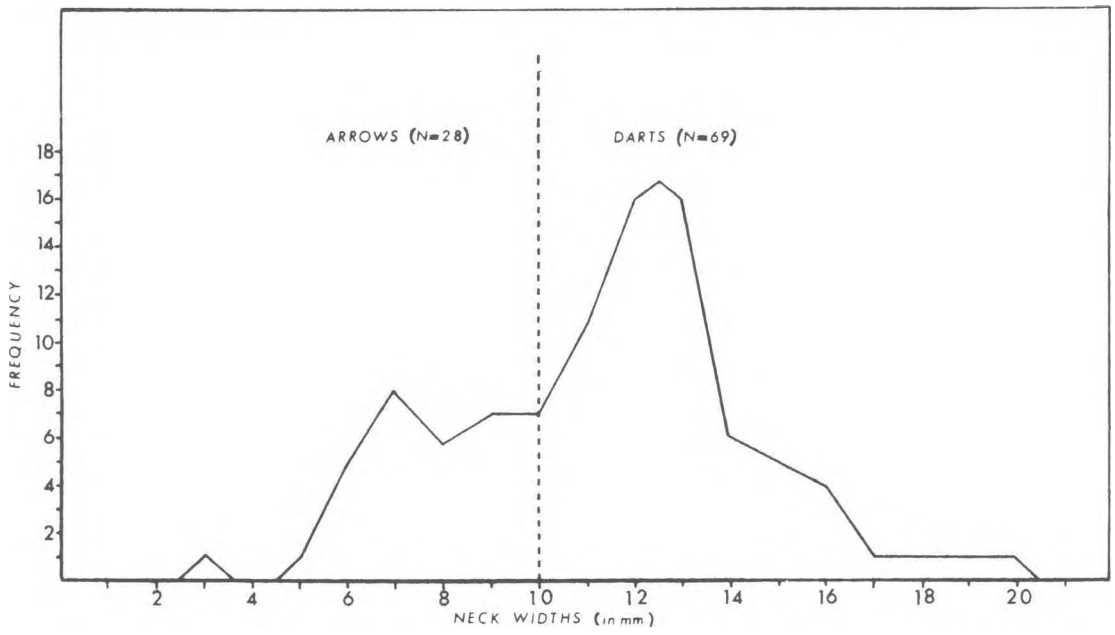


Fig. 34. Distribution of projectile point neck widths, N=97. Group 1 points are not included in this graph. Some overlap does occur; three dart points have neck widths of less than 10 mm.

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

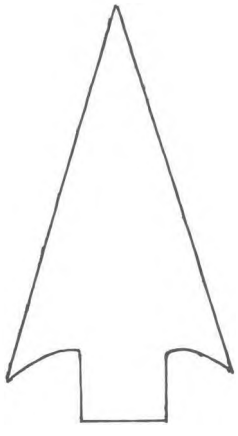
Group 2: Corner-notched. N = 62

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)

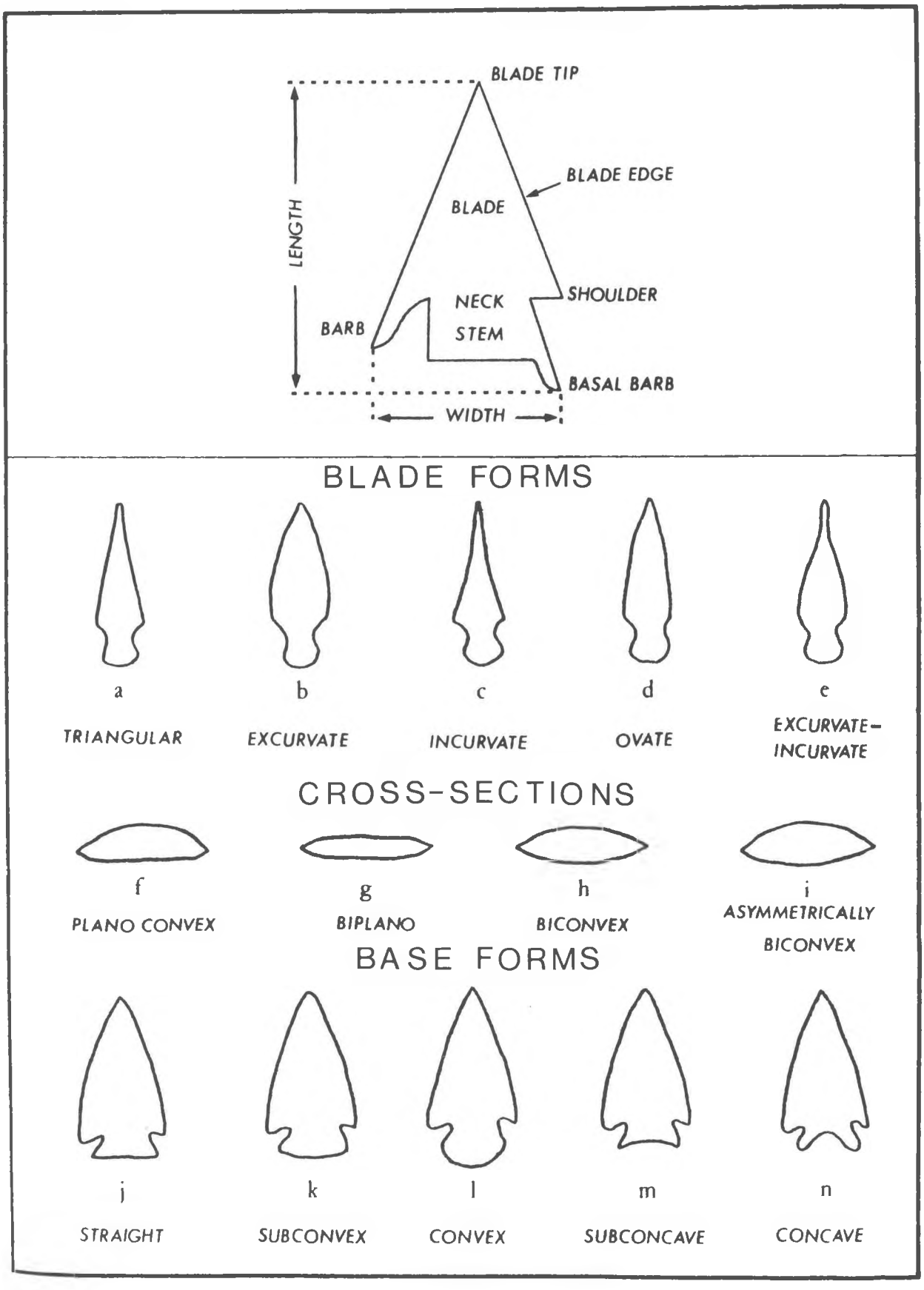

BLADE TIP
BLADE EDGE
BLADE
LENGTH
SHOULDER
NECK
STEM
BARB
BASAL BARB
WIDTH
BLADE FORMS
a
TRIANGULAR
b
EXCURVATE
c
INCURVATE
d
OVATE
e
EXCURVATE–
INCURVATE
CROSS-SECTIONS
f
PLANO CONVEX
g
BIPLANO
h
BICONVEX
i
ASYMMETRICALLY
BICONVEX
BASE FORMS
j
STRAIGHT
k
SUBCONVEX
l
CONVEX
m
SUBCONCAVE
n
CONCAVE

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.

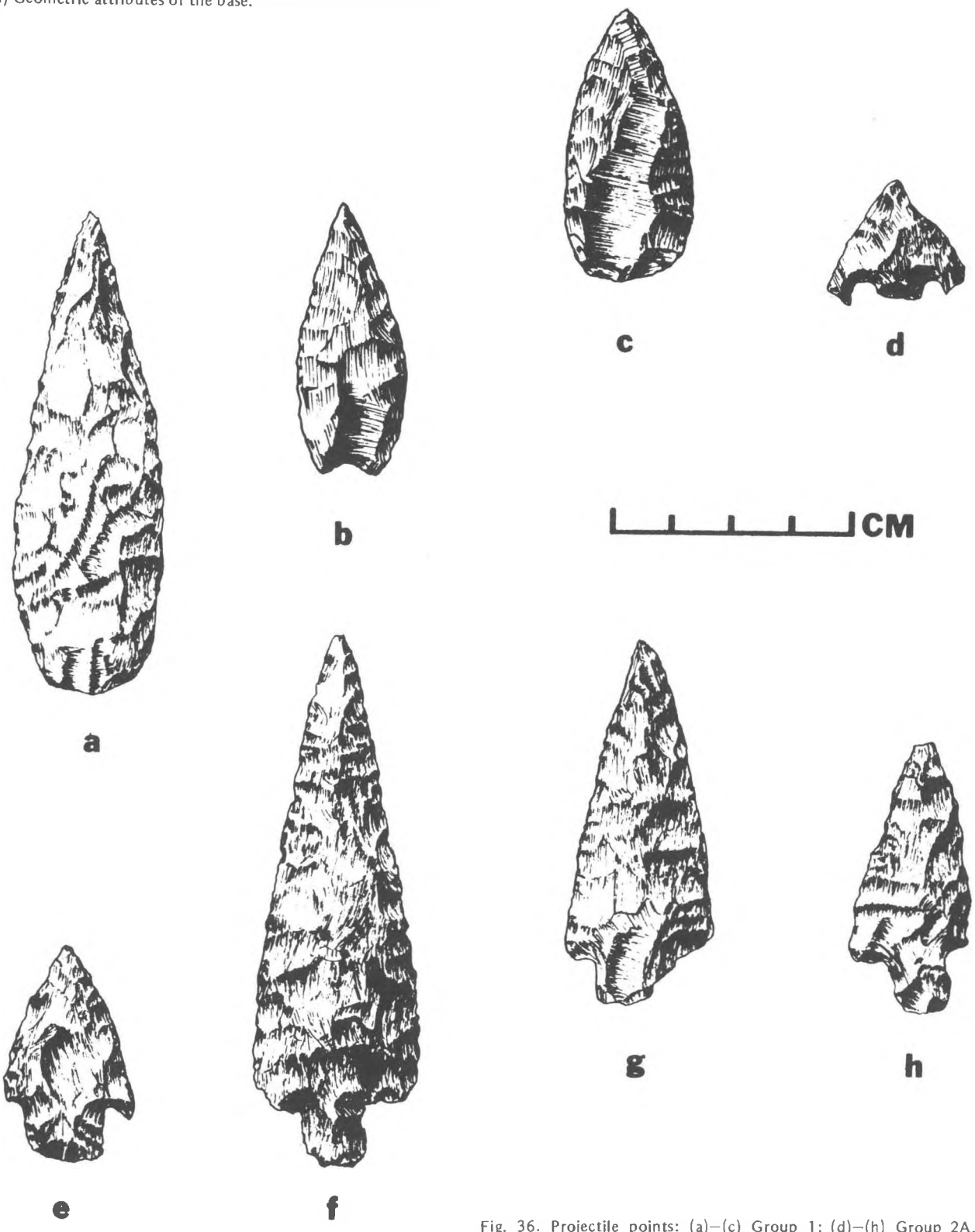


Fig. 36. Projectile points: (a)–(c) Group 1; (d)–(h) Group 2A. Thompson Phase: Kamloops Reserve site: (a), (b), (e), (f), (h). Van Male site: (c), (d); Harper Ranch site: (g).

Function

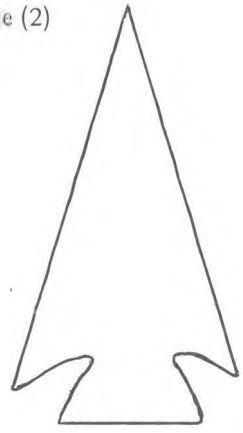
Dart (15) Arrow (4)

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

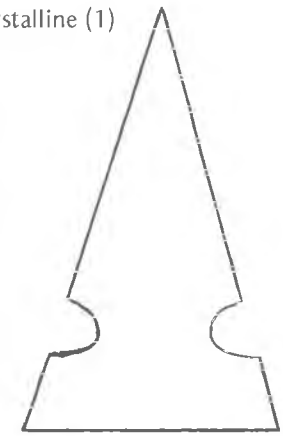
Dart (40) Arrow (3)

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)

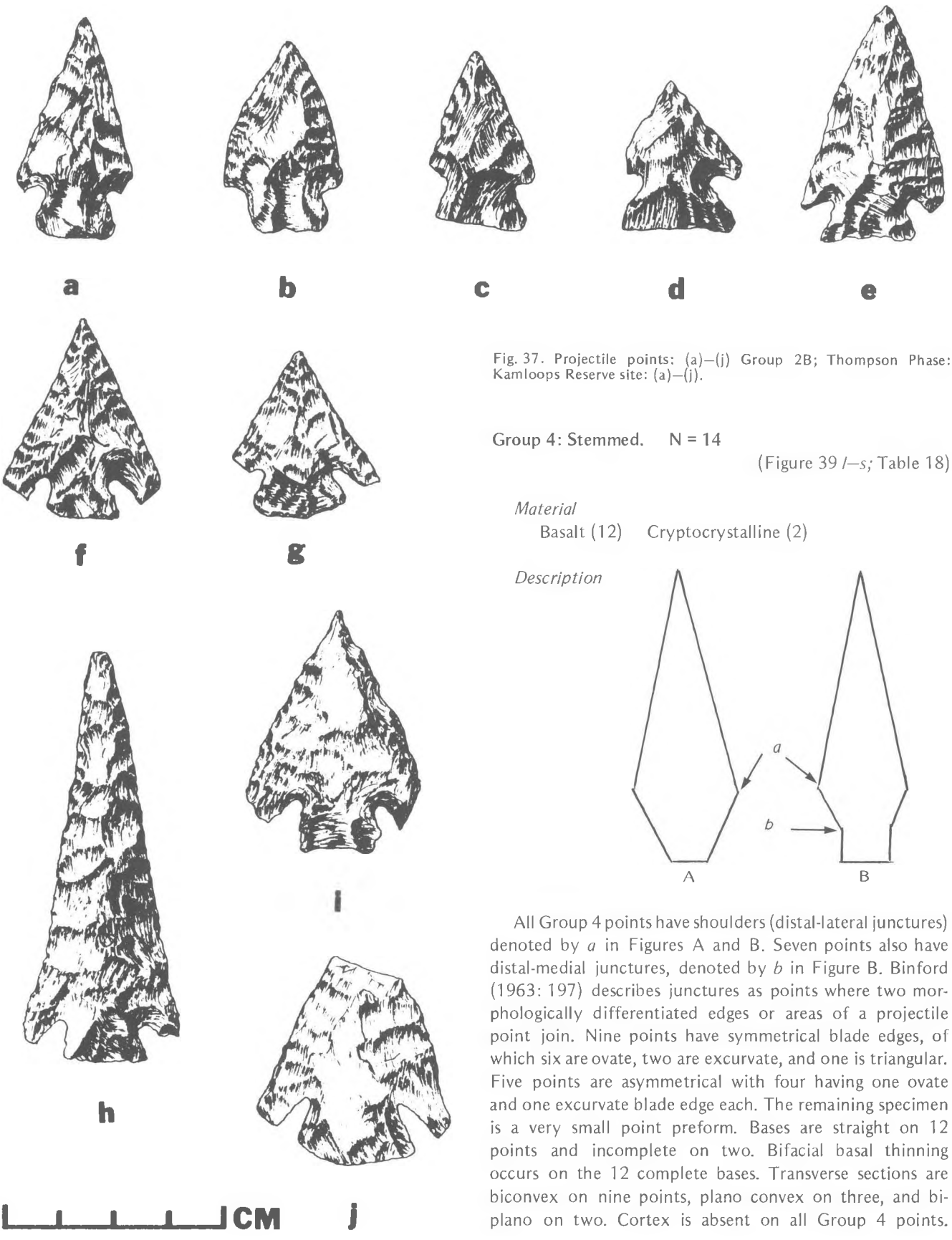


Fig. 37. Projectile points: (a)–(j) Group 2B; Thompson Phase: Kamloops Reserve site: (a)–(j).

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-

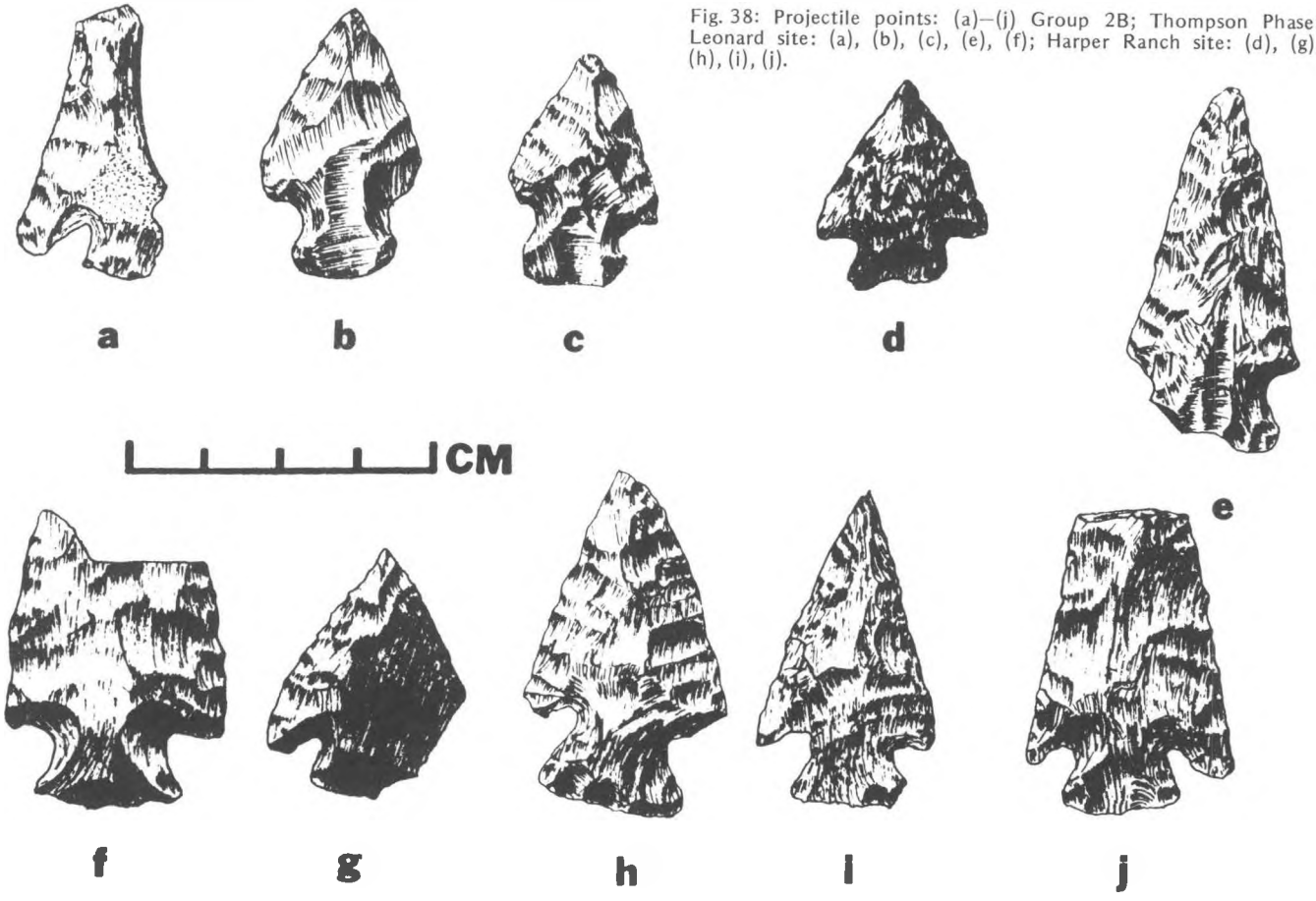


Fig. 38: Projectile points: (a)–(j) Group 2B; Thompson Phase: Leonard site: (a), (b), (c), (e), (f); Harper Ranch site: (d), (g), (h), (i), (j).

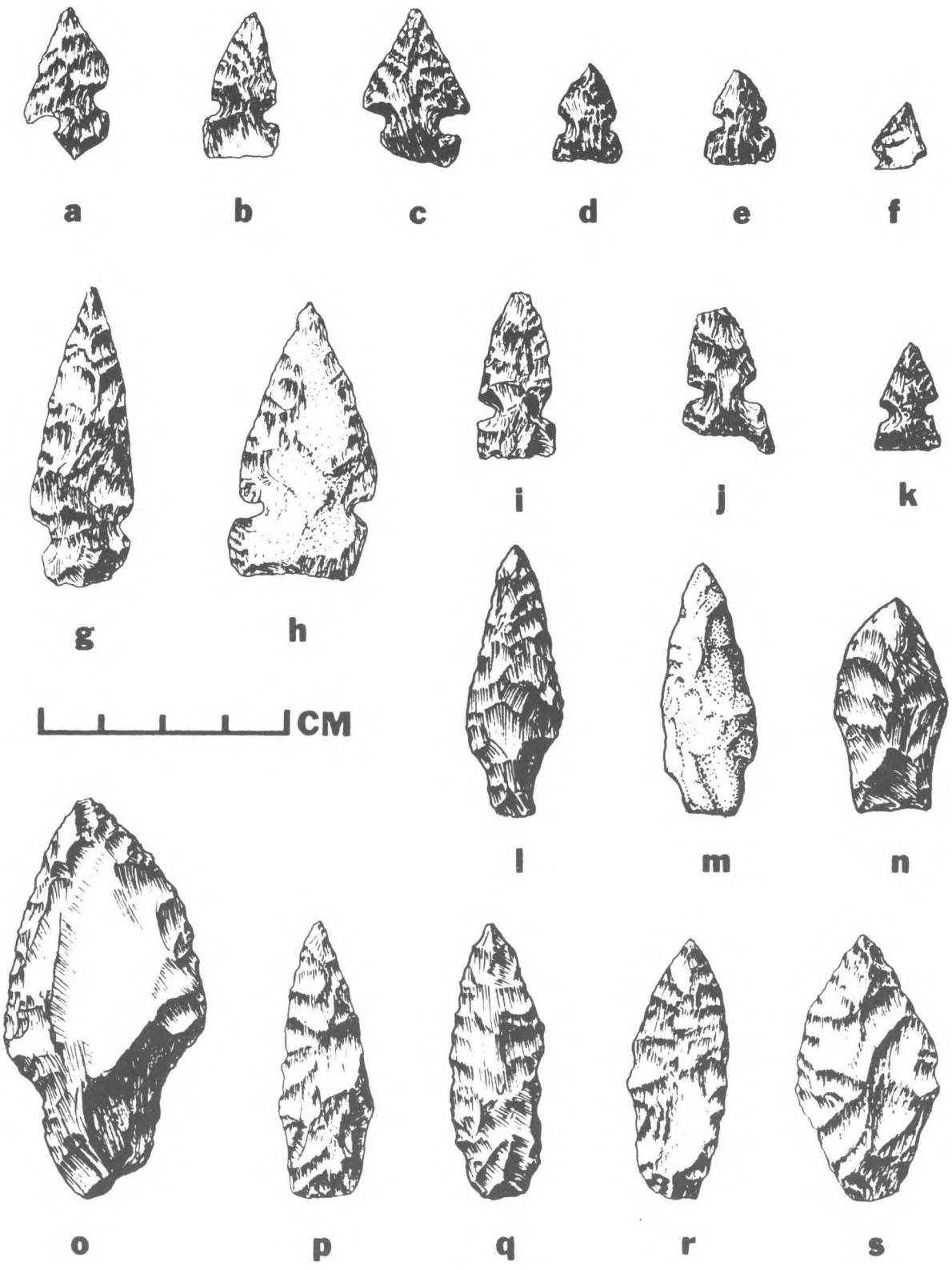


Fig. 39. Projectile points: (a)–(k): Group 3; (l)–(s): Group 4. Thompson Phase: Kamloops Reserve site: (p), (r), (s); Van Male site: (l), (m), (n); Harper Ranch site: (q); Kamloops Phase: Leonard site: (a), (f); Harper Ranch site: (b), (c), (d), (e), (g), (h), (i), (k), (o).

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.

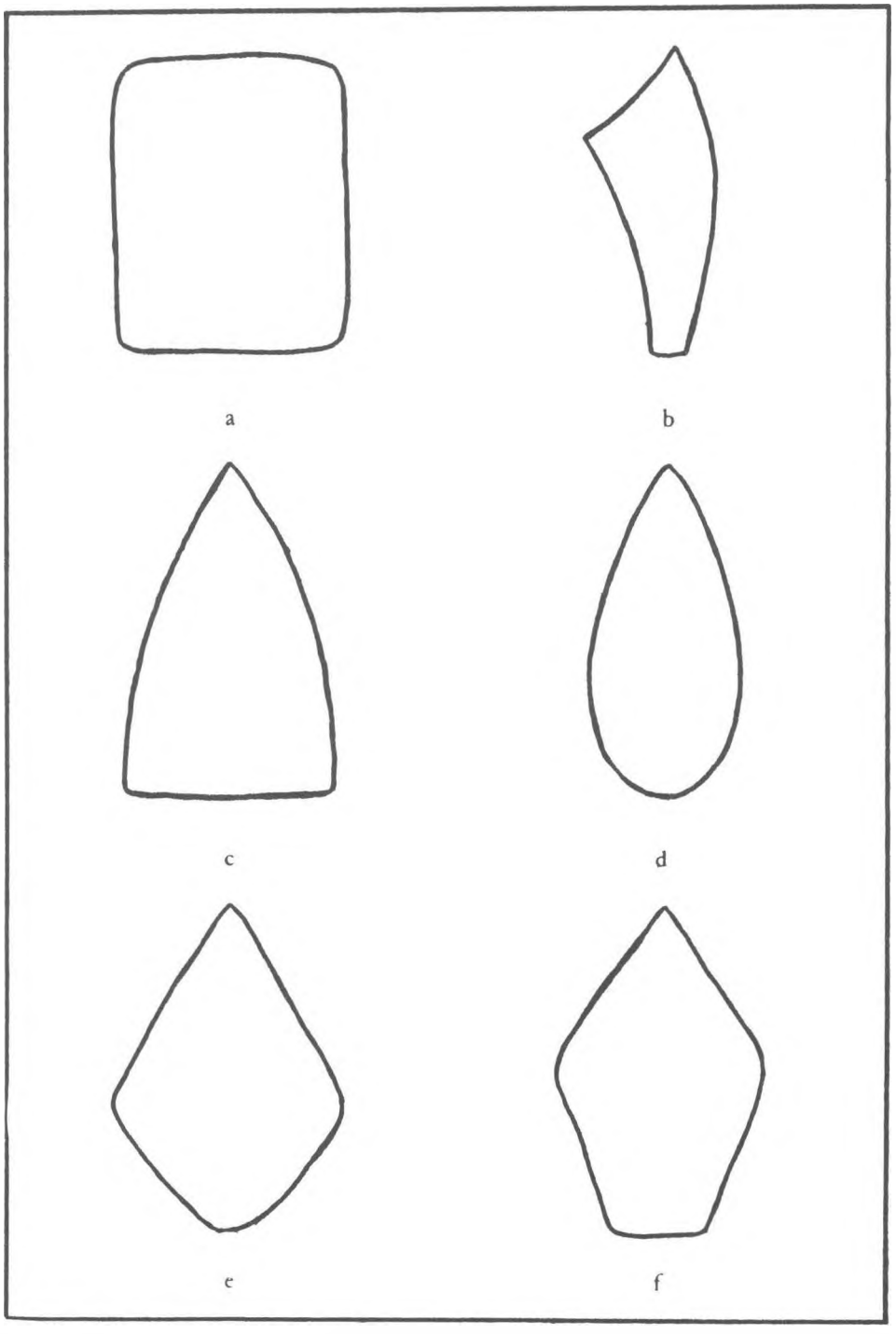


Fig. 40. Biface form types: (a) rectangular; (b) quadrilateral; (c) triangular; (d) ovate; (e) rhomboidal; (f) pentagonal.

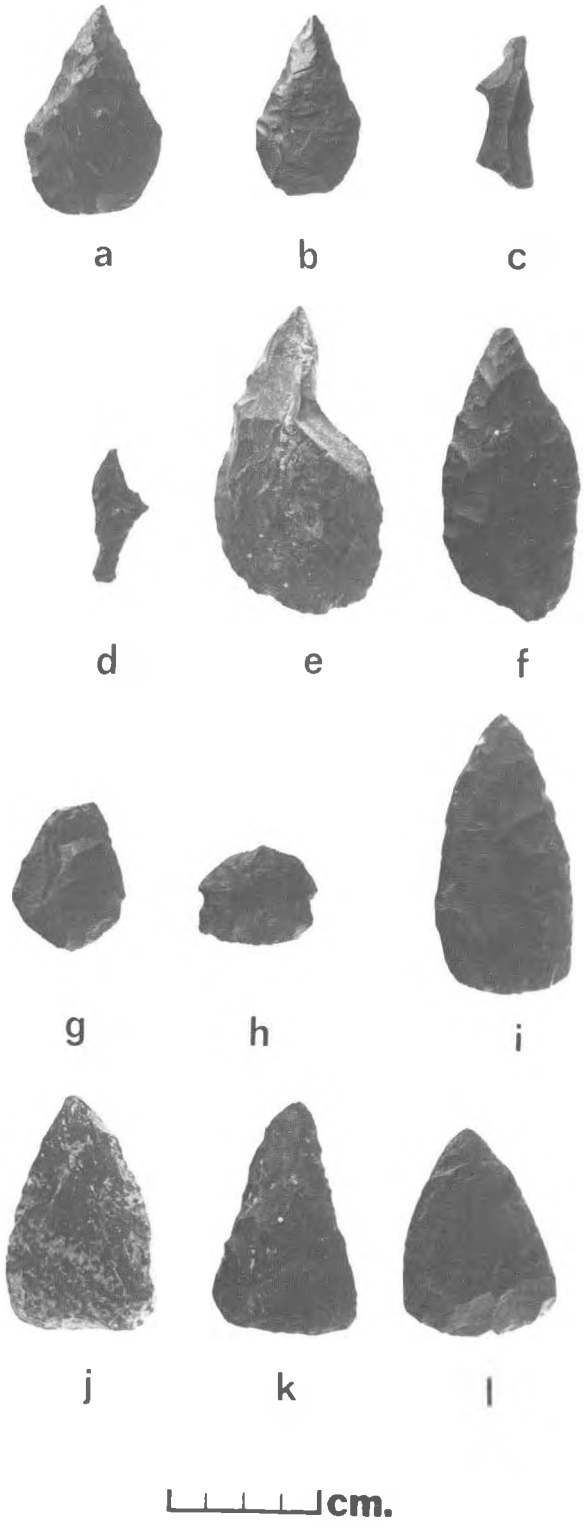


Fig. 41. Formed bifaces. (a), (b) Pentagonal; (c), (d) Quadrilateral; (e), (f) Ovate; (g) Rhomboidal; (h) Hafted biface; (i)—(l) Triangular. Kamloops Reserve site: (d), (i), (j), (k), (l); Van Male site: (e); Harper Ranch site: Thompson Phase (c), (h); Kamloops Phase (a) (b), (f), (g).

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.

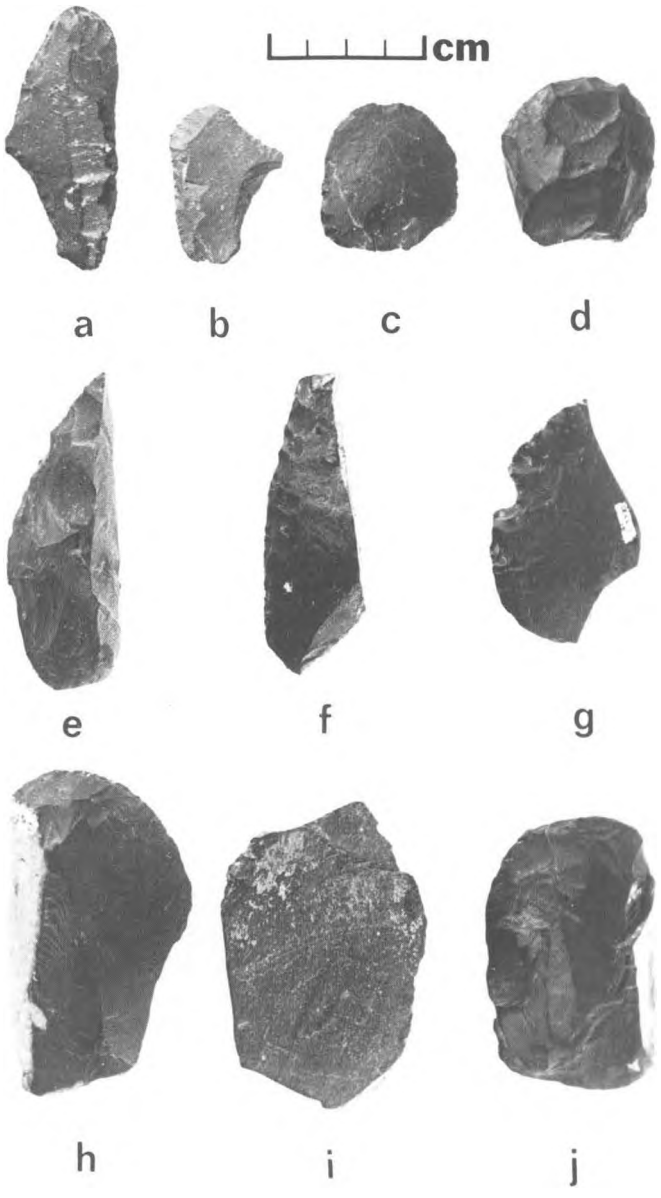


Table 19. Dimensions of formed bifaces by type.

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.

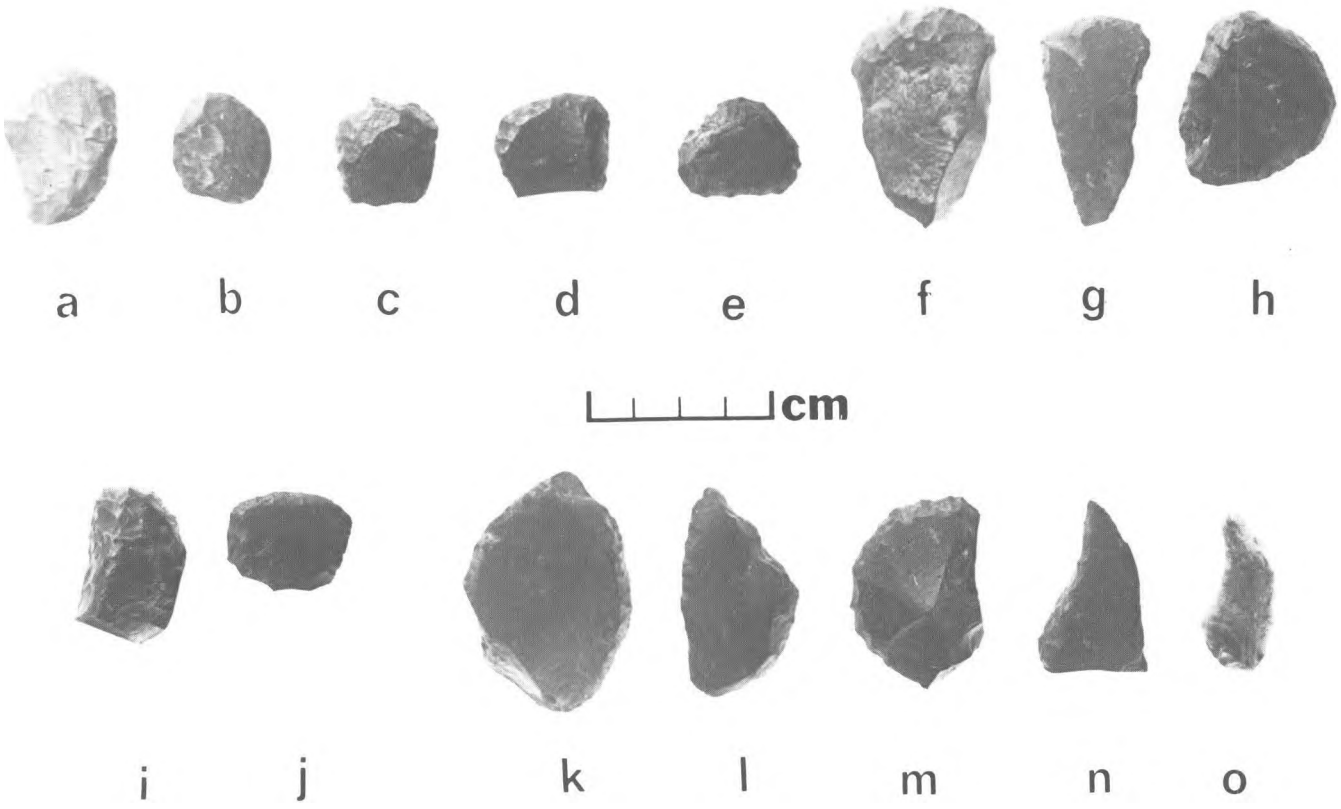


Fig. 43. Scrapers: (a)--(e) Continuous scrapers; (f)—(j) Endscrapers; (k)—(o) Side scrapers. Kamloops Reserve site: (b), (g), (m). Leonard site — Phase affiliation uncertain (i). Harper Ranch site — Thompson Phase (a), (o); Kamloops Phase (b), (c), (d), (h), (k), (l), (n). Protohistoric Phase (f), (j).

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

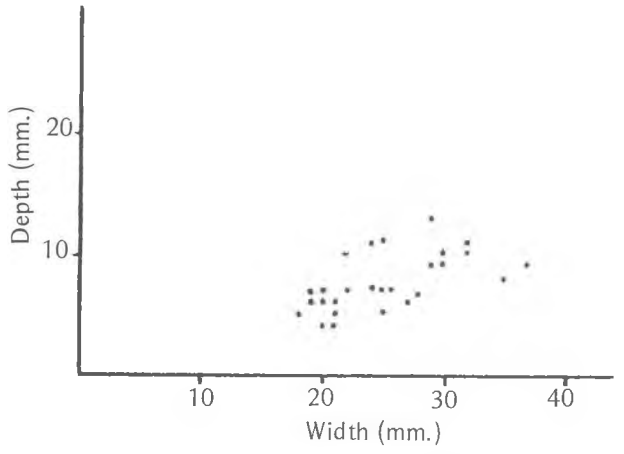


Fig. 44. Width/depth measurement ratios of endscraper edges.

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.

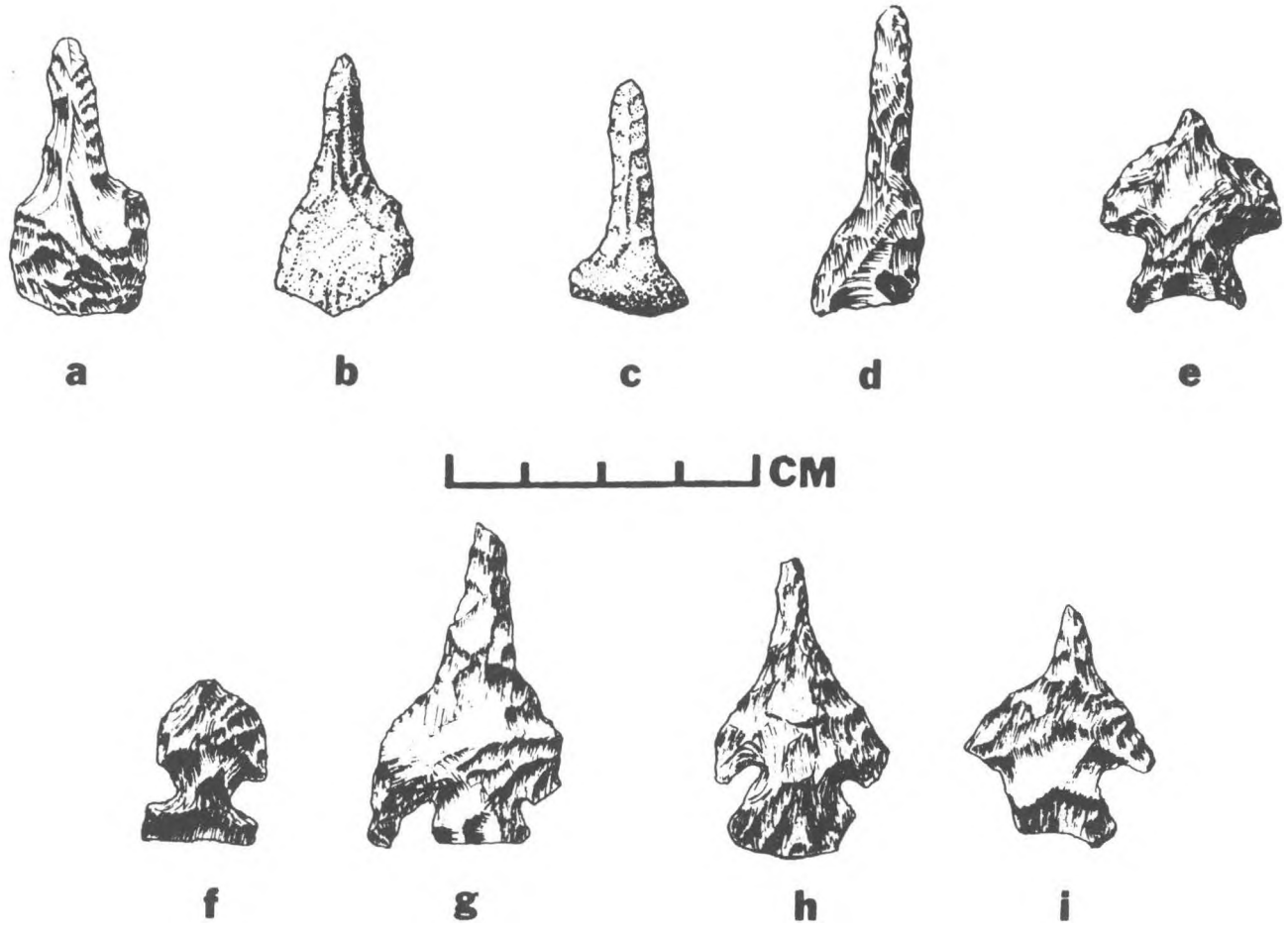


Fig. 45. Drills: (a)–(d) Expanding base drills; (e)–(i) Notched drills. Kamloops Reserve site (b), (c), (d), (e), (g), (h), (i). Harper Ranch site – Thompson Phase (a); Kamloops Phase (f).

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

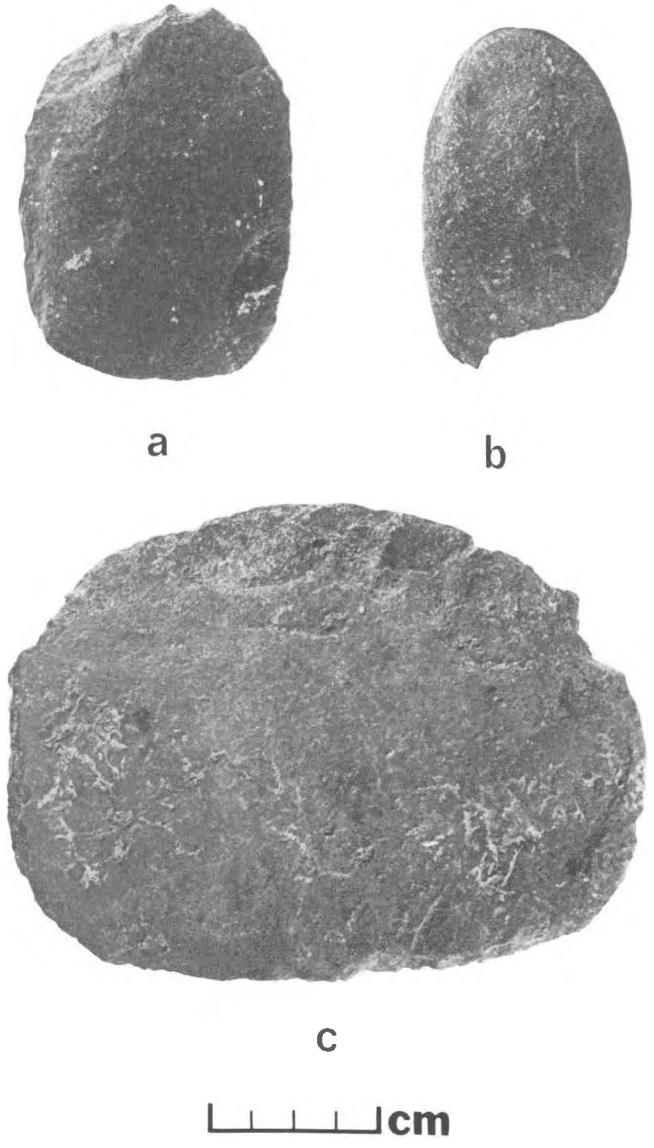


Fig. 47. Spall Tools (a)–(c). Kamloops Reserve site (a), (b), (c).

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-

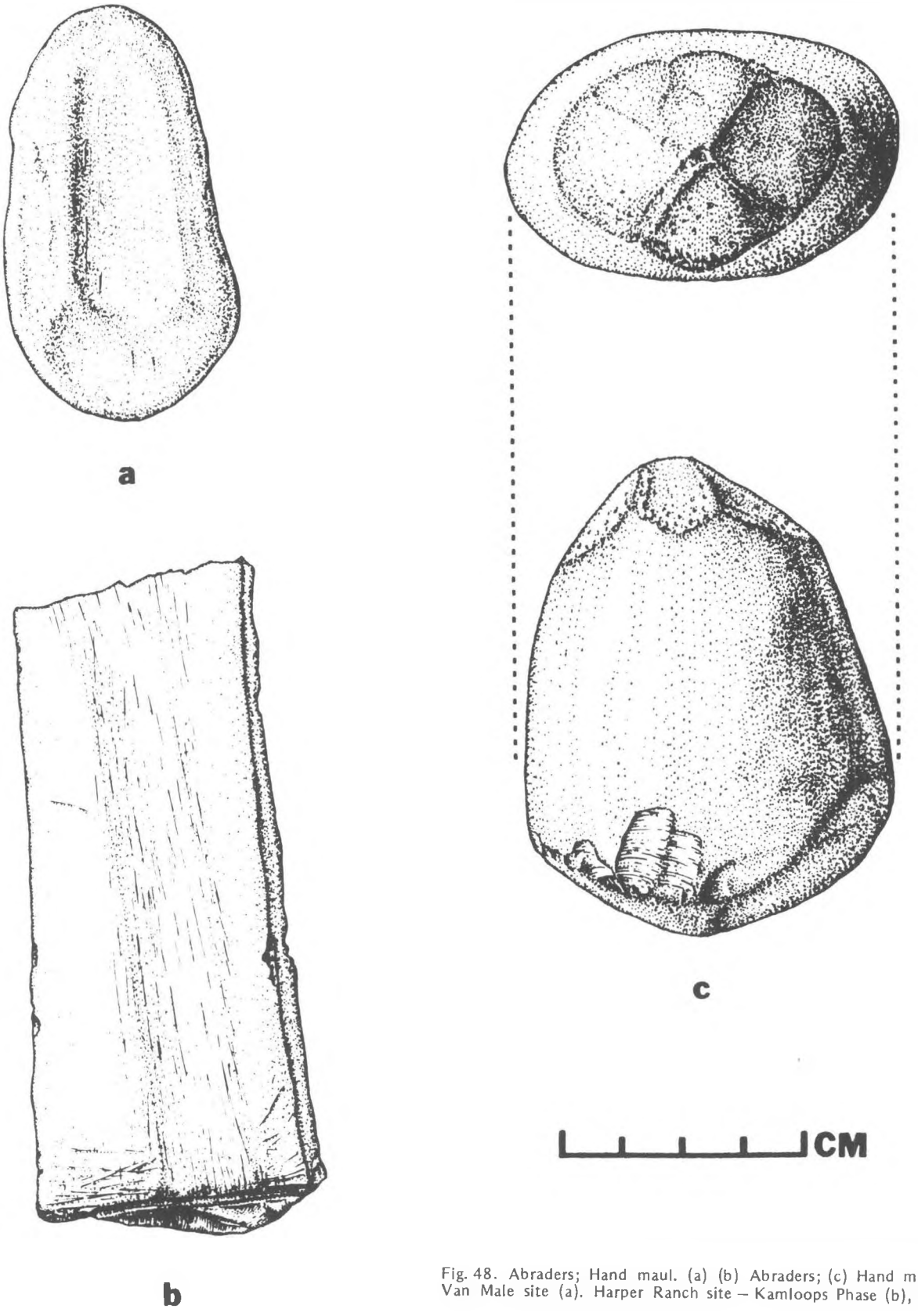


Fig. 48. Abraders; Hand maul. (a) (b) Abraders; (c) Hand maul. Van Male site (a). Harper Ranch site – Kamloops Phase (b), (c).

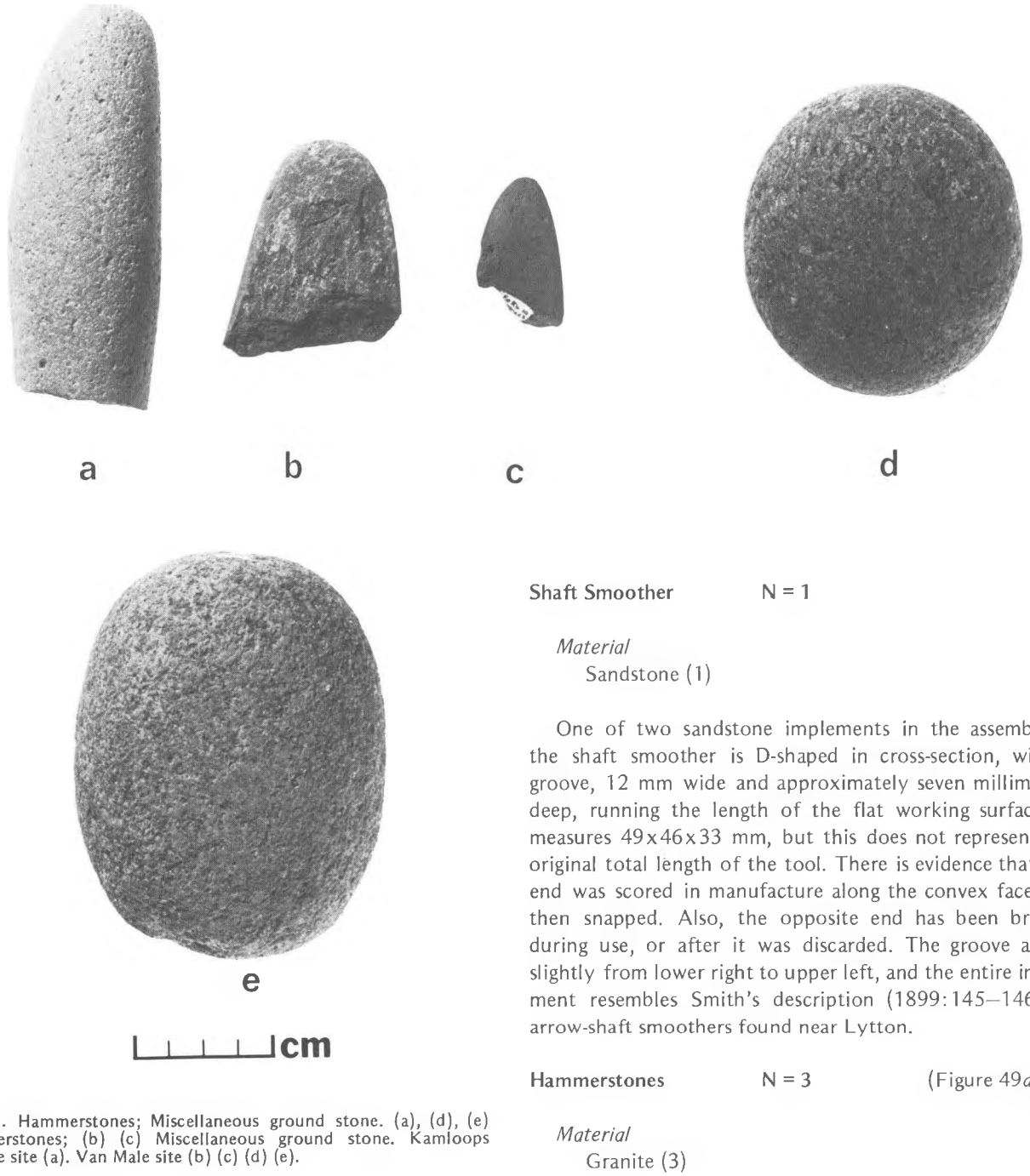


Fig. 49. Hammerstones; Miscellaneous ground stone. (a), (d), (e) Hammerstones; (b) (c) Miscellaneous ground stone. Kamloops Reserve site (a). Van Male site (b) (c) (d) (e).

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.

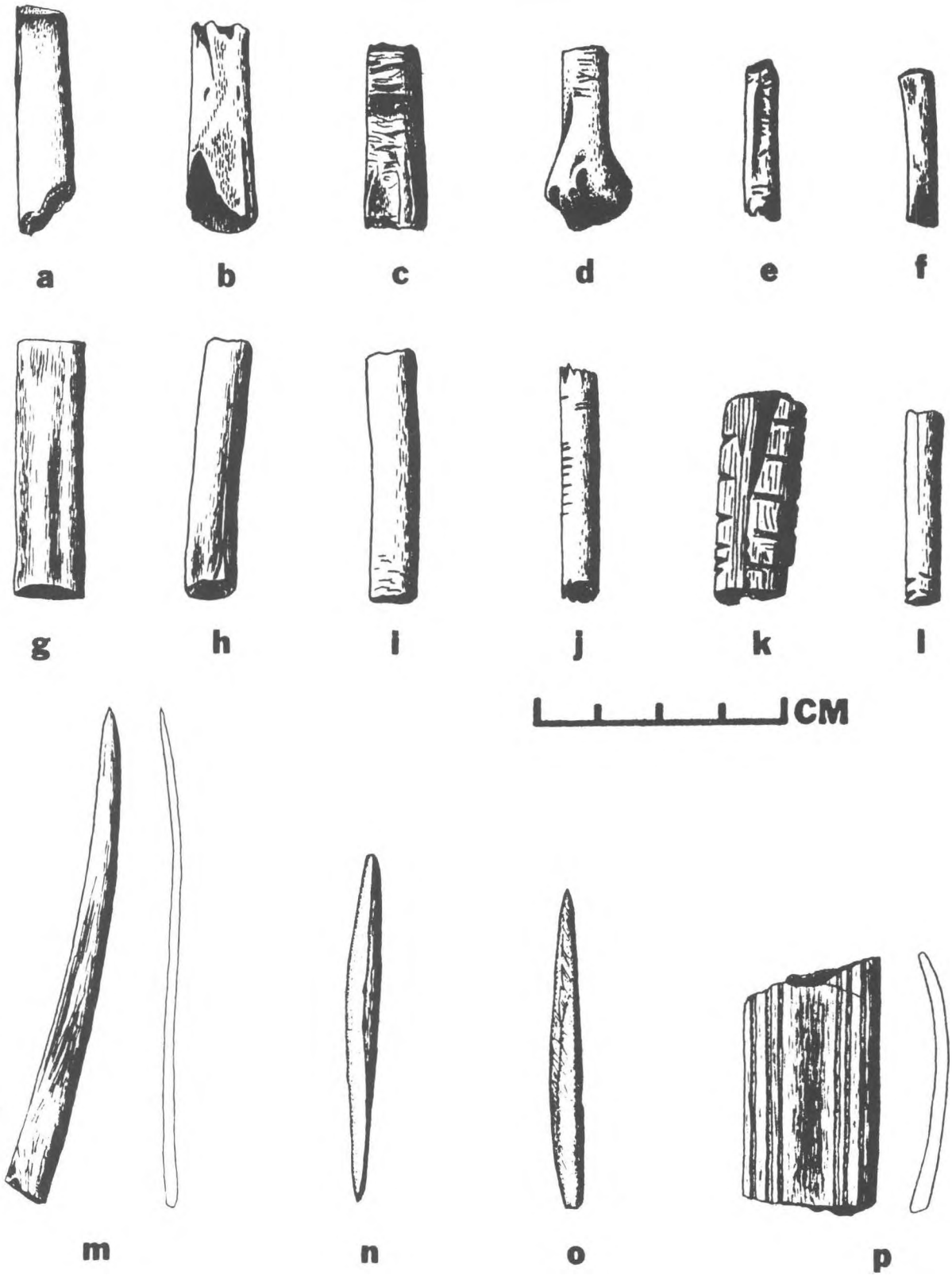


Fig. 50. Bone beads; Bone tubes; Bone point; Composite toggling harpoon valve; Miscellaneous bone. (f)–(l) Bone beads; (a)–(e) Bone tubes; (o) Bone point; (n) Composite toggling harpoon valve; (m) (p) Miscellaneous bone. Harper Ranch site – Kamloops Phase (a)–(p).

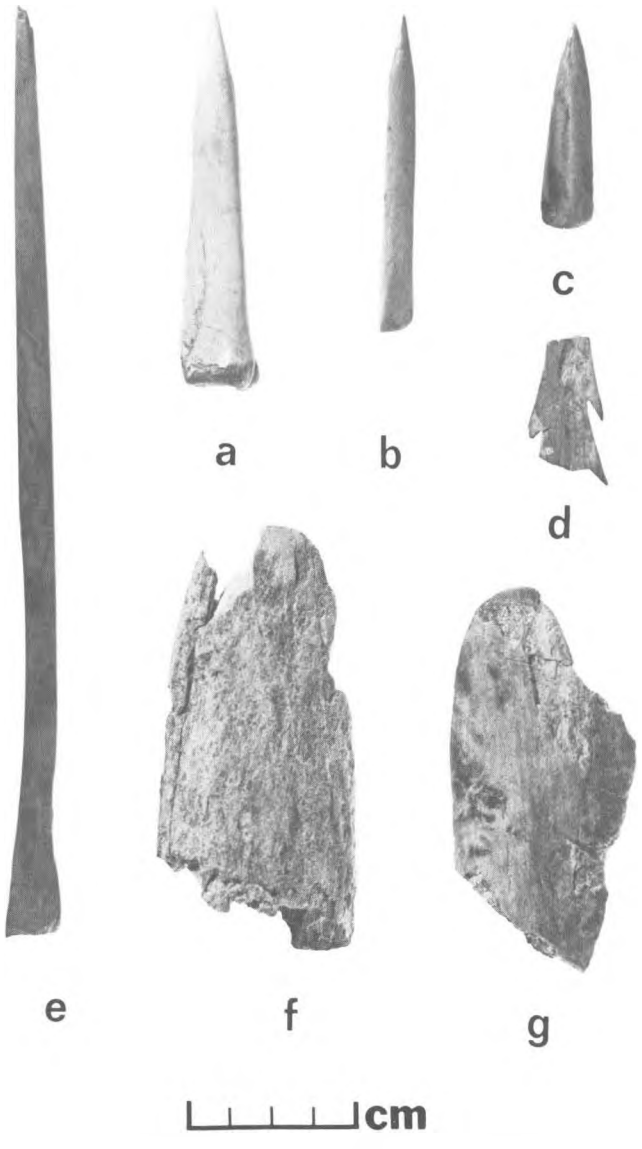


Fig. 51. Bone awl; Antler wedges; Antler projectile. (a) (b) (c) (e) Bone awls; (d) Antler projectile; (f) (g) Antler wedges; Kamloops Reserve site (g); Van Male site (d); Leonard site—Kamloops Phase (c); Harper Ranch site—Thompson Phase (f); Kamloops Phase (a) (b) (e).

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.