Archaic Occupations of the Peiganovitch Site, South-Central Ontario

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The testing and subsequent excavation of a lithic scatter in south-central Ontario revealed one Middle Archaic (Brewerton) period locus and one Late Archaic (Small Point) period locus overlain by a very light distribution of Late Woodland ceramics and early-nineteenth-century Euro-Canadian remains. The focus of this report is the two Archaic period loci at the Peiganovitch site (AhHa-127). These loci are compared with sites from the same time periods in southern Ontario to identify similarities and their cultural affiliation. A comparison of the artifacts between loci revealed striking similarities between assemblages that supposedly date thousands of years apart. This similarity either suggests long-term continuity of assemblages as a result of adaptation to a specific microenvironment, or it raises questions about the established time frame for the projectile point chronology of southern Ontario.

During the archaeological survey for a pipeline corridor in the fall of 1989, a single flake was found in a corn stubble field alongside an unnamed creek valley near the village of Jerseyville, in south-central Ontario (Site 1 in Figure 1). In the early summer of 1990, after numerous additional surface surveys in rather poor conditions, a total of seventeen flakes and a hammerstone were found scattered over a 30 by 25 metre area directly over the proposed pipeline corridor (Figure 2).

The test excavation of this lithic scatter revealed a much higher frequency of artifacts in the topsoil than was suggested on the surface. The subsequent block excavation revealed two spatially and temporally discrete Archaic period loci along with a few Late Woodland ceramics and early-nineteenth-century Euro-Canadian remains. This report will focus on the two Archaic loci. These independent Archaic loci are similar in size with nearly identical artifact type frequencies. The artifacts themselves are also very similar in their sizes and shapes. The only major differences are the projectile point types and the overall spatial distribution of artifacts within each locus.

The 1989-1990 investigations of the Peiganovitch site were carried out on behalf of TransCanada PipeLines Limited. The work formed part of a longer-term archaeological resource assessment of the Kirkwall Loop, a 32.5-km long natural gas pipeline in Hamilton-Wentworth Regional Municipality. The investigations discussed in this report were conducted by Mayer Poulton and Associates Inc. (1989-1991) and by D.R. Poulton & Associates Inc. (1992-1996) (Poulton et al. 1995).

The primary objective of the excavation of the Peiganovitch site was to remove all artifacts from the pipeline corridor before construction. A description of site location, field methodology and features and artifacts is followed by discussion of the cultural affiliation of each locus, intra-site comparisons and an examination of the site in relation to the surrounding environment.

Site Location and Environs

The Peiganovitch site (AhHa-127) is located northeast of Jerseyville, in the Regional Municipality of Hamilton Wentworth (Site 1 in Figure 1). This area is part of the Haldimand Clay Plain (Chapman and Putnam 1984:156-159) and the soil is composed of clay loam topsoil overlying heavy clay subsoil.

The site is located on flat tablelands five metres north of the edge of a wide, deep stream valley containing a tributary that flows into Big Creek. This tributary flows westward and large portions of the valley floor are marshland. This wetland may have been created by the recent construction of a small dam east of the site, but the wide valley floor and the low grade suggest that the current drainage pattern reflects the prehistoric one.

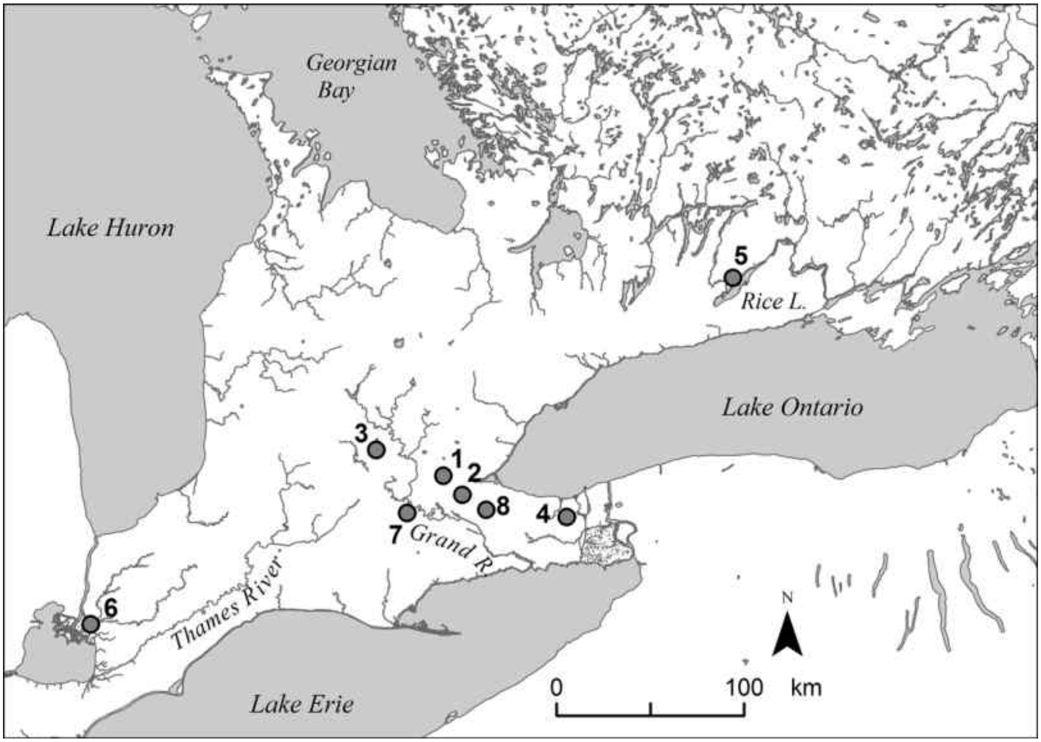

Figure 1. *Map of southern Ontario showing the location of some sites mentioned in the text: Peiganovitch (1); Little Shaver (2); Big Tree (3); Bell (4); McIntyre (5); Crawford Knoll (6); Innes (7); Thistle Hill (8).*

The terrain around the valley consists of low, undulating hills in places dissected by small stream valleys and interspersed by low, wet areas. A glacial moraine is located approximately one kilometer northeast of the site. Before clearing in 1949, this upland area was a hardwood forest composed mainly of sugar maple (Rudy Peiganovitch, personal communication 1990). The field has been ploughed on a regular basis since it was cleared.

Field Methodology

The location of all surface artifacts was recorded by transit from the datum (0N-0W) zeroed on magnetic north (Figure 2). A five metre grid was established over the artifact distribution, with each five metre square identified by the northwest corner stake. Each square was divided into 25 one-metre subsquares, labelled in sequence from west to east, starting in the northwest corner (1) and ending in the southeast corner (25).

Initially, one-metre square test units were excavated at the five metre stakes. Field conditions for the initial controlled surface collection (Figure 2) were relatively poor, with only 17 pieces of debitage and a hammerstone recovered, but the frequency of artifacts recovered from test units was surprisingly high, ranging from zero to 21 flakes. Projectile points, bifaces and utilized flakes were also recovered. The subsequent block excavation centered around the test units with the highest frequency of artifacts, expanding outwards from these focal points.

Each one-metre square was excavated by shovelling earth from the plough-zone through a 6-mm mesh screen to recover artifacts. The subsoil was carefully troweled or shovel-shined to locate features and post moulds. A total of 323 one-metre square units were excavated, 184 from the north locus and 139 from the south. Two subsoil features were also excavated. Plough-zone depth measured at the 31 five-metre square corner stakes ranged from 16 cm to 26 cm with a mean depth of 22 cm.

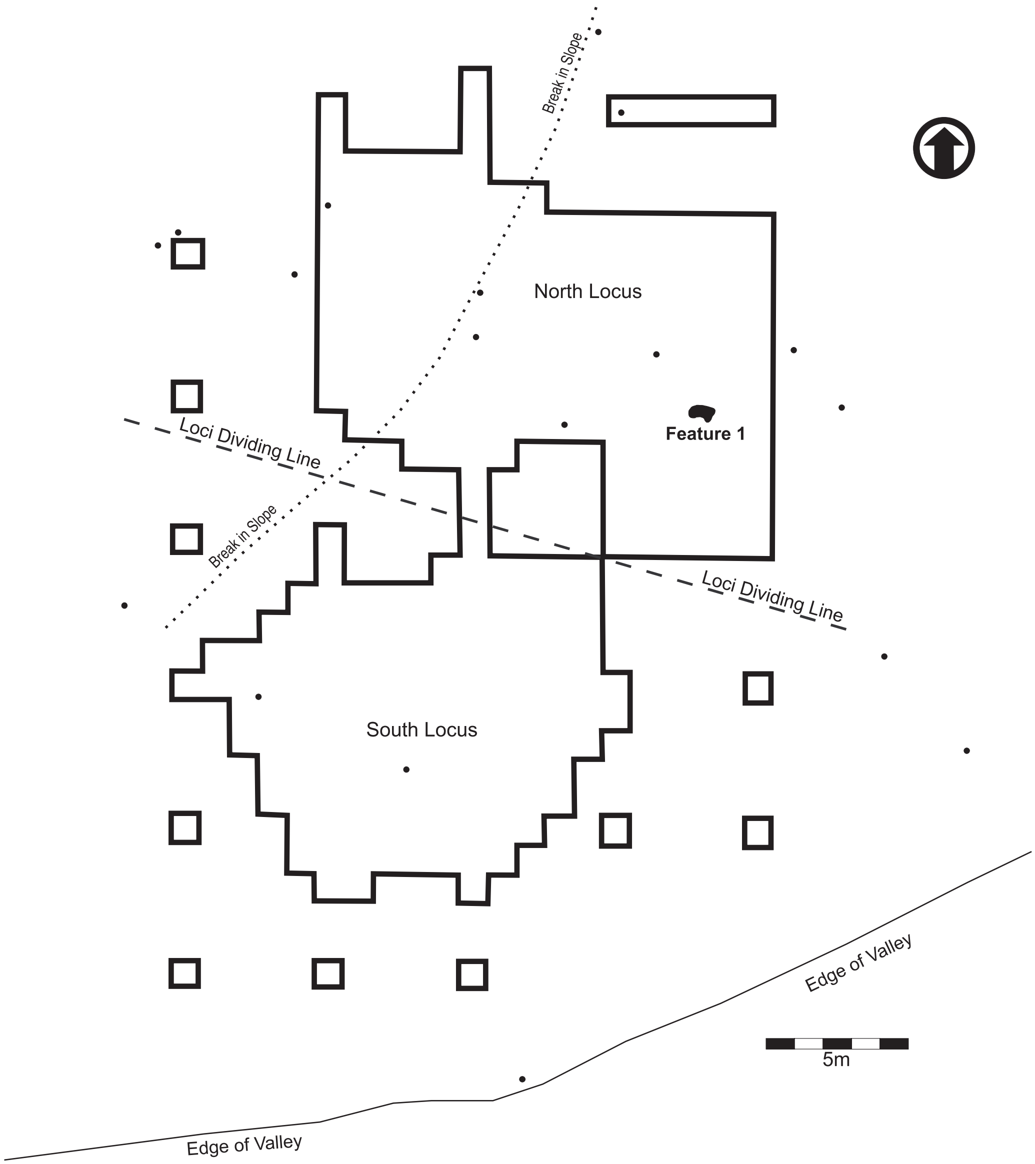

Figure 2. *Surface collection, edge of excavation and location of Feature 1.*

Subsoil Features

Two subsoil anomalies were located during the excavation of the site. One contained charred wood and was determined to be a recent burnt tree root. Fifty-four flakes were recovered from this root.

Feature 1, situated in the north locus (Figures 2 and 3), was an irregularly shaped patch of fire-reddened soil, 170 cm long, 71 cm wide and 22 cm deep. In plan view, it had a grey ash core surrounded by smaller white and brown ash lenses. It was basin-shaped in profile with a 19-cm-deep ash layer surrounded by fire-reddened soil. All soil from this feature was water-screened but no floral, faunal or cultural material was recovered, nor was charcoal for a radiocarbon date. Feature 1 is accepted as being a hearth associated with the north locus.

Figure 3. *Feature 1, plan and profile.*

Artifact Analysis

The prehistoric artifact assemblage from the Peiganovitch site (excluding 108 Euro-Canadian artifacts) is provided in Table 1. For analytical purposes the artifacts from the two loci are discussed separately, with the division indicated by the dotted line on Figure 2.

For individual measurements presented in tables, tools are identified by catalogue number and provenience (by square and one-metre subsquare). All measurements are in millimeters and incomplete measurements are indicated in brackets and missing data by a dash (-). Summary statistics are provided at the bottom of most tables; only complete measurements were used to calculate these statistics.

Raw Material

Onondaga chert dominates the complete flaked lithic assemblage (n=1366 or 81.3 percent); the burnt category is included in this total (n=239 or 14.2 percent). All of the burnt chert was identified as either discoloured and/or potlidded Onondaga chert. The importance of Onondaga chert is unsurprising given the predominance of Onondaga chert at other sites in this area and the proximity of the source of Onondaga chert, north of Lake Erie and south of the Onondaga Escarpment (Eley and von Bitter 1989:17-18). My personal observation (1987-1995) is that Onondaga chert is the preferred material for most prehistoric occupations in the Ancaster area. The second-most frequently used chert at the site is Ancaster chert (n=38 or 2.3 percent), which is found along the Niagara Escarpment in the Hamilton area (Eley and von Bitter 1989:19-20). Also recovered in very low frequencies was Haldimand chert (n=8 or 0.5 percent) from Haldimand County near Brantford (Parker 1986:55), and Kettle Point chert (n=12 or 0.7 percent) from the southeast shore of Lake Huron (Eley and von Bitter 1989:15; Janusas 1984:2). Unknown or unidentified chert (n=18 or 1.1 percent), was also recovered from the south locus.

Cores

There are surprisingly few cores from the Peiganovitch site—only one from each locus (Figure 4). Core 111a, from unit 0N-10W subsquare 22 in the north locus, is a rotated or random core of burnt Onondaga chert 32 mm long, 24 mm wide and 15 mm thick. Rotated or random cores generally have flakes removed from a number of platforms around the perimeter of the core. The second, 106a from unit 20S-10W subsquare 23 in the south locus, is a bipolar core of Onondaga chert 31 mm long, 24 mm wide and

Table 1. *Peiganovitch site artifact inventory.*

			North Locus		South Locus	
		Type	**Freq.**	**%**	**Freq.**	**%**
Cores			1	1.6	1	1.7
Unifacial	Utilized Flakes		32	51.6	28	47.5
	Scrapers		1	1.6	2	3.4
Bifacial	Wedges		4	6.5	0	0
	Drills		3	4.8	3	5.1
	Bifaces	Rough	2	3.2	5	8.5
		Blank	3	4.8	3	5.1
		Finished	6	11.3	6	10.2
		Unknown	0	0	3	5.1
	Knife		0	0	1	1.7
	Projectile Points		10	12.9	7	11.9
Rough Stone Tools	Hammerstone		1	1.6	0	0
Total			**62**	**99.9%**	**59**	**100.2**
Ceramics			6		2	
Debitage			638		1033	

19 mm thick. Bipolar cores have bifacial bashing on opposing edges indicated by hinge and step fractures.

Debitage

Debitage frequency ranged from zero to 15 per one-metre unit in the north locus for a total of 638. In the south locus, debitage ranged from zero to 21 per one-metre unit for a total of 1033 (Figure 5). The relation between debitage type and chert type is presented in Table 2. Debitage types are defined as shatter (blocky waste material), primary decortication (dorsal surface is completely covered with cortex), secondary decortication (dorsal surface is partially covered with cortex), primary (large flakes removed to shape a core), biface thinning (smaller flakes removed to shape biface preforms or tools), and edge trimming (small flakes removed in forming and sharpening bifacial tools). Only flakes with a striking platform were typed to ensure that the distal ends of broken flakes, which are listed as fragments in Table 2, would not be counted as separate flakes. Only typed flakes were used for the totals and percentages in Table 2 and in the flake distribution map (Figure 5).

The raw material for the majority of debitage in both loci, including the burnt material, is Onondaga chert. Combined, the Onondaga and Burnt columns in Table 2 compose 96 percent of the debitage from each locus. There is, however, a slightly higher percentage of burnt chert in the north locus (17.9) compared to the south locus (12.0). If flake fragments are included, this discrepancy increases to 22.1 percent for the north locus and 14.1 percent for the south locus. For the other material types, there are minor frequency differences between loci: the south locus contains higher frequencies of Ancaster chert whereas the north locus contains higher frequencies of Kettle Point and Haldimand chert. The south locus also contains a quantity of unknown chert, accounting for one percent of the material in the south locus.

There are broadly similar percentages of flake types recovered from each locus. The north locus has higher percentages of shatter and primary flakes, whereas the south locus has more biface thinning and secondary retouch flakes. This suggests that there was greater emphasis on earlier stages in the reduction sequence during occupation of the north locus and later stages in the reduction sequence in the south locus. The majority of the flakes from the north locus were recovered in the western part of the excavated area, on a slight downward slope (Figure 5). Contrary to this, most of the debitage from the south locus was recovered from the centre of the excavated area (Figure 5). Burnt chert was distributed fairly evenly throughout the excavated area. The raw material used and the flake types present between loci are broadly similar.

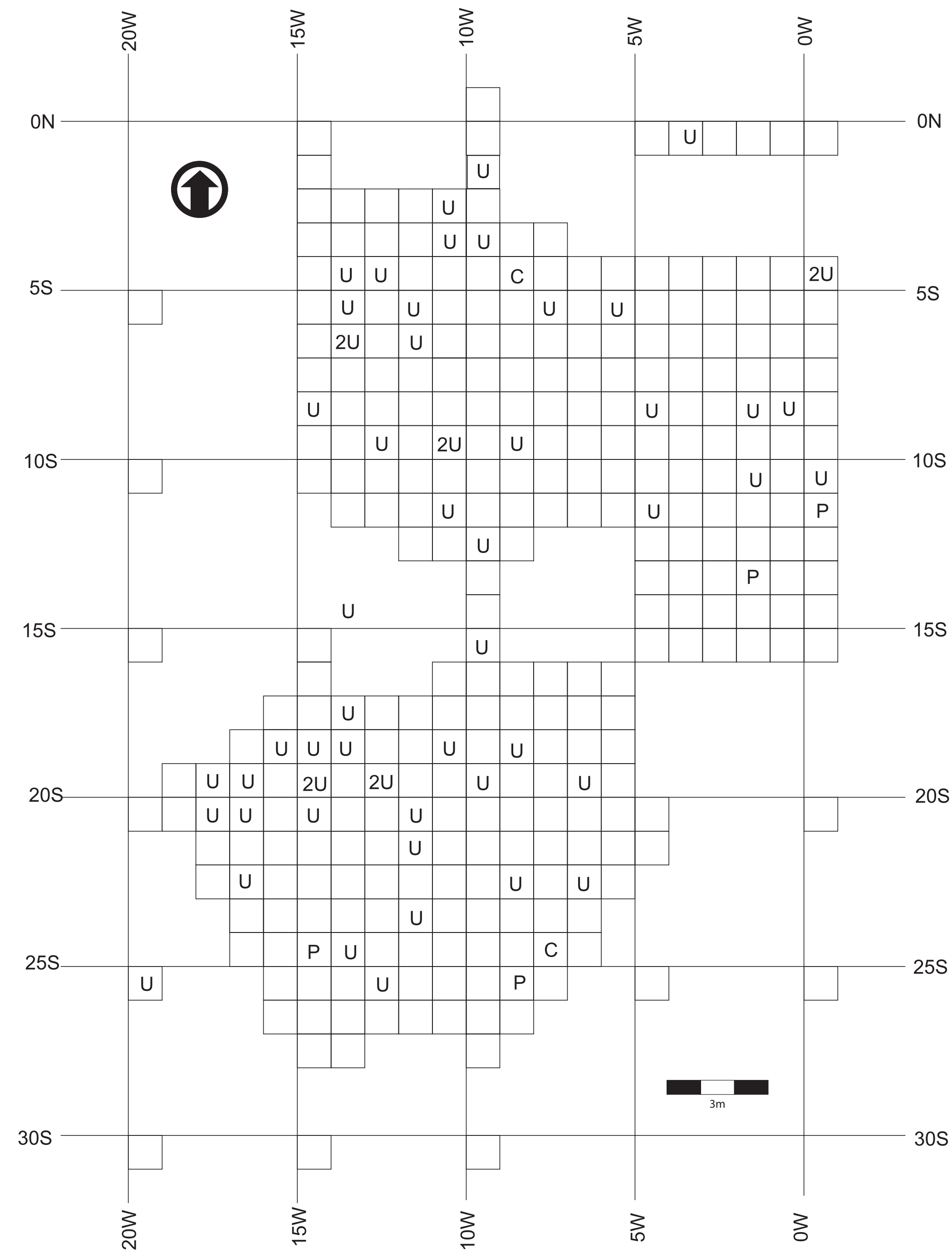

Figure 4. *Distribution of cores (C), utilized flakes (U) and pottery (P).*

Table 2. *Peiganovitch flake type frequency by material.*

A) North Locus								
Flake Type	**O**	**B**	**A**	**KP**	**H**	**U**	**Total**	**Percent**
Shatter	30	31	3	1	2	0	67	10.5
Primary Decortication	7	1	0	0	1	0	9	1.5
Secondary Decortication	10	3	0	0	0	0	13	2.0
Platform Prep.	3	1	1	0	0	0	5	1.0
Primary	168	29	2	2	3	0	204	32.0
Biface Thinning	220	41	2	5	1	0	269	42.0
Secondary Retouch	62	8	1	0	0	0	71	11.0
Fragment*	241	106	2	4	5	0	348	
Total	**500**	**114**	**9**	**8**	**7**	**0**	**638**	**100**
Percent	**78.4**	**17.9**	**1.4**	**1.3**	**1.1**	**0**	**100.1**	

B) South Locus								
Flake Type	**O**	**B**	**A**	**KP**	**H**	**U**	**Total**	**Percent**
Shatter	25	30	5	0	0	2	62	5.9
Primary Decortication	8	0	2	0	0	1	11	1.0
Secondary Decortication	35	3	3	0	0	0	41	3.9
Platform Prep.	2	0	0	0	1	0	3	0.3
Primary	205	25	13	2	0	3	248	23.8
Biface Thinning	456	53	3	2	0	2	516	49.5
Secondary Retouch	135	14	3	0	0	0	152	14.6
Fragment*	455	103	11	2	0	9	580	
Total	**866**	**125**	**29**	**4**	**1**	**18**	**1043**	**99.0**
Percent	**84.0**	**12.0**	**3.0**	**0.5**	**0.1**	**1.0**	**100.6**	

*Fragments are excluded from the total and percentage calculations.
O=Onondaga, B=Burnt Onondaga, A=Ancaster, KP=Kettle Point, H=Haldimand, U=Unknown

Utilized Flakes

The utilized flakes recovered from Peiganovitch were identified macroscopically by examining lateral edges for continuous scarring or micro-wear. This methodology has recently been questioned (Shen 1999). The analysis of the Peiganovitch assemblage, completed prior to this publication, nevertheless reveals some useful patterning. The utilized flakes are described in Table 3 by provenience, flake type, material, size, wear location (under locale), shape and length of utilization. The same flake types used to classify debitage are used to classify utilized flakes. Six flakes had more than one utilized edge. For these specimens, the overall flake measurements are reported only for the first utilized edge, but the wear data are included for each utilized edge. None of these items were formal tools, but rather simply utilized flakes with some use-wear scars. For this analysis, formal tools have flake scars over 2 mm long.

Of the 60 utilized flakes, 32 were recovered from the north locus and 28 from the south locus (Table 1, Figure 4). Six specimens have more than one utilized edge but the majority have only one utilized edge, suggesting that they may have only been used once and then discarded. Six of the utilized flakes from the north locus could be typed, including one blade flake (#29), three gravers (#151, 206, and 250), one spokeshave (#487) and one scraper flake (#497). Three utilized flakes from the south locus could be typed, including one scraper flake (#127) and two spokeshaves (#179 and 331) (for definitions, see Woodley 1990:19). These are not formal tools, but rather flakes with limited use-wear, shaped similar to the formal tool types.

Comparable to the debitage sample, the majority of utilized flakes are of Onondaga chert. Only 6.2 percent of the utilized flakes from the north locus and 3.6 percent from the south locus are of Ancaster chert. These percentages are slightly higher than the percentages of Ancaster chert for the entire debitage assemblage (Table 2). The size of utilized flakes differs between areas, as exhibited by mean length, width and thickness values (Table 3). In general, the utilized flakes from the south locus

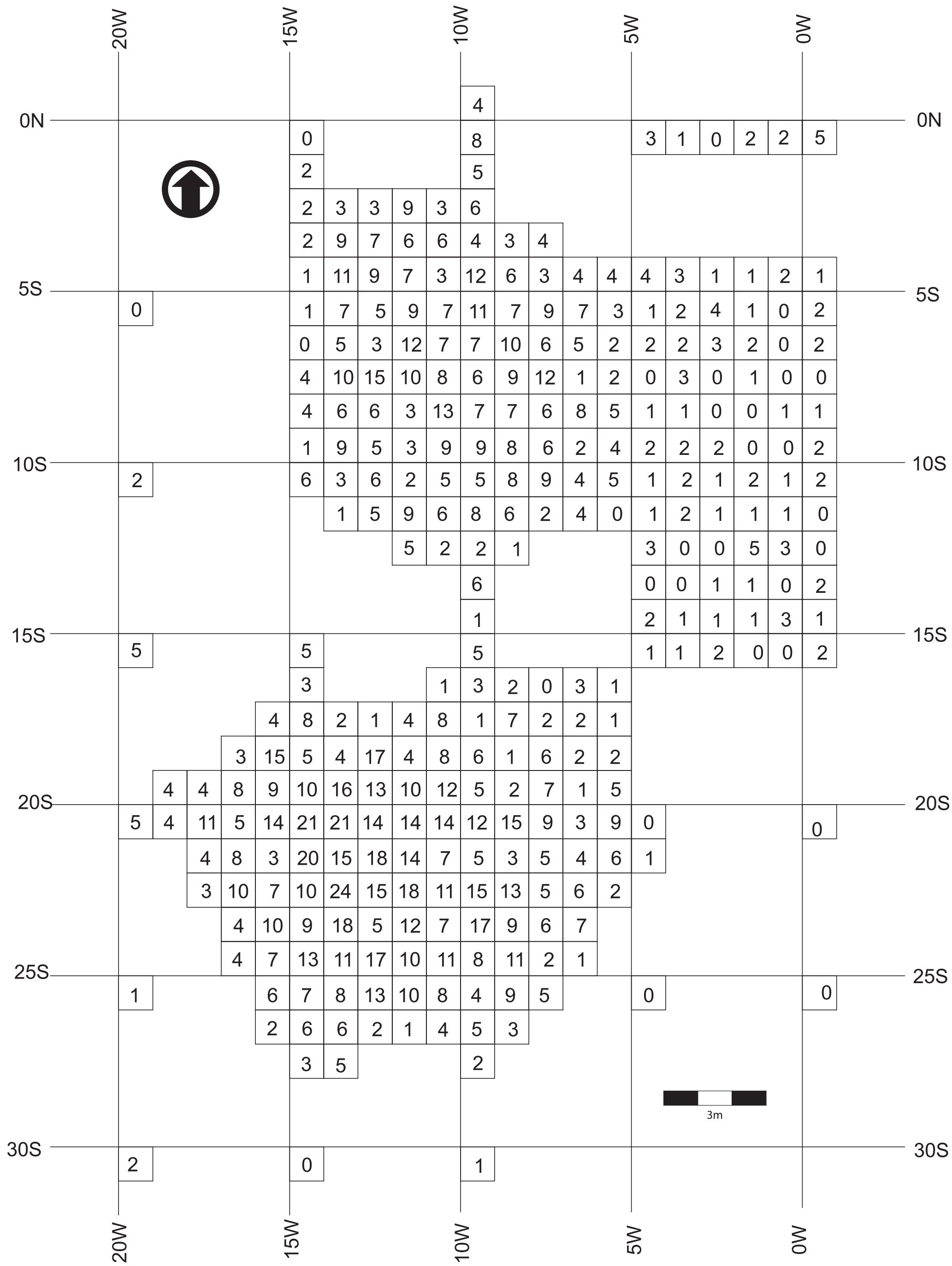

Figure 5. *Flake count per one metre square.*

Table 3. *Peiganovitch utilized flake attributes (measurements in mm).*

A) North Locus

Cat. No.	Unit	Sub-Square	Flake	Mat.	Length	Width	Thick	Locale*	Shape	Length of Wear
5	surface		primary	O	16.8	20.2	4.5	d/d	str	18.6
29	surface		primary	O	(17.9)	15.2	3.0	r l/d	str	(12.5)
53	10S-0W	1	primary	O	26.4	27.0	3.7	d/v	str	22.6
66	0N-10W	6	primary	O	(20.6)	(10.3)	4.6	r l/d	str	14.8
112	10S-15W	22	primary	O	(35.7)	(20.6)	4.2	r l/v	str	15.3
129	5S-15W	4	bif. thin.	O	(16.1)	13.4	1.8	r l/d	str	11.9
151	0N-15W	23	primary	O	19.2	25.4	4.5	d/d	str	11.8
151								l l/d	str	19.5
153	0N-15W	20	prim.dec.	O	36.3	31.5	12.3	d/v	str	19.4
164	5S-15W	2	primary	B	14.2	13.3	3.6	l l/d	str	9.6
169	5S-5W	16	fragment	O	(15.2)	12.7	2.3	l l/v	str	19.4
206	0N-0W	21	sec. dec.	O	19.9	22.0	3.6	d/d	str	18.7
206								l l/d	str	7.2
207	0N-0W	21	bif. thin.	O	(16.2)	11.5	3.3	l l/d	conv	(10.4)
250	10S-5W	4	bif. thin.	O	33.8	19.1	5.3	r l/d	point	18.8
250								d/d	conv	10.3
250								l l/v	str	10.9
279	0N-10W	16	primary	O	14.6	15.1	3.8	p/d	conv	7.2
289	5S-15W	25	primary	O	21.0	(19.4)	4.0	l l/v	str	11.9
290	5S-15W	25	bif. thin	O	16.7	16.5	1.4	d/d	str	7.3
304	5S-15W	9	sec. dec.	O	31.0	(24.9)	12.0	d/d	str	16.8
309a	5S-10W	3	primary	O	20.1	27.7	8.0	d/v	str	14.7
312	10S-10W	11	shatter	A	13.5	9.8	6.1	-/-	conv	9.7
333	0N-5W	2	primary	O	(38.5)	22.7	3.0	r l/d	conv	19.6
341	10S-15W	10	prim.dec.	cortex	(15.9)	(19.5)	2.6	d/d	conv	12.8
361	5S-15W	23	primary	A	30.4	25.2	4.5	d/d	str	11.4
394	0N-15W	15	primary	O	(17.3)	(9.1)	3.2	l l/v	str	7.5
414	5S-15W	16	bif. thin.	O	(20.3)	18.3	2.5	r l/v	conv	(9.6)
455	5S-10W	5	primary	O	-	(16.6)	(5.0)	d/d	conv	(16.3)
477	5S-5W	20	primary	O	26.9	26.5	7.0	r l/d	str	18.9
487	0N-15W	22	primary	O	10.7	19.2	3.1	d/d	conc	10.0
496	5S-15W	7	primary	O	-	-	6.6	-/v	str	(7.8)
497	5S-15W	7	primary	O	(14.5)	(16.8)	(5.7)	d/d	conv	(14.5)
504	10S-5W	6	primary	O	(30.4)	(29.9)	4.8	l l/d	str	15.6
526	5S-5W	19	frag	O	(20.9)	(21.1)	3.6	l l/v	str	16.9
542	5S-10W	22	primary	O	29.0	14.2	4.2	l l/d	str	25.5
				Mean	22.4	19.4	4.6			14.5
				sd	7.56	6.00	2.49			4.86
				n	17	21	30			30

* d = distal, p = proximal, ll = left lateral, and rl = right lateral; after the slash, d = dorsal and v = ventral
O=Onondaga, B=Burnt Onondaga, A=Ancaster

tend to be larger with greater variability indicated by the standard deviation for most measurements. At 14.5 mm and 14.8 mm respectively, the mean utilized edge length is comparable between loci (Table 3). Although there is only minor variability between loci, it suggests that there is a difference between the assemblages.

Table 4 presents a comparison of the data for utilized flakes from each locus. There are similar percentages of specific flake types from each locus. There is a preference for utilized flakes to be primary flakes (59.4 percent and 57.1 percent from the north and south loci respectively), or biface thinning flakes (15.6 percent and 17.8 percent respectively). There are only minor differences between the shape of wear of utilized flakes between the two loci, with the majority of utilized edges being straight or convex. There is a consistent

Table 3 (cont.'d). *Peiganovitch utilized flake attributes (measurements in mm).*

B) South Locus

Cat. No.	Unit	Sub-Square	Flake	Mat.	Length	Width	Thick	Locale*	Shape	Length of Wear
24	surface		bif. thin.	O	38.0	31.0	6.0	p/d	conv	18.5
24								r l/d	str	24.9
37	20S-15W	4	primary	O	36.0	44.9	11.7	l l/d	str	25.2
37								d/d	str	19.0
57	15S-10W	1	primary	O	(23.2)	17.9	3.7	r l/d	conv	9.1
91	15S-20W	24	frag.	O	-	-	2.6	-/d	str	(15.5)
118	15S-20W	20	primary	O	(25.4)	(23.5)	4.3	r l/d	str	(11.4)
127	20S-15W	9	primary	O	31.6	19.9	3.7	d/d	conv	15.7
132	25S-20W	1	bif. thin.	O	18.4	22.3	2.2	l l/d+v	str	17.1
156	15S-20W	23	frag.	O	-	-	3.1	-/d	str	(11.2)
179	15S-15W	17	bif. thin.	O	23.5	22.3	3.9	r l/v	conc	9.8
182	20S-15W	1	primary	O	29.3	30.3	5.9	r l/d	str	10.0
193	15S-15W	16	primary	O	18.5	22.0	4.1	l l/d	irreg	(9.5)
217	20S-20W	3	primary	O	25.0	18.2	3.1	r l/d+v	str	15.0
270	15S-15W	21	sec. dec.	O	(30.6)	16.5	5.7	l l/d	str	10.7
271	15S-15W	21	sec. dec.	O	(14.1)	(15.0)	3.0	r l/d	str	(8.6)
277	20S-15W	22	primary	O	42.5	59.5	9.5	d/d	str	12.3
297	20S-15W	19	primary	O	(18.2)	16.6	4.3	r l/d	str	10.2
314	20S-20W	14	primary	O	33.6	8.4	6.9	l l/d	str	14.7
318	15S-10W	21	frag.	O	-	-	(1.9)	-/-	str	(9.5)
320	25S-15W	3	prim. dec.	cortex	50.4	26.3	5.8	l l/v	str	13.1
331	20S-20W	4	primary	A	(35.4)	(13.9)	5.6	l l/d	conc	11.2
352	15S-10W	17	primary	O	(24.8)	(25.0)	5.8	r l/v	str	12.7
430	15S-15W	12	primary	O	32.0	13.7	5.4	p/d	conc	7.6
465	15S-10W	24	primary	O	31.6	25.5	5.8	l l/d	conv	20.2
506	15S-15W	20	bif thin	O	23.4	34.5	12.0	d/d	str	16.9
511	20S-10W	12	bif. thin.	B	(17.0)	14.3	3.1	d/d	str	7.7
511								r l/d	str	(8.1)
536a	15S-15W	23	primary	O	(23.2)	26.9	4.8	d/v	str	21.8
536b	15S-15W	23	prim. dec.	cortex	31.3	29.1	3.6	l l/v	str	10.9
540	20S-10W	14	primary	O	(32.3)	18.2	6.7	r l/v	conv	20.9
				Mean	31.0	24.7	5.3			14.8
				sd	8.4	11.16	2.44			5.12
				n	15	21	27			24

* d = distal, p = proximal, ll = left lateral, and rl = right lateral; after the slash, d = dorsal and v = ventral
O=Onondaga, B=Burnt Onondaga

preference for utilization of the dorsal surface between loci and there is also some consistency between loci for utilized edge (Table 4).

Scrapers

Three end scrapers were recovered, one from the north locus and two from the south (Table 5, Figure 6). All three are made of Onondaga chert and all are made from secondary decortication flakes (Figure 7:d-f). Scraper #474 has wear on both lateral edges, 17 mm on the left and 20 mm on the right.

Wedges

Four wedges were recovered from the north locus (Figure 7:a-c), all from within or adjacent to unit 5S-15W (Figure 6). Metrics are provided in Table 6, with the length measured between the parallel bashed edges. One specimen (#86) is recycled from a biface fragment. The wedges are all similar in size and shape, with some variability in width. All wedges appear to have been broken and then reused. No wedges were recovered from the south locus. As noted in a previous analysis (Woodley 1996a), wedges are similar in overall shape but smaller than bipolar cores.

Table 4. *Peiganovitch utilized flake summary.*

	North Locus N	North Locus %	South Locus N	South Locus %
Flake Type				
Shatter	1	3.1	-	-
Primary Decort.	3	9.4	2	7.1
Secondary Decort.	2	3.6	3	10.7
Primary	19	59.4	16	57.1
Biface Thinning	5	15.6	5	17.8
Fragment	2	6.3	2	7.1
Total	**32**	**100.1**	**28**	**99.8**
Shape of Wear				
Straight	24	68.6	22	71.0
Convex	9	24.7	5	16.1
Concave	1	2.9	3	9.7
Pointed	1	2.9	1	3.2
Irregular	-	-	1	3.2
Total	**35**	**99.1**	**31**	**100.0**
Wear Location				
Dorsal Surface	24	69	22	73
Ventral Surface	11	31	6	20
Dorsal and Ventral	-	-	2	7
Total	**35**	**100.0**	**30**	**100.0**
Distal End	14	41	6	21
Left Lateral Edge	11	32	9	32
Right Lateral Edge	8	24	11	39
Proximal End	1	3	2	7
Total	**34**	**100.0**	**28**	**100.0**

Table 5. *Peiganovitch scrapers.*

	North Locus	South Locus	
Cat. No.	138	236	474
Unit	5S-15W	Surface	25S-10W
SS	20		7
Mat	O	O	O
Length	38.7+	29.9	33.3
Width	25.2+	38.0	25.5
Thickness	10.0	10.3	7.9
Bit	80°	80°	60°
Wear Length	13.0	32.8	24.8

O=Onondaga. All specimens formed on secondary decortification flakes.

Drills

Six drills and drill fragments were recovered (Table 7, Figure 6): three bases from the north locus (Figure 8:a-c); and three small tip fragments from the south locus (Figure 8:d-f). None of these fragments mends. All are made of Onondaga chert. Drill #436 from the north locus is a re-worked, basally thinned, corner notched projectile point with a 21.1 mm wide base and a neck width of 14.9 mm. The other two specimens from the north locus are both expanding base drills. Only tip fragments were recovered from the south locus; presumably the corresponding bases were re-tipped and removed from the site. The broken end of one tip (#224) is rounded and smoothed, presumably from use after it was broken.

Bifaces

Bifaces have been divided into three types based on the amount and manner of bifacial thinning. Rough bifaces are coarsely shaped; biface blanks have been subject to more bifacial thinning; and finished bifaces are essentially un-notched point blanks. "Unknown" is assigned to an artifact that is too fragmented to type. The bifaces are described in Table 8 and their distribution is shown in Figure 9. Because of the limited number and highly fragmentary nature of the bifaces, no summary statistics are provided.

All eleven bifaces from the north locus are of Onondaga chert and most are small fragments (Figure 10:a-e). The majority (n=6) are finished bifaces and #79 may be a projectile point tip fragment. One biface (#413) was made from a large primary flake with a 45 degree angle on the distal end, suggesting it was intended to be used as a scraper.

Table 6. *Peiganovitch wedges.*

Cat.No.	Unit	SS	Material	Length	Width	Thick	Comment
12	Surface		O	(25.7)	14.4	7.3	burnt and broken
86	5S-15W	10	O	21.4	28.4	6.3	recycled biface fragment
417	5S-15W	21	O	20.8	17.8	7.0	broken and then reused
508	5S-15W	12	O	19.5	22.6	6.6	broken and then reused
			Mean	20.6	20.8	6.8	
			sd	0.79	5.27	0.38	

O=Onondaga

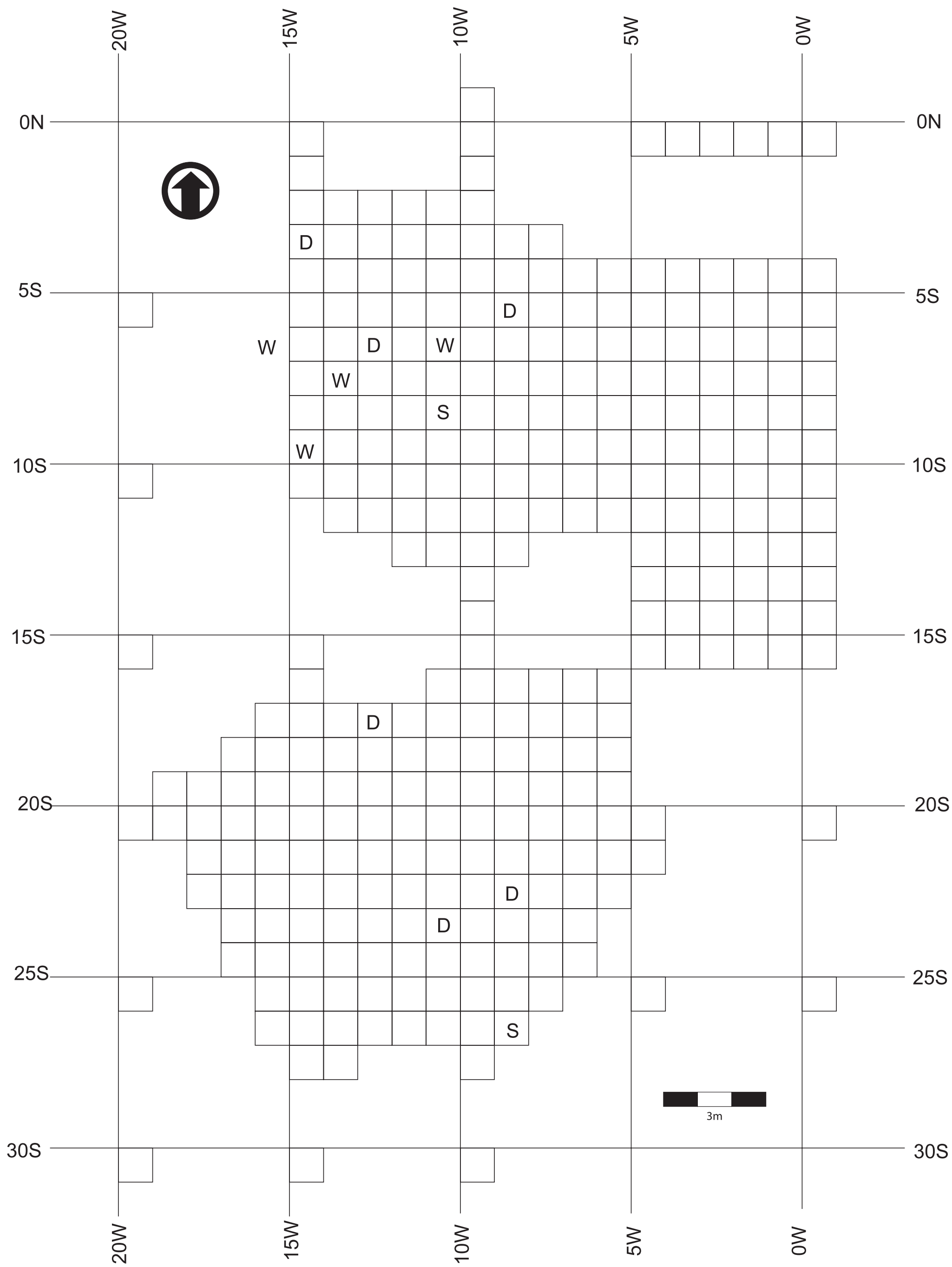

Figure 6. *Distribution of scrapers (S), wedges (W) and drills (D).*

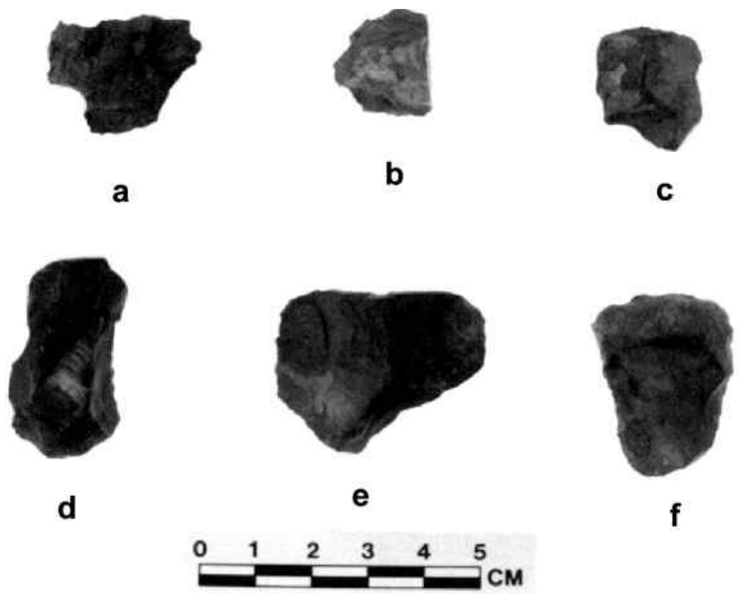

Figure 7. *Wedges (top row) and scrapers (bottom row).*

Table 7. *Peiganovitch drills.*

Cat. No.	Unit	SS	Mat	Length	Width	Thick	Comment
A) North Locus							
124	5S-15W	8	O	(46.7)	13.7	7.3	expanding base
307	10S-10W	2	O	(22.5)	16.8	7.8	expanding base
436	0N-15W	16	O	34.6	21.1	7.2	re-worked point
B) South Locus							
177	15S-15W	13	O	(19.0)	(8.4)	(4.6)	tip fragment
224	20S-15W	20	O	(21.7)	7.8	4.9	tip fragment
512	20S-10W	12	O	(28.8)	10.4	8.3	tip fragment

O=Onondaga

More bifaces (n=17) were recovered from the south locus than the north. All except two specimens are of Onondaga chert and two of the Onondaga artifacts are burnt. Similar to bifaces from the north locus, many in the south locus are small fragments (Figure 10:f-g). Two biface blank fragments (#160a and 42a) are broken along the medial axis and two rough biface fragments (#108a and 457) appear to have been broken during the manufacturing process. As well, two finished bifaces (#392 and 483) may be point blanks and one (#392) has lateral edge wear suggesting it was used as a knife.

Knife

A single groundstone knife fragment was recovered from unit 15S-20W subsquare 19 of the south locus. It is made of a green siliceous material and is 63 mm long, 41 mm wide and 10 mm thick with wear on one lateral edge.

Projectile Points

Four complete projectile points and 13 fragments were recovered from the Peiganovitch site. The fragments range from nearly complete points with missing basal tangs or tips to small tip or base fragments. Table 9 provides measurements and their distribution is shown in Figure 9.

The projectile points from the north locus (Figure 11) are either corner or side notched. Most have excurvate blade edges, are basally thinned and some have light basal grinding. Based on their form, the north locus projectiles are all Middle Archaic points. Brewerton corner- or side-notched

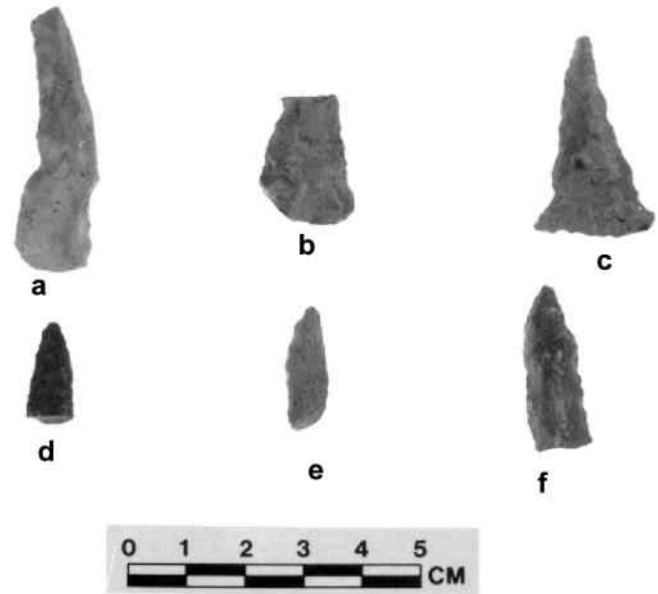

Figure 8. *Drills from the north (top row) and south (bottom row) loci.*

Table 8. *Peiganovitch bifaces.*

A) North Locus

Cat. No.	Unit	SS	Type	Mat.	Length	Width	Thickness
283a	15S-5W	2	Rough	O	(27.4)	(19.8)	(10.9)
349a	5S-15W	22	Rough	O	(21.6)	(33.2)	15.4
2	surf coll.		Blank	O	(39.9)	(19.9)	(7.9)
413	5S-15W	16	Blank	O	38.9	29.3	12.1
545	5S-15W	19	Blank	O	(27.3)	(19.1)	6.3
79	15S-0W	1	Finished	O	(23.5)	(21.9)	6.8
142	5S-15W	15	Finished	O	(17.3)	(9.1)	4.1
360	5S-15W	23	Finished	O	(22.7)	(14.1)	(5.6)
363	5S-5W	24	Finished	O	(22.0)	(7.2)	5.9
386	5S-15W	11	Finished	O	(22.4)	(23.2)	7.3
538	5S-15W	18	Finished	O	(22.8)	(8.1)	10.6

B) South Locus

Cat. No.	Unit	SS	Type	Mat.	Length	Width	Thickness
42a	20S-15W	25	Rough	O	41.6	(17.5)	14.6
160a	25S-15W	7	Rough	A	51.3	(21.0)	16.6
181	20S-15W	1	Rough	O	(41.3)	36.1	13.8
255a	25S-15W	5	Rough	O	(35.4)	(11.6)	(10.4)
330a	20S-20W	4	Rough	O	(14.8)	(29.3)	(13.6)
48	20S-10W	16	Blank	A	(21.2)	29.9	7.3
108a	15S-10W	18	Blank	O	(29.8)	(30.2)	(11.3)
457	15S-10W	7	Blank	O	(29.4)	23.6	8.6
286a	20S-15W	17	Finished	O	(19.4)	(11.2)	(7.1)
295a	20S-15W	5	Finished	B	(21.9)	(11.3)	(6.3)
313a	20S-20W	14	Finished	O	(19.0)	(15.0)	(3.2)
392	15S-10W	14	Finished	O	42.6	20.9	6.9
483	20S-10W	4	Finished	O	31.3	24.7	6.1
491	15S-15W	14	Finished	O	(37.5)	(23.4)	6.7
178a	15S-15W	17	unknown	O	(14.7)	(9.3)	(4.8)
298b	25S-15W	3	unknown	O	(24.8)	(13.0)	(6.9)
411	20S-10W	5	unknown	B	(7.3)	(14.8)	(5.2)

O=Onondaga, B=Burnt Onondaga, A=Ancaster

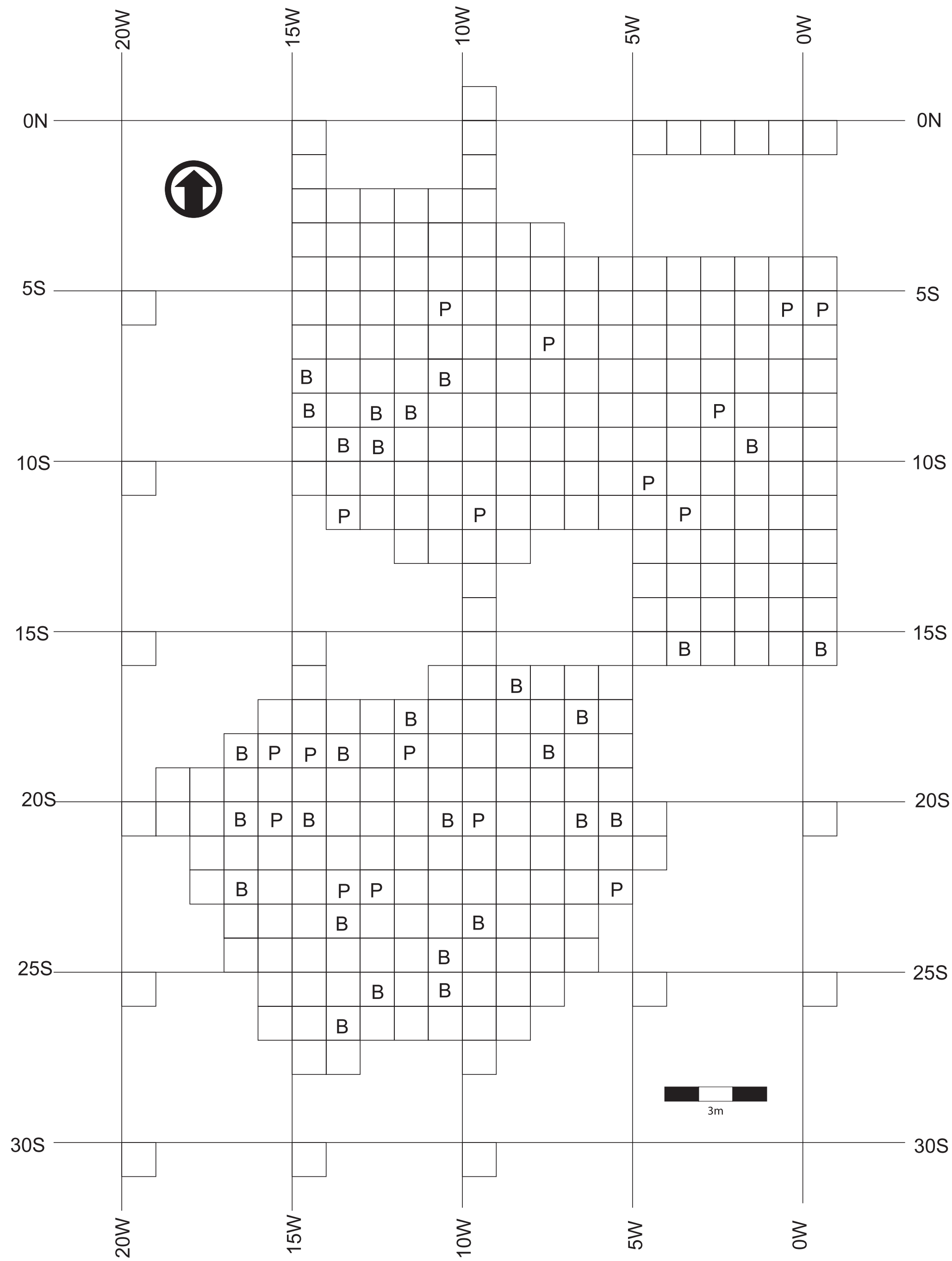

Figure 9. *Distribution of bifaces (B) and projectile points (P).*

Table 9. *Peiganovitch projectile points.*

Cat. No.	Unit	SS	Mat	L	W	T	Hafting Element	Base W	Neck W	Shoulder H
A) North Locus										
68	10S-5W	1	O	(40.2)	-	9.1	side notch	(16.6)	16.1	10.1
70	5S-0W	1	O	(39.7)	31.7	8.3	corner notch	-	18.5	-
98	5S-5W	5	O	-	28.7	6.3	corner notch	(19.0)	17.9	9.3
114	5S-5W	18	O	(38.8)	(26.8)	6.2	side notch	-	-	-
168	10S-10W	6	O	(41.1)	28.9	8.1	corner notch	-	17.1	8.3
228	5S-15W	5	O	44.5	26.8	7.6	corner notch	26.8	25.4	9.7
266	5S-10W	8	O	34.5	31.2	7.1	corner notch	18.3	14.8	10.6
421	10S-15W	7	O	41.5	21.9	7.7	side notch	-	-	14.1
434	10S-5W	7	O	-	16.3	7.1	side notch	(15.7)	13.7	10.0
	Mean			40.2	26.5	7.7		22.6	17.6	10.3
	sd			4.19	5.14	0.83		-	3.81	1.69
B) South Locus										
Cat. No.	**Unit**	**SS**	**Mat**	**L**	**W**	**T**	**Hafting Element**	**Base W**	**Neck W**	**Shoulder H**
30	20S-20W	5	KP	(32.0)	21.2	6.5	corner notch	(11.5)	10.2	7.3
81	20S-10W	1	O	34.1	20.7	9.3	corner notch	(13.0)	9.5	8.5
117	15S-20W	20	O	-	-	-	corner notch	21.4	15.9	-
159	20S-15W	14	O	-	-	-	corner notch	18.8	15.1	(10.3)
194	15S-15W	16	O	(29.7)	20.5	7.5	corner notch	15.5	11.1	8.0
247	20S-15W	12	O	(17.2)	(14.9)	(6.0)	(tip frag)	-	-	-
384	20S-10W	15	O	(26.7)	15.8	7.2	(blade frag)	-	-	-
442	15S-15W	19	A	(27.8)	(17.8)	9.4	(tip frag)	-	-	-
	Mean			34.1	19.6	8.0		18.7	12.4	7.9
	sd			-	2.18	1.16		2.96	2.93	0.49

O=Onondaga, A=Ancaster, KP=Kettle Point

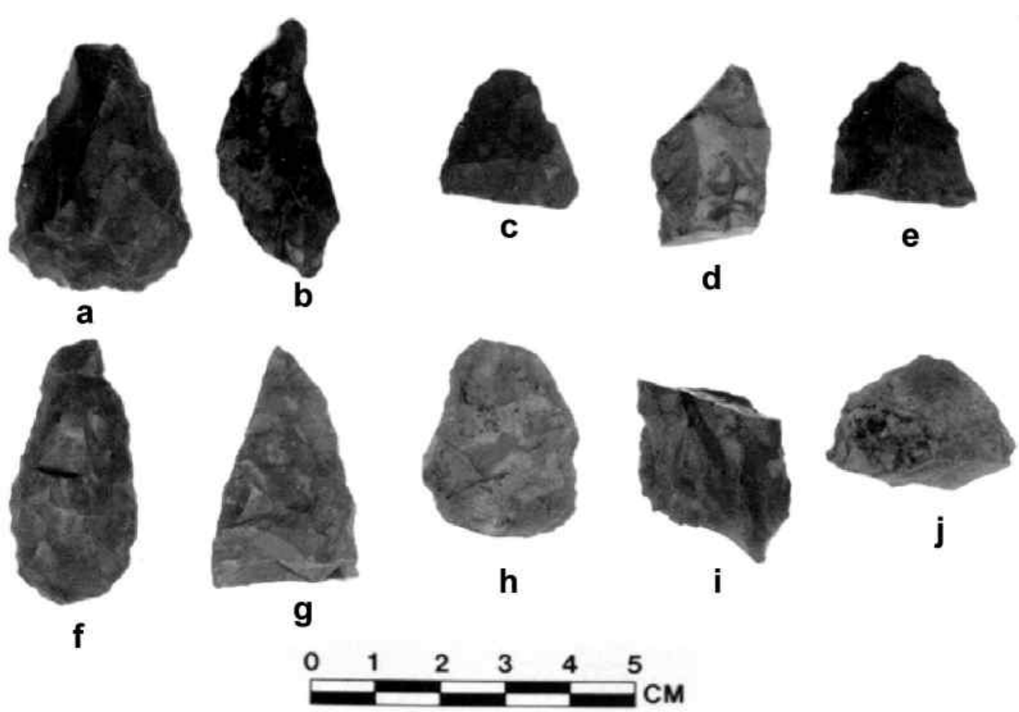

Figure 10. *Bifaces from the North (top row) and South (bottom row) Loci.*

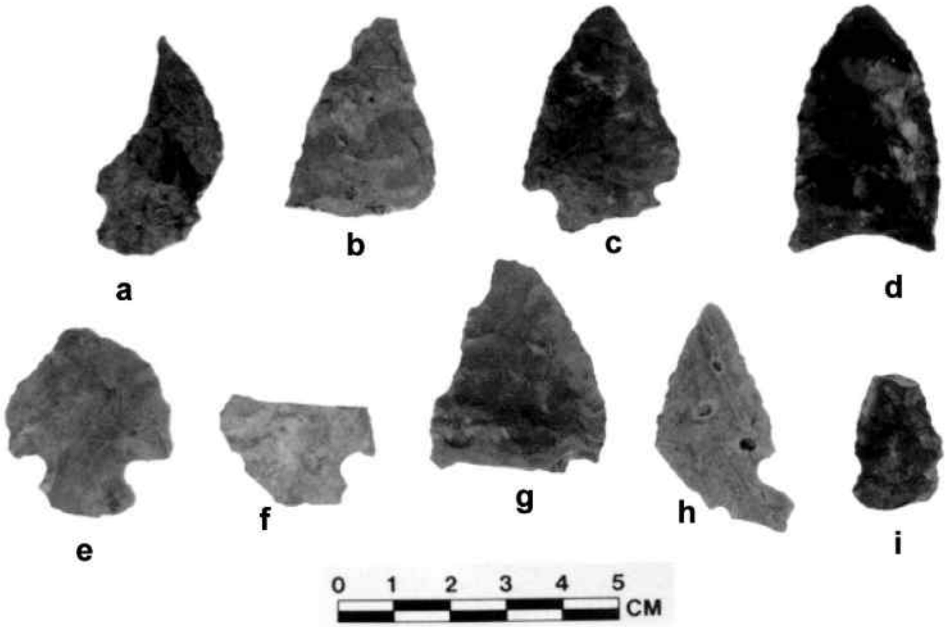

Figure 11. *North Locus projectile points.*

points usually have straight to excurvate blade edges, straight to convex bases and basal grinding is common (Justice 1987:115). Most Brewerton points range in length from 31 to 57 mm and from 8 to 10 mm in thickness (Justice 1987:248). In southern Ontario, Brewerton corner-notched points range from 30-55 mm in length, 20- 40 mm in width, with a hafting width of 10-20 mm and 6-11 mm thick (Kenyon 1987). On the basis of these traits, the north locus points are typed as Brewerton corner-notched (#70, 98, 117, 168, 228, 226, Figure 11g, f,c,d, and e), Brewerton side-notched (#68 and 114, Figure 11a and b), or possibly Otter Creek (#421, Figure 11h) type points (Justice 1987:115-119; Ritchie 1940, 1971:16) and one (#228, Figure 11d) is a heavily resharpened Brewerton Eared Triangle point (Justice 1987:123; Ritchie 1971:18). Many of the broken fragments are re-worked. For example, the tip of #68 (Figure 11a) was resharpened, the tip of #70 was re-worked as a spokeshave (Figure 11b) and #434 is a blade fragment that was reworked into a point with two very shallow notches for hafting (Figure 11i). As well, one drill fragment recovered from this locus was a recycled Brewerton type projectile point (Figure 7c).

The projectile points from the south locus (Figure 12) have similar morphological characteristics to those from the north. They are, however, much smaller with fairly straight to slightly excurvate blades, alternate beveling, very small corner notches, and basal thinning and grinding. These traits are generally associated with Late Archaic Crawford Knoll type points (Kenyon 1980a:3, 1980b). Crawford Knoll points range from 25 to 40 mm in length, 15 to 20 mm in width and 4 to 8 mm in thickness, and the corner-notched base ranges from 7 to 12 mm wide (Kenyon 1980b). Many of the Peiganovitch south locus points were re-sharpened or re-worked after breakage; for example, #384 was re-worked as a scraper after the tip broke. One projectile point is of Kettle Point chert and one is of Ancaster, the remaining specimens from the south locus are of Onondaga chert.

Hammerstone

A single hammerstone was surface collected from unit 5S-20W sub-square 1 (Figure 2). It is 71 mm

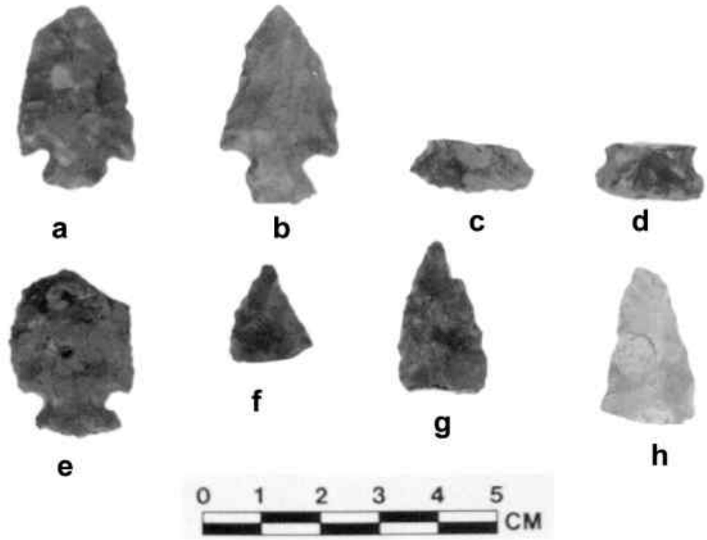

Figure 12. *South Locus projectile points.*

long, 58 mm wide and 41 mm thick, and has light chipping on both ends and pecking on the two opposing sides.

Ceramics
Seven body sherds and one neck sherd were recovered from around the edge of excavation (Figure 4). They are all small and range in thickness from 4 to 6 mm and have grit temper and smoothed-over exterior surfaces suggesting a Late Woodland cultural affiliation. A small Late Woodland hamlet is located approximately 150 metres west of Peiganovitch. None of the flaked stone tools from Peiganovitch suggest a Late Woodland origin. It is assumed, therefore, that the ceramics are not associated with the main prehistoric occupation at Peiganovitch.

Discussion

Intra-Site Comparisons
The north locus is 15 x 16 metres in size and the majority of debitage and artifact fragments were recovered from a gentle slope on the west edge of the excavation. Most of the formal tools and the hearth were found on the flat terrace to the east of the main flake scatter (Figures 2, 4, 5, 6 and 9). The excavation continued across the terrace primarily because of the high tool-to-flake ratio. Most of the complete tools were located on the terrace near the hearth while the majority of flakes and tool fragments were recovered from the slope. This suggests that the terrace was the occupation area for the north locus and the debitage and broken tools were discarded down the slope to the west of the camp.

The north locus lithic assemblage consists of a mixture of tool forms made almost exclusively of Onondaga chert. Higher percentages of decortication and primary flakes (Table 2) indicate the earlier stages of biface thinning and manufacturing. Utilized flakes were apparently used to perform the majority of tasks based on their high ratio to formal tools (Table 1), with a wide range of sizes and shapes recovered. Four wedges were also recovered from the north locus.

The south locus is 13 x 16 metres in size with the majority of tools and debitage recovered from the centre of the excavation. This locus size and artifact distribution is consistent with other ploughzone Late Archaic Small Point sites in Southern Ontario (e.g., Lennox 1986:Figure 4; Vanderburgh Kerr and Williamson 1993:Figure 2; Woodley 1990:49). The assemblage from the south locus at Peiganovitch is similar to that from the Crawford Knoll site, located at the mouth of the Chenal Ecarte at Lake St. Clair (Kenyon 1980a:1). The Crawford Knoll type points from the south locus at Peiganovitch indicate that this locus is part of the southern Ontario Late Archaic Small Point tradition, which also includes Innes, Ace-of-Spades and Hind type points (Ellis et al. 1990:107). Using the projectile point summary table provided by Kenyon (1989:13), the average length and shoulder height is comparable between points from the south locus at Peiganovitch and those from Crawford Knoll, but the Peiganovitch points are slightly wider, with wider necks and bases. Kenyon (1980a:13) originally suggested a date of 1500-500 B.C. for Crawford Knoll points but this age estimate was later revised to 1350-950 B.C. (Ellis et al. 1990:107). He also suggests that Small Points increase in size through time (Kenyon 1989:). Based on the size of the Peiganovitch points, it is postulated that the Crawford Knoll type points from Peiganovitch date to the later end of the 1350-950 B.C. time range.

Both loci at Peiganovitch contain similar tool forms with nearly identical frequencies (Table 1). There are two main differences. The first is the projectile point types – Brewerton is found in the north locus whereas Crawford Knoll is found in the south locus. The second is that all wedges and drill bases were recovered from the north (Brewerton) locus whereas only drill tips were recovered from the south (Crawford Knoll) occupation.

Although debitage frequency varies between loci, there is little discernible difference between the flake type and material percentages (Table 2). As with most south-central Ontario Archaic sites, utilized flakes are the most common tool form. There is only minor variation in the preferred flake types utilized and location of wear, with the only difference being that the majority of wear is on the distal end from tools in the north locus, followed by the left and right lateral edges in the south locus (Table 4). The ratio of utilized flakes to formal tools suggests that utilized flakes were used for the majority of tasks. The cores and subsequent utilized flakes removed from these cores would therefore be analogous to a prehistoric Swiss Army Knife, making tools available for any occasion when needed. The scrapers are similar from each locus. Drills were found in both loci: drill bases and a reworked point were recovered from the north locus; only drill tips were recovered from the south locus. The bifaces are similar from each locus, with similar frequencies and sizes. Only the projectile points are different between loci. This suggests that the standard Middle to Late Archaic tool kit consisted of projectile points, biface blanks that could be shaped into tools whenever needed, a few scrapers, and cores from which flakes for utilization could be easily removed.

The assemblage similarity between loci indicates a generalized Middle to Late Archaic tool assemblage with few distinguishing characteristics other than projectile points and the use of wedges. Alternatively, the assemblage suggests that each of these occupations represents an adaptation to a specific environment. A Brewerton point and wedges were recovered from the Northern site, located on Highway 6 New south of Ancaster (Woodley 2000), but no wedges were noted at either Shaver Knoll, from which numerous bipolar cores were recovered (Lennox and Morrison 1994), or Bell (Williamson et al. 1994), suggesting that wedges were used for a specific task. A statistical analysis of Archaic assemblages from a diverse range of environments, beyond the scope of what is reported on here, might indicate functional differences.

The essentially modern southern Ontario environment stabilized circa 6000 B.C. (McAndrews 1981:330). Periodic fluctuations or micro-climatic change occurred through time (e.g., Lovis 1986), but long-term environmental trends remained fairly stable (Bennett 1987:1799). Based on marl and wood analyses, the Middle to Late Archaic period was warmer and slightly wetter than the modern environment (Edwards and Fritz 1988: Figure 8). Pollen analyses from several locales around south-central Ontario, and specifically from Hams Lake, located 4 km north of Paris, indicate that the forest was composed of small percentages of birch, pine, and ironwood, and higher percentages of oak, elm, ash, and beech (Bennett 1987:Figure 5). Pollen evidence also suggests that in some areas of south-central Ontario the pine forest was replaced by oak savannah forest by about 6000 B.P. (Szeicz and MacDonald 1991:1516); it is unknown if this predominantly oak forest extended into the Peiganovitch area. The regional palaeo-environmental information suggests that the environment in southern Ontario did not change during the Middle to Late Archaic periods. The environmental data indicates, therefore, that both the Middle and Late Archaic occupations at Peiganovitch occurred in similar environments within the Carolinian Biotic Province. Similar plant and animal resources should, therefore, have been available during each occupation.

With no floral or faunal remains available, seasonality and subsistence inferences for these occupations is speculative. Our present understanding of the Middle and Late Archaic periods suggests hunting and gathering subsistence. There are numerous microenvironments located around the Peiganovitch site, with wetlands on the wide valley floor, intermediate floral zones on the valley slopes, and the upland mixed hardwood forest on tableland overlooking the valley. A variety of flora and fauna would have been available during the seasonal round. Perhaps the similarity between flaked lithic assemblages in the two loci indicates that both were occupied at about the same time of year. This hypothesis, however, can only be corroborated by the comparative analysis of collections from sites with good seasonal indicators.

The low frequency of debitage from both loci might be used to imply that they were fairly short-term occupations, but the correlation between duration of occupation and debitage density is questionable (Woodley 1996b). Based on the distribution of material and overall size, each locus was probably occupied once by a small group of people, presumably an extended family band.

An alternative explanation to the assemblage similarities between the Archaic period loci at the Peiganovitch site is that these occupations are actually more closely associated in time than has been suggested here. The projectile points may have been mis-typed, or our established point chronology and the assumed temporal difference between these types may be incorrect. This would imply that Brewerton type points were in use in Southern Ontario much later than was previously thought, possibly comparable to the age of Small Point Archaic sites. Only radiocarbon dates from Brewerton point sites in southern Ontario will confirm or contradict this hypothesis.

Inter-Site Comparisons

The similarity of the tool assemblages from the loci at the Peiganovitch site poses the question of whether the projectile points from the north locus are, in fact, Brewerton type points. In southern Ontario, Brewerton corner and side-notched and Otter Creek type projectile points date, conventionally, to the late Middle Archaic Period (Ellis et al. 1990:86) and are often associated with the Brewerton phase of the Laurentian Tradition of upper New York State, eastern Ontario and southwestern Quebec (Funk 1988: Figure 6; Ritchie 1980:89-104). Brewerton type points are, however, found throughout northeastern North America (Justice 1987:115, Map 49) but without the whole complement of Laurentian culture traits. No carbonized remains for radiocarbon dating were recovered from the Peiganovitch site. Age estimates must, therefore, rely solely on the diagnostic projectile points recovered. My estimate of the age of the north locus Brewerton occupation at Peiganovitch, using Ellis et al. (1990:86) as a guide, is 3000 - 2500 B.C.

True Laurentian tradition Middle Archaic sites are, by definition, restricted to the Lake-Forest or Canadian Biotic Province region of southeastern Ontario, southwestern Quebec and northern New York and are all located in what would have been prime fishing locales (Ellis et al. 1990:91). The Robinson and Oberlander sites (Ritchie 1940), originally used to define the Laurentian Archaic, are both multiple occupation, stratified sites located on opposite sides of the Oneida River in northern New York. Ritchie notes that it was necessary to search quite extensively to locate such "…large refuse bearing stations…" (Ritchie 1940:1), implying that these sites are not the norm. Presumably, there are numerous Brewerton sites in New York that are simply small lithic scatters comparable to the north locus at Peiganovitch, without the whole assemblage of Laurentian-type artifacts. Additionally, Tuck (1977:32) notes that many sites have been termed Laurentian throughout the Northeast that do not contain the complete slate assemblage and therefore he suggests a more restricted use of the term to only those sites with slate artifacts.

Allumette Island and Morrison Island-6 sites (Kennedy 1962, 1967), two Laurentian Archaic sites located on islands in the Ottawa River near Pembroke, support the idea of extended occupation during the Middle Archaic period. Photographs of the artifact assemblage from Morrison Island-6 indicate a wide assortment of copper, stone and bone tools (Kennedy 1967:103-108, Plates 2-4). Some of the burial pits at MN-6 overlap (Kennedy 1967: Plate 1), indicating that all interments did not occur simultaneously. From the available data it is inferred that this Laurentian site was used repeatedly during the Middle Archaic. Detailed analysis of these sites substantiates this hypothesis (Clermont and Chapdelaine 1998), with a wide range of Archaic period tools from a long period of time represented in the assemblage.

Most other Laurentian/Brewerton sites in southeastern Ontario also indicate recurring occupations. For example, the McIntyre site near Rice Lake (Figure 1) was repeatedly occupied, primarily from the Middle through to Late Archaic periods (Johnston 1984). This is evident in the wide array of projectile points and radiocarbon dates ranging from 2765 to 1700 B.C. (Johnston 1984:20-31, 74). The East Sugar Island site, also located on Rice Lake (Ritchie 1949:3-24), was determined to be multi-component from the artifacts represented, with some Point Peninsula artifacts initially confused with Laurentian Archaic material (Morrison and Jackson 1992). Using collections housed at the Royal Ontario Museum, Wright (1962) mapped the distribution of Laurentian slate artifacts (gouges, bannerstones, points, bayonets, plummets and semi-lunar blades) throughout Southern Ontario. Although there are obvious problems associated with using donated collections to map artifact trait distributions, there do appear to be discrete clusters of some artifact types within southeastern Ontario, especially in the Rice Lake area (Distribution Maps 1-4 in Wright 1962). These clusters indicate the repeated occupation of parts of southern Ontario by Laurentian culture people.

Although Brewerton points are recovered throughout most of southern Ontario, true Laurentian sites seem to be restricted to southeastern Ontario (Ellis et al. 1990:92) with an early Vergennes Phase foray into the Haliburton Highlands area (Ramsden 1997). From a survey of three regions north of Lake Ontario, Roberts (1985:96-98) determined that of the 69 Brewerton sites located, 49 percent were in Burlington-Oakville, 39 percent were in Durham and only 12 percent were in Lennox-Addington. This is surprising since Lennox-Addington is the easternmost region studied. Because of the absence of formal Laurentian traits (e.g., slate artifacts), none of the Brewerton sites identified were determined to be part of the Laurentian tradition (Roberts 1985:96). To date, no excavated Brewerton sites in south-central and southwestern Ontario contain the complete spectrum of Laurentian tradition artifacts. Most, like the north locus at the Peiganovitch site, contain only Brewerton points, an assortment of flaked stone artifacts and perhaps the odd ground stone tool (e.g., Austin 1994; Parker 1992; Timmins 1996). These sites are best referred to as Brewerton focus sites rather than Laurentian sites (Ellis et al. 1990: 92).

In south-central Ontario, there are a number of Brewerton focus sites available for comparison (Figure 1). They are: Big Tree, located near Cambridge (Parker 1992); Bell (Williamson et al.1985, 1994), located on the Niagara Peninsula; and Shaver Knoll (Lennox and Morrison 1994) and Little Shaver (Timmins 1996). The latter two sites are located within 5 km of Peiganovitch. After excavating 77 one-metre squares, Parker (1992:4, 11) determined that the Big Tree site represented four discrete Middle Archaic loci. From a 17 by 6 metre area excavated at the Little Shaver site, there is evidence of three discrete occupations: Middle Archaic Brewerton, Terminal Archaic and Early Woodland Meadowood (Timmins 1996:45).

Even though both these sites are multicomponent or have multiple occupations, they are both fairly small. As well, the Jeff site was a small lithic scatter associated with a single Brewerton type point located immediately across the valley from Peiganovitch (Poulton et al. 1995).

In contrast, Shaver Knoll and Bell are both large sites. Shaver Knoll (Lennox and Morrison 1994) is a large multi-occupation Brewerton site on a flat, unploughed ridge surrounded by swamp, which contained many points and other flaked stone tools and calcined faunal remains from "invisible" subsoil features (Lennox and Morrison 1994:2). A total of 243 one-metre squares were excavated and almost 9000 artifacts recovered (Lennox and Morrison 1994:2, 72), including many long, smooth pecking stones and fragments. Shaver Knoll is interpreted as representing multiple Middle Archaic period occupations (Lennox and Morrison 1994:3), but also recovered were an Early Archaic Nettling and Late Archaic Genesee type points (Lennox and Morrison 1994: Figures 8d and 9d). The wide variety of artifacts recovered from discrete clusters suggests that this knoll was periodically reused.

The Bell site is located "on a small ridge overlooking a tributary of the Twelve Mile Creek…" (Williamson et al.1985:1) in the town of Pelham on the Niagara Peninsula. Although the entire site was not dug, from the 130 excavated units, four subsoil features were noted (Williamson et al. 1994:77) and the assemblage includes 73 bifaces, 60 scrapers (including utilized flake scrapers), 77 utilized flakes, 12 cores, and 4,675 pieces of debitage (Williamson et al. 1994:68). Among the ground stone tools there is one abrader, one abrader/anvilstone, one abrader/hammerstone, one hammerstone/anvilstone, and one hammerstone. Although Brewerton points and some forms of ground stone tools were recovered, neither of these sites contains the entire complement of Laurentian cultural tradition diagnostics (Funk 1988: Table 1).

Using data from five sites, Table 10 shows the variability in dimensions of Brewerton points recovered from south-central Ontario. If the appropriate point metrics were not available in the published or unpublished literature, the dimensions were measured from the photographs provided in the original site report. For the purposes of this study, this method was deemed sufficient. On the basis of the information in Table 10, the Peiganovitch site points are consistently larger than those from the other sites; whereas the Bell site projectile points are consistently smaller. All of these points fall within the Brewerton size range provided by Justice (1987:247-248), but are smaller than average. The smaller size of these points might suggest regional or temporal differences between southwestern Ontario and other Brewerton sites in the Northeast.

One puzzling aspect of this disparity between southeastern and southwestern Ontario—namely, the lack of ground stone tools on Middle Archaic sites in southwestern Ontario—is that some of the diagnostic slate artifacts used to define Laurentian culture sites *are* found in southwestern Ontario (Wright 1962), specifically items such as bannerstones (Distribution Map 2 in Wright 1962). Given that Brewerton points are found throughout southcentral and southwestern Ontario but without the full spectrum of Laurentian artifacts, they are most likely related temporally and culturally to the Laurentian Complex, but with adaptive or cultural differences.

The wide distribution of Brewerton points without Laurentian type artifacts implies either a higher population during the Brewerton Middle Archaic occupation across southern Ontario, or a longer period of occupation than originally supposed. In part, this problem is due to inaccurate typologies and the lack of radiocarbon dates from these sites. Perhaps the Brewerton type description is too vague to be of much use, allowing too many, slightly different projectile points to be lumped together as one type.

Crawford Knoll points have been found throughout southwestern Ontario (Ellis et al. 1990). Kenyon (1980a:13) suggests similarities between the Crawford Knoll assemblage and sites in the Midwest, specifically to the Riverton Culture of Illinois (Winters 1969). This hypothesis is strengthened by the recovery of similar

Table 10. *Brewerton type point metrics comparison.*

Measurement		Peiganovitch	Shaver Knoll	Big Tree	Little Shaver	Bell
Length	**N**	**3**	**14**	**1**	**4**	**2**
	mean	40.2	36.8	33	38.0	31.0
	s.d.	4.19	9.02	-	3.46	5.66
Width	**N**	**7**	**21**	**3**	**4**	**4**
	mean	26.5	21.6	22.3	25.5	17.0
	s.d.	5.14	5.22	4.0	5.06	1.83
Thickness	**N**	**9**	**31**	**3**	**4**	**4**
	mean	7.7	7.1	5.7	8.5	5.7
	s.d.	0.83	1.50	1.15	1.29	0.96
Base Width	**N**	**3**	**29**	**3**	**4**	**2**
	mean	22.2	18.4	19.7	18.0	14.0
	s.d.	3.51	3.35	2.89	0.82	1.41
Neck Width	**N**	**8**	**30**	**3**	**3**	**4**
	mean	17.7	14.6	14.7	14.7	11.0
	s.d.	3.85	2.80	2.08	1.53	—
Shoulder Height	**N**	**7**	**21**	**3**	**4**	**4**
	mean	10.3	10.3	8.3	11.3	8.5
	s.d.	1.69	1.56	2.31	1.50	1.29

points at the Weber 1 site in the Saginaw Valley in Michigan (Robertson 1989:Figure 10c-e) and from site 20GR33, Gratiot County, Michigan (Beld 1991:Figures 36a and 37b). The south-central part of the province seems, however, to be the eastern limit of the Small Point distribution. Roberts (1985) surveyed three regions north of Lake Ontario and reports no Small Point Late Archaic projectile points. No Small Points were identified in the McIntyre site assemblage from Rice Lake (Johnston 1984) or from the Rideau Lakes area in southeastern Ontario (Watson 1990). Crawford Knoll points have been recovered from Grimsby (Woodley 1992:7) and the Niagara Peninsula (see Bursey 1994). Crawford Knoll points appear to be restricted to the south-western part of the province, primarily west of Lake Ontario.

Other than the distinctive projectile points, the Peiganovitch south locus assemblage is similar to that of other inland Late Archaic Small Point assemblages, such as the Innes site (Lennox 1986), located southeast of Paris, and the Thistle Hill (Woodley 1990), Abbey Hill 1 and 2 (Fitzgerald 1990) and Tanjo sites (Vanderburgh Kerr and Williamson 1993), all located south of Hamilton (Figure 1). The estimated date for the south locus of Peiganovitch is slightly later than the Innes type points recovered from the Thistle Hill site, with an accepted radiocarbon date of 1490±75 B.C. (Woodley 1990:16), or the Innes site with an accepted radiocarbon date of 1400±195 B.C. (Lennox 1986:265).

Included as part of the Small Point Archaic tradition is the Chaingate Site (Bursey 1994) located in Burlington on a sandy knoll near a small tributary. Some of the points from Chaingate were originally identified as Perkiomen by Bursey (1994:50) but there is another interpretation. Perkiomen points, as defined by Ritchie (1971:99), have squared bases and very wide lozenge-shaped blades, while the points identified as Perkiomen from Chaingate all have expanding stems and excurvate lateral blade edges (Bursey 1994:Figure 2). As evidence that the Chaingate points are of the Perkiomen type, Bursey (1994:Figure 7) plots the blade width and stem width of the Chaingate points along with point data from a number of Perkiomen and Innes type points from collections at the Niagara Region Museum, the Innes and Thistle Hill sites and the Piffard site from New York State. This figure, however, uses only two discrete traits to show that the Chaingate point blades and stems are much narrower than those from the Piffard site in New York, and only slightly narrower than the Perkiomen points from the Niagara Museum collection. The points identified as Innes from the Niagara Museum collection, however, have wider bases and stems than those from either the Innes or Thistle Hill sites, calling into question the accuracy of their identifications. Unfortunately, there are no photographs of these specimens to verify the accuracy of point identifications in this collection. If the Niagara Region Museum collection specimens are excluded from Bursey's (1994) Figure 7, then the Chaingate points are clearly not associated with the Perkiomen type points from Piffard.

Bursey (1994:50) asserts that two of the Chaingate points "...show some evidence of having been pentagonal preforms in the "angling" of the shoulders," which is a Perkiomen point trait. It is unclear how the original preform shape was determined from the finished projectile points, especially since none of the bifaces recovered from Chaingate are pentagonal preforms. Rather, the preforms from Chaingate are ovate and comparable in size to those from Small Point Archaic sites (e.g., Lennox 1996:Figure 9; Woodley 1990:Plates 7 and 8). As well, one heavily resharpened point from the Chaingate site was identified as Late Archaic (Bursey 1994:Table 2), but the basal shape, stem shape and metrics are similar to the other points from this site identified as Perkiomen, with only blade shape being significantly different (Bursey 1994:Figure 2, Table 2). Contrary to Bursey's identification, most of the Chaingate points appear to be comparable to the larger versions of Innes type points from Thistle Hill (Woodley 1990:69) and Innes (Lennox 1986:Figure 10). Based on Kenyon's (1989) cluster analysis of Late Archaic Small Points, my own observation of the points (in 1992), and their similarity with Innes type points, the Chaingate points can also be interpreted as being related to large, late Innes-type projectile points.

This confusion is due, in part, to the interpretation of the two discrete loci at the Innes site as contemporaneous occupations (Lennox 1986:234). Charcoal was recovered from features excavated in both loci and radiocarbon-dated: the north locus yielded a date of 1400±195 B.C. whereas the south locus yielded a date of 670±80 B.C. (Lennox 1986:265); Lennox accepts the earlier date as being representative of both loci. There is, however, an alternate interpretation for these data.

The projectile points from the south locus at the Innes site are, on average, larger than points from the north locus. Lennox (1986) does not provide individual projectile point measurements, so this information was obtained from Table 1 in Kenyon (1989) and measurements from photographss of points in the original report (Lennox 1986:Figure 10). In his statistical analysis of Late Archaic Small Points, Kenyon (1989:17) determined that, in general, there seems to be an increase in point size through time. At Innes, most of the exotic material is from the south locus, and "[t]here is also a strong association of Kettle Point, Flint Ridge, and Mercer chert debitage with this locus although no tools of the latter two cherts were recovered" (Lennox 1986:235). There are also differences between the tool assemblages. For example, Lennox states that "(m)ore disconcerting is the exclusive representation of several rare tool forms such as drills, denticulates, and perforators, and a higher incidence of utilized flakes and spokeshaves in the southern locus" (Lennox 1986:235). Given the assemblage differences between these loci, it is plausible that the radiocarbon dates are accurate and these loci represent discrete Small Point Late Archaic occupations that are separated by about 700 years. If the hypothesis of two temporally discrete occupations at Innes is accepted, then the Chaingate points could date to about the same time as the south locus at Innes.

Similar to the previously discussed Brewerton sites, all of these Small Point sites represent a series of short-term occupations located near diverse microenvironments. The Innes (Lennox 1986:238), Tanjo (Vanderburgh Kerr and Williamson 1993:12), Welke-Tonkonoh (Muller 1989:20) and Thistle Hill (Woodley 1990:49) sites all represent short-term inland occupations near stream edges within upland environments. Chaingate (Bursey 1994) was located in a comparable setting, but much closer to Lake Ontario. The Inverhuron Small Point sites (Kenyon 1959; Ramsden 1975; Wright 1972) are associated with the lake edge, consisting of many microenvironments (Ramsden 1975:44). Crawford Knoll (Kenyon 1980a:1) is situated in a marsh or river edge environment that would have been productive at any time of year. The similarities between the tool assemblages from these sites suggest an almost generic tool assemblage utilized throughout Southern Ontario during the Small

Point Late Archaic period. The frequency of individual tool forms at these sites, however, is also highly variable, suggesting independent adaptations to these microenvironments.

One final observation can be made about the overall size and artifact density at the Peiganovitch site. It is a small site and even after numerous visits, little surface material was identified. Even the Stage 3 test excavation and Stage 4 excavation produced low artifact frequencies. Most current CRM archaeological investigations focus on the larger, more complex or multi-component or multi-occupation sites that are easier to find. Based on the frequency of artifacts recovered, it is much easier to justify excavating these large, densely occupied sites. But smaller sites like Peiganovitch equally challenge our understanding of the Middle to Late Archaic periods of southern Ontario. Other excavated, small Archaic period sites (e.g., Dodd 1997; Fisher et al 1997; MacDonald 1997; Murray 1997; Ramsden 1997; Timmins 1996) have all made important contributions to our understanding this period.

Summary

The Peiganovitch site was occupied once during the Middle Archaic and once during the Late Archaic period; based on ceramics there is also some evidence of Late Woodland and Euro-Canadian use of the area. Presumably both Archaic occupations were by extended family bands of hunter-gatherers. The tool assemblages from the two loci are nearly identical, except for distinct point types and the presence of wedges from the northern or Brewerton focus component. The similarities between the Middle and Late Archaic assemblages at Peiganovitch may be related to a specific subsistence adaptation within a mixed environment of the Carolinian Biotic province. Alternatively, they raise a question about the established temporal chronology for Brewerton point types: these points may have been mistyped. The Brewerton point type category needs to be reexamined to clearly define the point type and resolve this question. The confusion suggests that both Archaic period occupations at the Peiganovitch site were occupied at almost the same time. There is insufficient evidence to determine the season of occupation for either loci, but given the similarity of the chipped lithic assemblages they could conceivably have been occupied at the same time of year.

It is also suggests that the differences between Middle Archaic site assemblages in southern Ontario might be connected, in part, to regional environmental differences. The repeated use of specific resource areas (such as fishing areas) may be identified by the abundance of slate tools on Laurentian culture Archaic sites in southeastern Ontario. In southwestern Ontario, which possibly had a more diffuse adaptation, there is not the repeated use of specific areas through time and therefore the whole complement of Laurentian culture traits is not present. Given the wide temporal and geographic range of Brewerton type points across northeastern North America, adaptation differences as well as territorial differences should be expected.

Acknowledgments. I thank Dana Poulton, originally of Mayer, Poulton and Associates Inc. and now of D.R.Poulton & Associates Inc., for allowing me to use the data from Peiganovitch and for commenting on an earlier draft of this report. For the pipeline project, Dana Poulton served as Consulting Archaeologist and was responsible for the overall management of the project, Bill Fitzgerald was Project Archaeologist and Field Director during the course of the field investigations, and Liz Alder and I were Assistant Field Directors. I thank the field crew for their hard work and especially Bill Fitzgerald, who was fond of saying that this was his big contribution to Archaic period research in southern Ontario. I also thank TransCanada PipeLines Limited, specifically Alan Glasgow, Manager of Environmental Affairs, for funding the excavation and initial analysis of this site and for allowing me to publish this data. Also, thanks to Carol Ramsden and Dana Poulton for editing earlier drafts of this report and pointing out some of the wonkier ideas, and Chris Ellis, Peter Timmins and Andrew Stewart all assisted with their comments upon submission to *OA*.

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Le sondage et la fouille subséquente d'une dispersion lithique au centre du sud de l'Ontario a dévoilé un locus de l'Archaïque moyen (Brewerton) et un locus de l'Archaïque supérieur (Small Point). Ceux-ci sont superposés par une distribution légerte de céramique du Sylvicole supérieur et de vestiges euro-canadiens du XIXe siècle. Ce rapport se concentre sur les deux locus archaïques au site Peiganovitch (AhHa-127). Une comparaison entre ces locus et des sites contemporains du sud de l'Ontario identifie des similarités ainsi que leur affiliation culturelle. Une comparaison des artéfacts entres les locus révèle des similarités étonnantes entre ces ensembles qui, censément, sont séparés par des milliers d'années. Cette similarité suggère sois une continuité à long terme d'ensembles d'artéfacts grâce à une adaptation à un microenvironnement spécifique. D'autre part, cette similarité soulève des questions sur les dates établies dans la chronologie des pointes de projectiles du sud de l'Ontario.

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