The La Salle-Lucier Site: Two Components of the Western Basin Tradition, Essex County, Ontario

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The reconstruction of Highway 18, which follows the east bank of the Detroit River south of the city of Windsor, Ontario, required the salvage excavation of threatened portions of the La Salle-Lucier site. The site consisted of horizontally distinct Younge phase and Springwells phase components of the Western Basin Tradition. The excavations yielded settlement pattern data, artifact assemblages, and floral and faunal remains, all of which help to document the subtle changes in the adaptive strategy of these small late prehistoric native communities through a short succession of warm season settlements.

Introduction

On modern maps, the Detroit River has a relatively straight, wide channel with high, even banks on both the Canadian and American shores. This is misleading, the result of more than a century of dredging, infilling and industrial expansion that has altered the original character of the river. Before these changes, the Detroit River worked its way around a number of large and small islands, and the low banks on both sides were lined with extensive swamps and marshy lowlands. Early explorers often referred to the river as a "streight" (e.g. Hennepin 1974:10), as the waterway appeared to be a series of marshes and open pools.

Between La Salle and Amherstburg, in Essex County, the Highway 18 corridor follows the first height of land east of the Detroit River. Like much of Essex County this area is a flat, poorly drained clay plain, but thin, slightly elevated deposits of outwash sands occur at some locations, particularly in the La Salle vicinity. Although the proposed highway improvements were limited in extent, the area's high archaeological potential necessitated a survey before construction commenced. This was accomplished during the 1985 and 1986 field seasons. The Butt (AaHs-28) and Henderson (AaHs-29) sites, located south of the River Canard, were investigated in 1985, yielding evidence of Late Woodland, late 18th and early 19th century Native, and European occupations, including traces of a War of 1812 battery (Corey 1987, Lennox 1987, Murphy 1988).

The 1986 survey north of the River Canard identified a Late Woodland site on the Lucier property near the south edge of the Town of La Salle, on Lot 24, Concession 1, Township of Sandwich West (Figure 1). This site was named the La Salle-Lucier Site (AbHs-8) to distinguish it from the Lucier Site (AbHs-1) a few kilometres to the northeast, on the E.C. Row expressway in Windsor (Wright 1976, Reid 1978, Lennox 1989). This report documents excavations conducted at the La Salle-Lucier site in 1986 and 1987, outlining the spatial definition and materials recovered from two components attributed to the Younge and Springwells phases of the Western Basin Tradition.

As it is now understood, the Western Basin Tradition is the Late Woodland manifestation in the territory draining into the western basin of Lake Erie, into Lake Saint Clair, and into the southern portion of Lake Huron. First referred to in Michigan as the Younge Tradition (Fitting 1965), the broader term, Western Basin Tradition, was later introduced to include sites and assemblages from northwestern Ohio and southwestern Ontario while retaining Fitting's phase designations (Prahl, Brose and Stothers 1976). The four phases of the Younge or Western Basin Tradition are distinguished by ceramic attributes as well as by alterations in settlement and subsistence strategies (Murphy and Ferris 1990). They include the early Late Woodland Riviere au Vase phase (A.D. 600-900); the Younge phase (A.D. 900-1200); the Springwells phase (A.D. 1200-1400); and finally the Wolf phase (A.D. 1400-1600).

During the Riviere au Vase and Younge phases the settlement and subsistence strategies are characterized by seasonal mobility geared toward

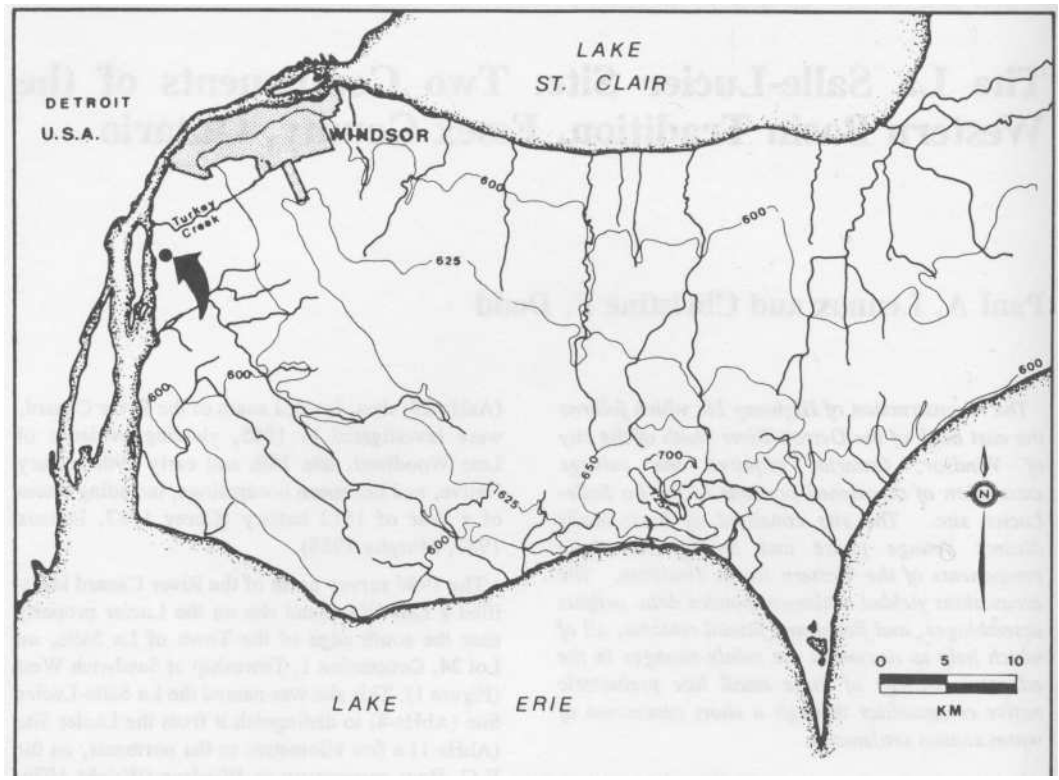


Figure 1. Location of the La Salle-Lucier Site

resource availability. Small groups, perhaps a few extended families, spent much of the warm season near lakeshores where fish, game and plant foods were plentiful. Excavated sites such as 11H8 on Point Pelee (Keenlyside 1978) and Indian Clearing on Point aux Pins (Stothers 1977) on the north shore of Lake Erie were repeatedly occupied summer base camps that exhibit a complete range of available warm season fauna. In the fall these groups moved inland to gather nuts and hunt local game (Ferris 1989, Kenyon et al 1988, Lennox 1982). Corn and beans are present on some sites of the Younge phase but are absent from those of the Riviere au Vase phase. These domestic plants may have encouraged a slight change in settlement patterns to locations, such as La Salle-Lucier, which offered greater horticultural capabilities and allowed larger aggregations of people to remain together longer during the cold season (Ferris 1989:6, Lennox 1982:108-109). Alternatively, during the winter months, family groups may have dispersed into small hunting camps.

Riviere au Vase pottery is known as Wayne ware. The vessels are small and thin walled, decorated with vertical cordmarking. Later vessels may have additional decoration, such as tool-impressed obliques applied over the corded surface on the rim. Younge phase vessels are larger and more elaborately decorated. Multiple bands of oblique tool-impressions appear on the rim while vessel necks are smoothed and highly decorated with chevrons, plats, and filled triangles. Vessel bodies are almost always corded, often coarsely and irregularly.

The Springwells phase sees a shift to larger, seemingly more permanent, warm season settlements that included longhouse structures and palisades. The increase in settlement size is attributed to larger summer residence groups who were now practising more intensive horticulture. These settlements tend to be situated to provide easy access to arable land as well as continued access to marsh, river and lakeshore environments (Kenyon 1988). Extraction camps located near seasonally abundant resources (Kenyon et al 1988, Prevec 1988), and single family winter cabin sites (Murphy 1989) continue to be utilized. It is also during the Springwells phase that summer settlements first appear up to a few kilometres inland where several vegetation zones would have been within easy access. Some sites are littered with fired clay lumps with coarse fiber impressions suggesting that house construction included the use of wattle and daub (Kenyon 1988).

Springwells phase ceramics are large, bag-shaped vessels decorated with horizontal bands of incised or impressed decoration on collared and usually castellated rims. New forms of vessel body decoration also appear early in the phase and these include roughened or self slip and ribbed paddle surfaces.

The final stage of the Western Basin Tradition, the Wolf phase, is known from only a few sites in Ontario. All are found within a short distance of Lake Saint Clair or the Saint Clair River and are large, warm weather villages, often fortified by earthworks. The scarcity, location, and fortification of these sites is attributed to a gradual westward expansion of Ontario Iroquoians that ultimately resulted in the abandonment of the area by Western Basin peoples early in the 17th century.

The ceramic marker for the early part of the Wolf Phase is Parker Festooned pottery, a highly ornamental ceramic type with undulating bands of dentate stamped impressions or stamped appliqué strips on vessel necks. Shell tempered vessels with strap handles and notched lips or notched horizontal rim strips are adopted and become the primary vessel form after A.D. 1500 (Kenyon 1988, Reid 1978, Vantomme 1965).

The Excavations

During the 1986 field season, excavations parallel to the east boundary of MTO property recovered Younge phase materials that would have been lost to road reconstruction and municipal drain relocation. Sixty-three one-metre squares were excavated in a long narrow strip measuring a maximum of 4 metres wide and 29 metres long, interrupted by the Lucier's driveway (Figure 2). These excavations were bounded on the west by the deep gravel bed of a former rail line paralleling the east shoulder of the highway, and on the east by the limit of potential disturbance due to municipal drain installation, and on the north and south by the limit of the distribution of cultural material.

Cultural material was recovered in the deep topsoil of the 1986 excavations. Subsoil features 1 through 5 were also identified and excavated. In the spring of 1987, the Lucier's driveway area was stripped, allowing the excavation of features 6a-c, 7 and 8 (Figure 3).

The 1986 excavations revealed an average topsoil depth of between 40 cm and 50 cm, suggesting that subsoil features might be preserved beneath Highway 18. Monitoring construction activities in 1987 confirmed this, and salvage excavations were carried out beneath the existing Highway 18 roadbed during the construction phase in 1987 (Figure 2). These excavations revealed a continuation of the Younge phase component in the sandy subsoil beneath the highway adjacent to the 1986 excavations. Immediately north of this component was a large, apparently unoccupied, area of clay subsoil. It is difficult to ascertain whether this area was unoccupied due to the soil conditions or whether all traces of occupation were later destroyed, perhaps by the levelling of a slight knoll. Farther to the north the sandy subsoil resumes and the distribution of features there indicates the presence of a second component attributed to the Springwells phase (Figure 7).

The one-metre square excavations were conducted by passing all topsoil within the squares through 1/4" (6 mm) mesh screening. Provenance for these materials is by one-metre squares, designated by its northwest one-metre grid coordinate. Features were mapped, profiled, and screened, with portions of the feature fill being retained for flotation.

La Salle-Lucier South: The Younge Phase Component

The area designated La Salle-Lucier South (Figure 3) is a component of the Younge phase. It includes the 1986 one-metre square excavations, features 1 to 8, and the 1987 excavations to the west of this area, including features 25, 32-34 and 47, and the associated post molds.

Features and Post Molds

Two east-west oriented rows of posts were identified toward the south end of the 1987 excavations, north and south of features 32 and 34. These rows lie nearly three metres apart, measure approximately four metres long and each contains about fifteen aligned posts. The post molds are approximately 6 cm in diameter and 7 cm deep, but since the depth at which they were encountered is impossible to ascertain because of highway levelling, these measurements are of questionable significance. The spacing between post molds is approximately 25 cm and 35 cm for the north and south rows respectively. Interpretation of these short rows is made difficult since Western Basin Tradition house and palisade post patterns both appear to be represented by aligned rows of widely spaced post molds (Ferris 1989, Kenyon 1988, Lennox 1989, Murphy and Ferris 1990). Several isolated posts were also identified amongst features 1 to 8 (Figure 3) but these are also difficult to interpret.

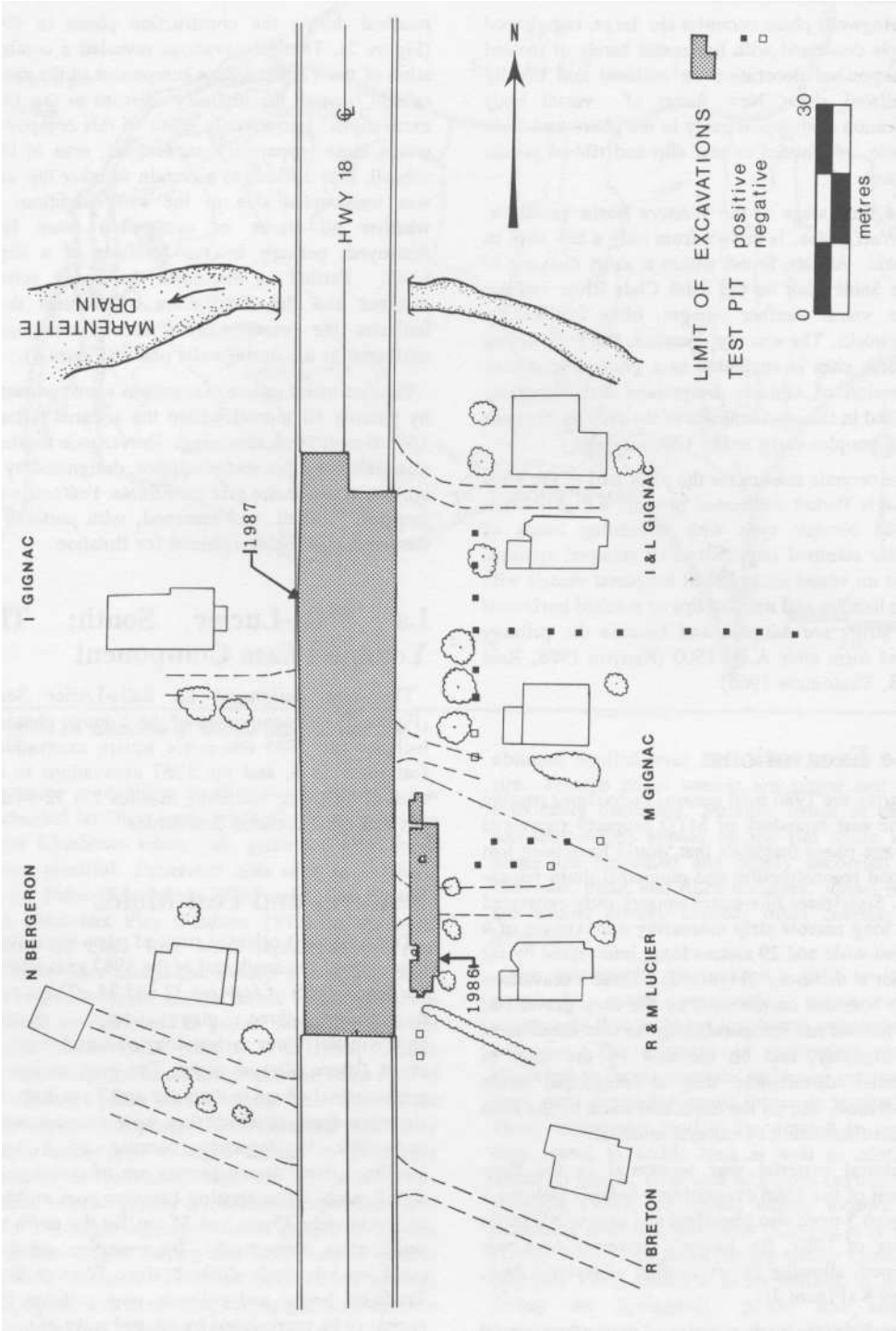


Figure 2. Limits of Excavation

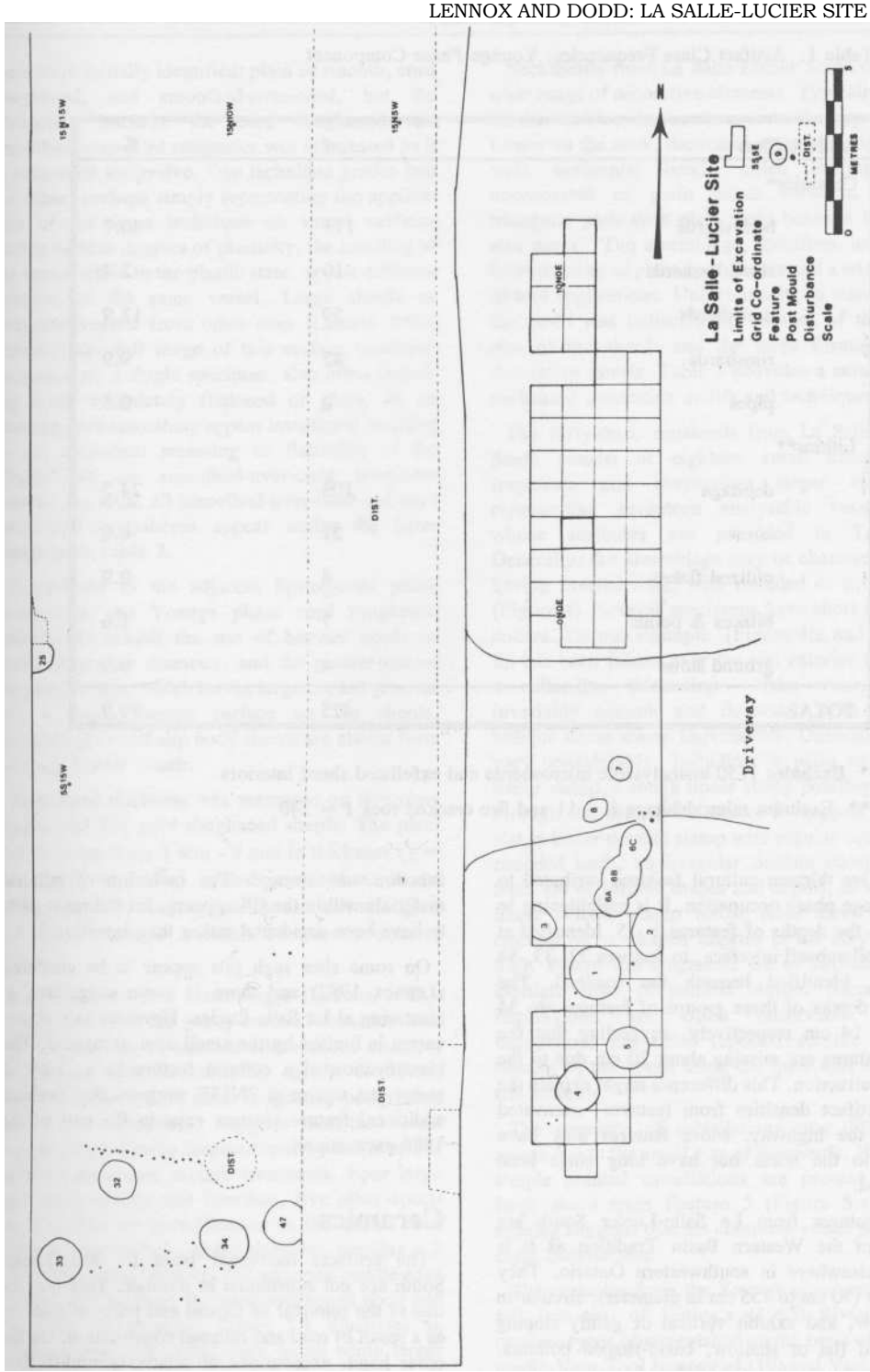


Figure 3. La Salle-Lucier: Younge Phase Component

Table 1. Artifact Class Frequencies: Younge Phase Component

Artifact Class	f	%
Ceramics*		
bodysherds	173	40.7
shouldersherds	10	2.4
necksherds	59	13.9
rimsherds	42	9.9
pipes	2	0.5
Lithics**		
debitage	103	24.2
cores	21	4.9
utilized flakes	4	0.9
bifaces & points	7	1.6
ground stone	4	0.9
TOTAL	425	99.9

* Excludes 1150 unanalysable microsherds and exfoliated sherd interiors.

** Excludes microdebitage f = 11 and fire cracked rock f = 240

There are thirteen cultural features attributed to the Younge phase occupation. It is enlightening to compare the depths of features 1 - 5, identified at the topsoil-subsoil interface, to features 32, 33, 34 and 47, identified beneath the roadbed. The average depths of these groups of features are 34 cm and 14 cm respectively, suggesting that the latter features are missing about 20 cm due to the road construction. This difference might explain the lower artifact densities from features excavated beneath the highway. More features may have existed to the north but have long since been destroyed.

The features from La Salle-Lucier South are typical of the Western Basin Tradition as it is known elsewhere in southwestern Ontario. They are large (70 cm to 155 cm in diameter), circular in plan view, and exhibit vertical or gently sloping sides and flat or shallow, basin-shaped bottoms. The features consistently produced small quantities of firecracked rock, lithic, ceramic and bone refuse in fill which is usually topsoil mottled with subsoil and charcoal flecks, occasionally layered with different quantities of these fill materials. Their large diameters and depths suggests that their main function was storage. The inclusion of cultural materials within the fill appears, for the most part, to have been accidental rather than intentional.

On some sites such pits appear to be clustered (Lennox 1982) and there is some suggestion of clustering at La Salle-Lucier. However this observation is limited by the small area excavated. The identification of a cultural feature in a .5 by .5 metre test square at 2N13E suggests that perhaps additional feature clusters exist to the east of the 1986 excavations.

Ceramics

The artifacts recovered from La Salle-Lucier South are not substantial in number. This may be due to the removal of topsoil and parts of features as a result of road and railroad construction. On the other hand, excavations of relatively undisturbed topsoil and features on portions of the site suggest that cultural remains were never very numerous (Table 1).

Bodysherds were classified by their surface treatment and thickness. Three types of surface treat-

ment were initially identified; plain or smooth, cord roughened, and smoothed-over-cord, but the distinction between the cord roughened and smoothed-over-cord categories was eliminated as it is somewhat subjective. One technique grades into the other, perhaps simply representing the application of the same technique on vessel surfaces during various degrees of plasticity, the handling of the vessel while in the plastic state, or just different portions of the same vessel. Large sherds or complete vessels from other sites (Lennox 1982) indicates the full range of this surface treatment technique on a single specimen, also often including areas completely flattened or plain. In no instance does smoothing appear intentional resulting in the consistent smearing or flattening of the "highs" as on smoothed-over-cord Iroquoian vessels. As such, all smoothed-over-cord and cord roughened bodysherds appear under the latter category in Table 2.

In contrast to the adjacent Springwells phase component, the Younge phase cord roughened bodysherds exhibit the use of heavier cords or cords of greater diameter, and the greater use of the paddle edge, which leaves large corded grooves and a more uneven surface on the sherds. Roughened or self slip body sherds are absent from La Salle-Lucier South.

Bodysherd thickness was measured on five plain sherds and 101 cord roughened sherds. The plain sherds range from 3 mm - 9 mm in thickness ($x = 5.8$ mm), while the corded sherds tend to be slightly thicker, ranging from 3 mm - 14 mm ($x = 6.8$ mm), perhaps a result of uneven exterior surfaces.

As noted in other assemblages (Lennox 1982), small sherd size, the gently rounded shoulder form and the scarcity of shoulder decoration, makes it difficult to recognize shoulder sherds. However, the predominance of cord roughened bodysherds and plain necksherds, suggests that the vessel shoulders are simply characterized by the interface between these two surface treatments. Four large specimens exhibit this interface, five other specimens exhibit an intensification in the use of cord wrapped paddle edge at the shoulder, creating a 3 cm - 5 cm wide band of cord wrapped paddle edge impressions between the cord-roughened body and the plain vessel neck. Figure 5:k illustrates an example from La Salle-Lucier South while larger examples were recovered from the Bruner-Colasanti Site (Lennox 1982:135, 139, 143). The specimen from La Salle-Lucier exhibits a band of parallel oblique dentate stamp impressions (with `c'-shaped teeth) above the band of cord wrapped paddle edge impressions.

Necksherds from La Salle-Lucier South exhibit a wide range of decorative elements. Typically, those on the exterior rim continue onto the upper neck. Lower on the neck, decorated areas often appear in wide horizontal bands, often leaving wide undecorated or plain bands between. Bold triangular plats with plain areas between the plats also occur. The assemblage, therefore, includes a large number of plain neck sherds and a wide range of tool applications. Unfortunately, in many cases, the motif was indiscernible because of the small size of the sherds and the large format of the decorative motifs. Table 3 provides a summary of necksherd decorative motifs and techniques.

The forty-three rimsherds from La Salle-Lucier South consist of eighteen small unanalysable fragments and twenty-five larger specimens representing seventeen analysable vessel rims whose attributes are provided in Table 4. Generally, the assemblage may be characterized as having everted rims, with rounded or square lips (Figure 4). Several specimens have short incipient collars. On one example, (Figure 4:c and 5:c) the lip has been folded over the rim exterior to create a collar-like thickening. Rim exteriors are invariably smooth and decorated with parallel oblique linear stamp impressions. Decorative tools vary considerably, including: a plain or smooth linear stamp, a rough linear stamp possibly created through the use of the end of a snapped wooden slat, a linear dentate stamp with regular squarish or rounded teeth, an irregular dentate stamp whose teeth are of various shapes and depths, as well as a linear dentate stamp whose teeth leave a semi-circular or `c'-shaped imprint in the clay (Figure 5:e). Where rim fragments are of sufficient size, multiple rows of parallel oblique linear stamp impressions are often observable. Stamp impressions are often repeated on the lip and interior of the vessel using the same tool as on the rim exterior.

The presence of castellations was difficult to assess due to the small size of rimsherds. However, simple pointed castellations are present on one large sherd from Feature 5 (Figure 5:e). Their spacing suggests that the complete vessel possessed eight castellations.

The ceramics from the Younge phase component fall into two of Fitting's (1965) Riviere Ware ceramic types (distinguished on the basis of the tool used): Vase Tool Impressed (10) and Vase Dentate (7). Typically the motif consists of a horizontal band of parallel oblique tool impressions at the lip, often with additional bands beneath. The high, gently constricted necks are smooth, sometimes exhibiting additional bands of oblique tool impressions or trailed triangular plat or criss-cross

Table 2. Bodysherd Surface Treatment: Younge Phase Component

Surface Treatment	f	%
Cord Roughened	161	93.1
Plain/Smooth	12	6.9
TOTAL	173	100.0

Table 3. Neck Decoration: Younge Phase Component

Technique	Motif					TOTAL
	Plain				?	
Plain/Smooth	40					40
Cord Roughened	3					3
Trailing			3	1	6	10
Impression				2		2
Plain Linear Stamp		1				1
Cord Wrapped Stick		1				1
Dentate Stamp		1			1	2
TOTAL	43	3	3	3	7	59

Table 4. Rimsherd Attributes: Younge Phase Component

Prov.	Decorative Tool	Exterior	Lip	Interior	Neck	Surface	Fig.4 Profile Ref.	Fig.5 Profile Ref.
F-1	rough linear	obliques	obliques	obliques	-	smooth	a	a
F-1	rough linear	obliques	obliques	-	-	smooth	b	b
F-1	rough linear	obliques	-	-	-	smooth	-	-
F-1	regular dentate	-	obliques	-	-	-	-	-
F-2	rough linear	obliques	obliques	obliques	ob1CWPE	corded	c	c
F-4	rough linear	obliques	obliques	obliques	obliques	smooth	d	d
F-5	"C" dentate	obliques	obliques	obliques	plain	smooth	e	e
F-5	rough linear	obliques	obliques	-	-	smooth	-	-
F-6B	regular dentate	obliques	obliques	obliques	obliques	smooth	f	f
F-6C	rough linear	obliques	plain	obliques	-	smooth	g	-
13S1E	rough linear	obliques	obliques	obliques	obliques	smooth	h	g
11SOE	regular dentate	obliques	obliques	-	obliques	smooth	f	-
11S1E	rough linear	obliques	obliques	obliques	obliques	smooth	a	-
9SOW	irregular dentate	oblique	oblique	plain	-	smooth	e	-
1N1E	irregular dentate	obliques	obliques	plain	-	smooth	e	h
3N2E	rough linear	obliques	plain	plain	-	smooth	e	-
4N2E	regular dentate	oblique	obliques	plain	-	smooth	e	

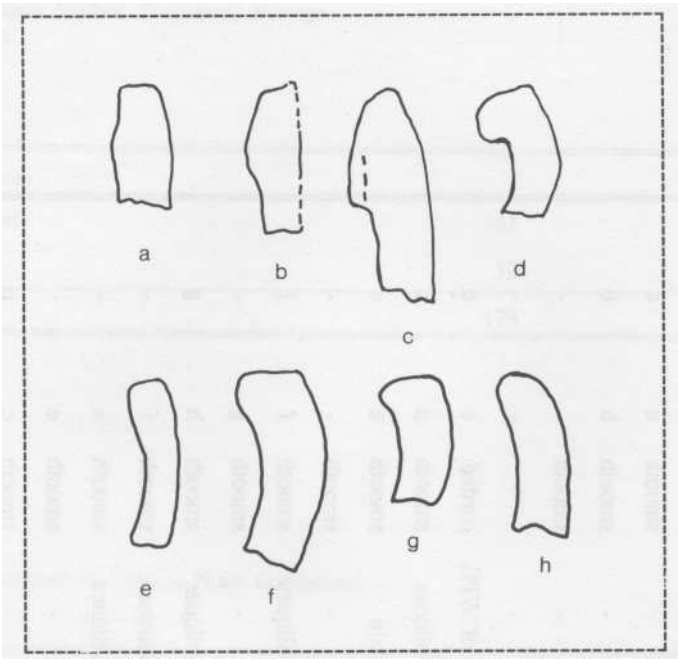


Figure 4. Rimsherd Profiles: Younge Phase Component

a	Tool Impressed Rimsherd (F-1)
b	Rimsherds with dentate stamp impressions (F-1)
c	Rimsherd with rough linear tool impression above cord-wrapped-stick or paddle edge (F-2)
d	Rimsherd and fragment with plain tool impressions (above) dentate stamp impressions (below) (F-4)
e	Vessel segment exhibiting castellations, parallel oblique dentate stamp impressions (individual teeth are "C" shaped) on exterior, lip and interior surfaces of the rim, a plain neck and cord-roughened body (F-5)
f	Rimsherd with regular dentate stamp impressions (F-6b)
g	Rimsherd with regular dentate stamp impressions (13S1E)
h	Rimsherd with cord-wrapped-stick impressions (1N1E)
	Rimsherd with regular dentate stamp impressions (4N2E)
j,k	Necksherd with railed criss-cross motifs (F-6c, 11SOE). Motif on j may occur within triangular plats. Parallel oblique dentate stamp impressions occur on shoulder of k above cord-roughened body
I	Plain pipe bowl fragment (F-25)
m	Pipe elbow - stem - mouthpiece (F-1)

Key to Figure 5

Figure 5. Ceramics: Younge Phase Component

Table 5. Debitage Morphology: Younge Phase Component

Flake Type	f	%
Primary	53	51.5
Secondary	18	17.5
Shatter	20	19.4
Fragments	12	11.6
TOTAL	103	100.0

Table 6. Bipolar Core Metrics (mm): Younge Phase Component

Attribute	f	R	X	S
Length	17	16-39	22.7	7.0
Width	20	9-25	15.8	4.1
Thickness	21	4-13	7.6	2.5

a - h	Bipolar cores, (F-4, F-2, 10S2E, F-4, 9SOW, 4S1E, F-4, F-5) h includes a flake (left) removed from the core (right)
i - j	Utilized and retouched flakes of Kettle Point Chert (7NOW, F-4) i exhibits steep distal dorsal retouch (top edge) j exhibits bifacial use retouch along the proximal (top) edge
k	Large primary flake of Bayport Chert showing bifacial or alternate use retouch on the lateral (top) edge (F-2)
1	Thick biface (drill) midsection (9S1E)
m	Biface fragment (13S1E
n	Point tip (F-4)
o	Point tip with serrated blade edges - possibly tip of an early archaic Nettling Point (2N2E)
p	Point base of unknown affiliation (950W)
q	Celt or adze (F-5)
r - s	Fragments of ground stone objects possibly a bannerstone and gorget (11NOW, 10S1E)

Key to Figure 6

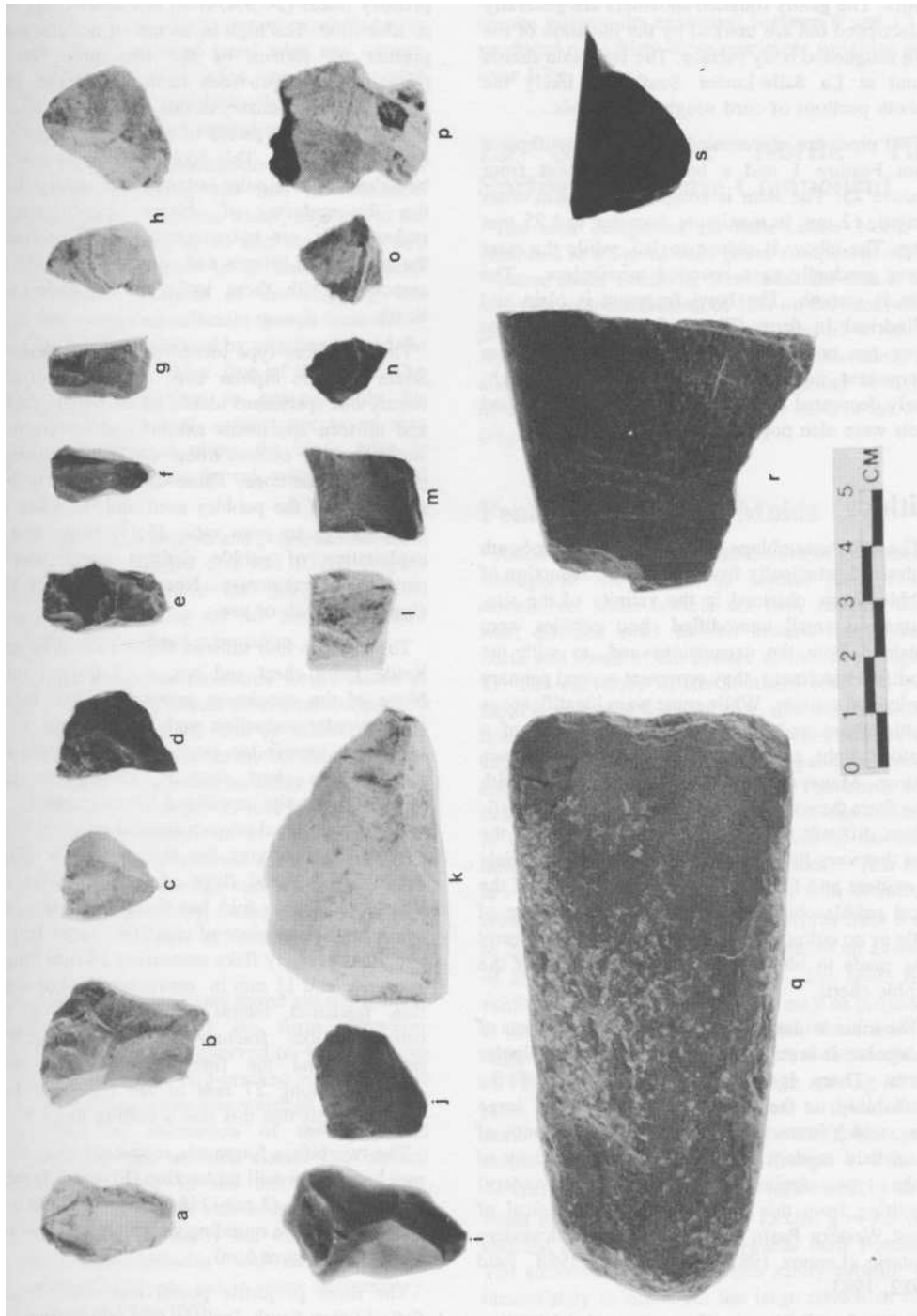


Figure 6. Lithics: Younge Phase Component

motifs. The gently rounded shoulders are generally undecorated but are marked by the initiation of the cord roughened body surface. The few plain sherds found at La Salle-Lucier South are likely the smooth portions of cord roughened vessels.

Two pipes are represented by a stem-mouthpiece from Feature 1 and a bowl-lip fragment from Feature 25. The stem is complete, round in cross section, 12 mm in maximum diameter and 25 mm long. The elbow is obtuse-angled, while the stem tapers gradually to a rounded mouthpiece. The bore is smooth. The bowl fragment is plain and cylindrical in form (Figure 5:1,m). While these pipes are not out of place on a Young phase component, more elaborate forms, including high, finely decorated bowls with square or acute angled heels were also popular.

Lithics

The lithic assemblage from La Salle-Lucier South is derived principally from the bipolar reduction of pebble cherts obtained in the vicinity of the site. Numerous small unmodified chert pebbles were obtained from the excavations and, as with the modified specimens, they represent several primary geological sources. While some were identifiable as Kettle Point and Bayport chert, most are of a mottled light and dark grey chert of unknown source. Many specimens are small, stained with iron from the soil, or burnt, making source identification difficult. For these reasons, as well as the fact that very little transport of lithic raw materials is evident and that the source identification of the local pebble cherts would provide information of little or no cultural significance, no further attempt was made to identify the primary sources of the pebble cherts.

The lithic assemblage is dominated by products of a bipolar industry, including twenty-one bipolar cores. There is virtually no evidence of the availability or the use of raw materials of large size, which is usually indicated by the presence of hand held random or rotated cores. The array of flake types (primary, bipolar and secondary) resulting from this bipolar industry is typical of most Western Basin sites in extreme southwestern Ontario (Lennox 1982, Kenyon et al 1988, Reid 1982, 1983).

Table 5 provides the frequency of the various flake types (Lennox 1982, 1984, Lennox, Dodd and Murphy 1986) represented. Primary flakes, simply defined as flakes from cores, are presumed, in this assemblage, to have been obtained from bipolar cores. Though it is often difficult to identify individual primary flakes as bipolar flakes, thirteen primary flakes (24.5%) from this assemblage were so identified. The high incidence of nodular cortex present on sixteen of the fifty-three (30.2%) primary flakes provides further evidence for a bipolar pebble industry in this component. Shatter, angular or blocky pieces of chert, make up 19.4% of this assemblage. This debitage category may also be linked to the bipolar industry. Secondary flakes, the by-products of biface production or resharpening, are not common (17.5%) reflecting the scarcity of bifaces and, presumably, activities associated with these tools, at La Salle-Lucier South.

The only core type identified at La Salle-Lucier South was the bipolar core (Figure 6:a-h). The twenty-one specimens identified are small (Table 6) and thirteen specimens exhibit nodular (rounded, water worn) cortex often covering substantial portions of the core. These data indicate both the small size of the pebbles used and, together with the debitage to core ratio (5:1), show that the exploitation of pebble derived cores was not particularly exhaustive. None of the cores show signs of retouch or use.

Three of the four utilized flakes recovered are of Kettle Point chert and one is of Bayport chert. None of the specimens appear to have resulted from bipolar reduction and indeed three of the specimens appear too large to have derived from local pebble chert sources. They were likely brought to the site as utilized flakes or blanks. Use wear or intentional retouch suggest scraping (2) and cutting (2) functions for these artifacts (Figure 6:i,j). The utilized flake of Bayport chert from Feature 2 (Figure 6:k) has the dubious honour of being the largest piece of chert recovered from the site. This primary flake measuring 54 mm long, 33 mm wide and 11 mm in maximum thickness has a thin feathered lateral edge opposite a thick orthogonal-like fracture or "backing". These attributes and the fine alternate use retouch occurring along 27 mm of the feathered lateral edge suggests that this was a cutting tool.

The two biface fragments recovered include a 15 mm length of a drill midsection (Figure 6:1) and the corner of a thin (3 mm) biface showing bifacial use retouch and edge rounding which is likely the result of cutting (Figure 6:m).

The three projectile points recovered from La Salle-Lucier South include two point tips and a point base. While Levanna points (Ritchie 1961) are the diagnostic point type for the Younge Tradition, only the point tip from Feature 4 (Figure 6:n) seems to be of that type. The other point tip from square 2N2E appears to have had a broad blade with fine serrations (Figure 6:o) and most closely resembles early archaic Nettling points (Fox

1980). The point base from square 9SOW (Figure 6:p) exhibits low side notches or an expanding stem base, a convex unground basal edge and convex lateral blade edges. The point was made by edge retouching a large flake blank while leaving much of the flake's dorsal and ventral surfaces intact.

Feature 5 produced a complete ground stone celt (Figure 6:q) measuring 103 mm in maximum length, 50 mm in maximum width, adjacent to the bit edge, and tapering to 33 mm toward the poll end. Maximum thickness is 22 mm. The lateral edges show the remains of the chipping and pecking method of manufacture though these traces have all but been obliterated by grinding toward the central long axis on either face of the tool. The longitudinal cross-section is symmetrically biconvex, usually taken to suggest use as an axe, however, use retouch along the blade edge is unifacial, indicating that the celt was likely hafted and used as an adze.

The two pieces of ground and polished slate from squares 11NOW (Figure 6:r) and 10S1E (Figure 6:s) may be bannerstone and gorget fragments respectively. If so, they are not likely associated with the Late Woodland occupation.

A bi-pitted anvilstone recovered from Feature 6c was made on a large beach cobble measuring 130 mm in diameter and 68 mm in thickness. The pecked depressions characteristic of this tool form appear opposite one another on either flattened face of the cobble and measure 23 mm in diameter and 2 mm in depth. Here, as at Bruner-Colasanti (Lennox 1982:25), anvilstones are associated with nut shells (nut processing) and not with bipolar cores (core reduction), supporting Waugh's (1916:185) identification of these tools as "nutting stones".

None of the hammerstones found are particularly outstanding examples of the form. However hammering facets were observed on several pieces of fire cracked rock. Fire-cracked rock from the various excavation units was weighed and counted to provided an estimation of the size and distribution of this artifact class. The natural occurrence of rock in the site area is rare, indicating that the rock was brought to the site, presumably from a nearby but unknown source. Fire-cracked rock includes a wide range of igneous and metamorphic types but is never sedimentary. (cf. Brink et al 1986:105).

As with other cultural material, fire-cracked rock appears strongly associated with features at La Salle-Lucier South. One hundred and thirty six specimens weighing nearly 4 kg were recovered from the twenty-six square metre units excavated in the vicinity of features 1 to 5 and another 2 kg were recovered from those features. The forty square metre units excavated between 0 and 12 N produced only thirty-three specimens weighing just over 1 kg.

La Salle-Lucier North: The Springwells Phase Component

The area designated La Salle-Lucier North is identified as a Springwells phase component of the Western Basin Tradition. It includes that area of the excavations located north of 15N on the excavation grid, Features 9 to 24, 26 to 31, and 35 to 46, as well as associated post molds. All excavations of this component lay beneath the Highway 18 right-of-way except for exploratory test units to the east (Figures 2 and 7).

Features and Post Molds

Aside from the erratic distribution of post molds throughout this component several patterns are discernible. Most notable are two, roughly east-west oriented rows located toward the extreme north and south of the feature distribution (Figure 7). The curvature of the southern row, the post mold sizes in the northern row, and the concentration of features and post molds between these rows, suggest that they represent a palisade which encircled the entire component. The north row exhibits little curvature (especially if one includes in this row the few posts identified to the east, between the utility trench disturbances). This row is composed of larger post molds with diameters from 8 cm to 23 cm ($\bar{x}$ = 15.2), depths from 8 cm to 26 cm ($\bar{x}$ = 16.9). They are spaced an average of 35 cm apart, centre to centre. The south row exhibits a gentle curvature which may be projected to the east of the wide sewer trench disturbance to align with the three additional posts to the southeast of Feature 45. While the average spacing of the posts in the south row is identical to those of the north row (35 cm from centre to centre), these post molds have a smaller diameter (range = 4 cm to 11 cm, = 7.9 cm), perhaps influenced by their lesser depth (range = 4 cm to 15 cm, $\bar{x}$ = 9.5 cm) and the tapering of posts towards their bottoms. The southern row was set into sandy subsoil, yet immediately to the south the large stretch of clay subsoil begins. The curvature of the south row, when projected to the northeast, ties into the identified portions of the northern row, placing Feature 13 at the centre of an hypothesized circular enclosure measuring approximately 36 metres in diameter and encompassing an area of approximately 1000 square metres. This estimation

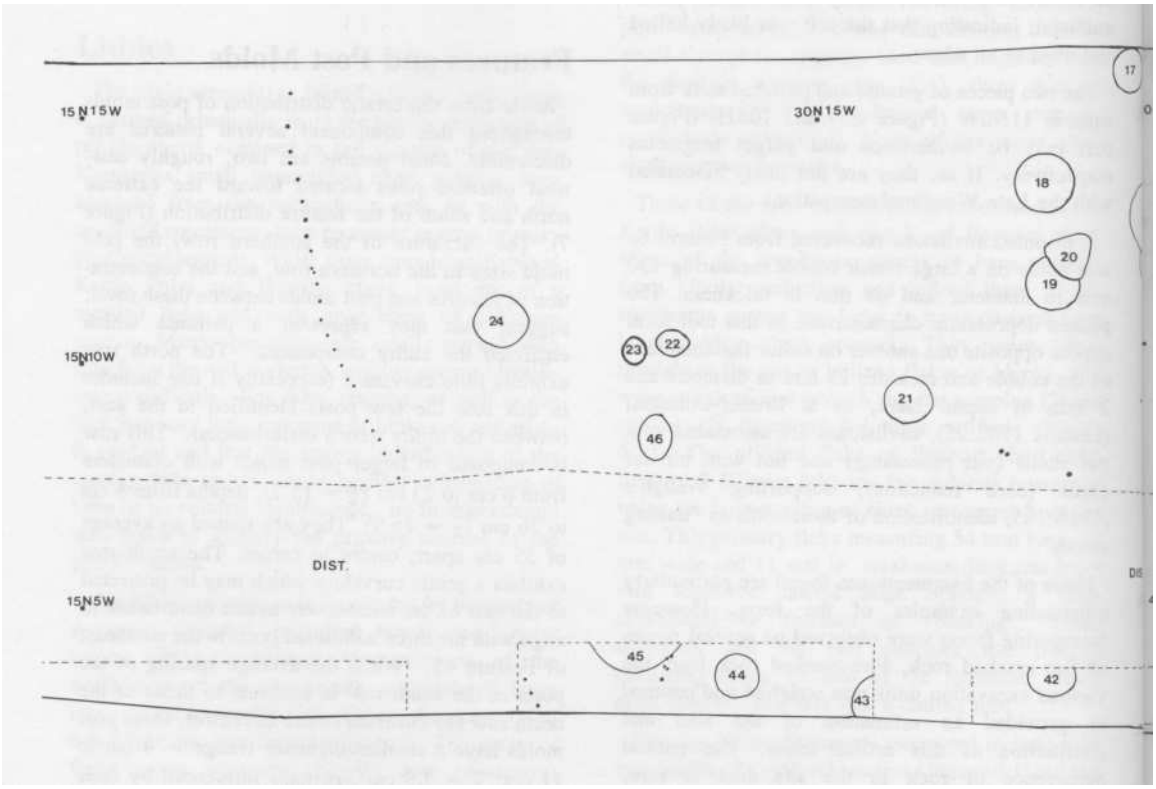
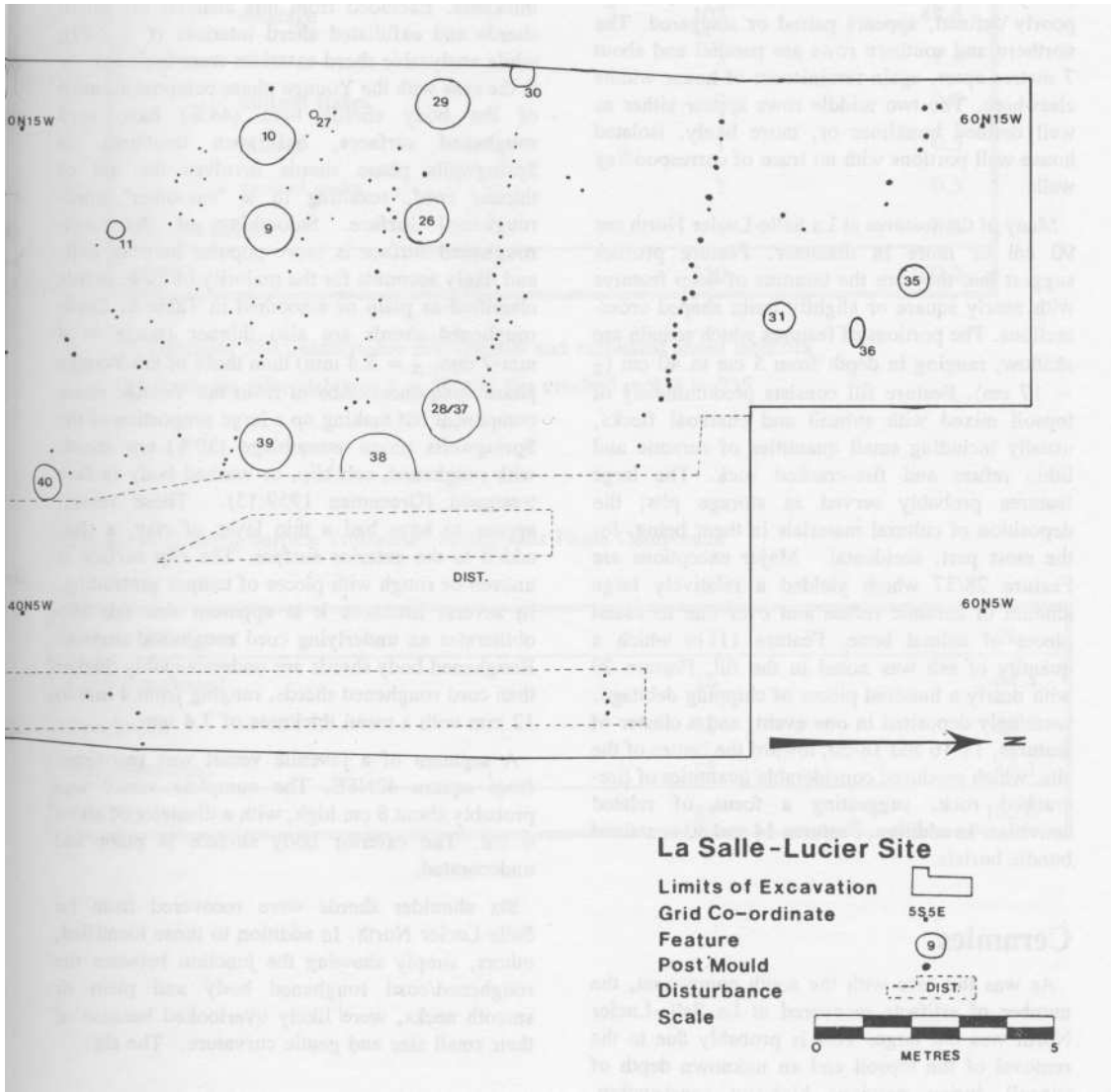


Figure 7. La Salle-Lucier: Springwells Phase Component


60N15W
60N15W
29
30
10
27
9
26
11
35
31
36
28/37
39
38
40
DIST.
40N5W
60N5W
N
La Salle-Lucier Site
Limits of Excavation
Grid Co-ordinate
5S5E
Feature
9
Post Mould
Disturbance
DIST.
Scale
0
5
METRES

of the size of the occupied area may be useful, but it must be regarded with some caution since cultural material was recovered in test units as far as 50 metres east of the excavation limits, suggesting either a long narrow site configuration or the presence of additional components.

There are three, perhaps four, additional rows of post molds toward the north end of the component and south of the north palisade. Each of the three northern rows is similarly composed of small posts with diameters ranging between 5 cm and 10 cm and averaging 7.5 cm. Depths range from 4 cm-22 cm and average about 9 cm. Spacing is approximately 30 cm from centre to centre. The posts form single lines reminiscent of the house walls at E. C. Row (Lennox 1989) and Liahn I (Kenyon 1988). The most southerly row, though poorly defined, appears paired or staggered. The northern and southern rows are parallel and about 7 metres apart, again reminiscent of house widths elsewhere. The two middle rows appear either as well defined bunklines or, more likely, isolated house wall portions with no trace of corresponding walls.

Many of the features at La Salle-Lucier North are 90 cm or more in diameter. Feature profiles suggest that they are the bottoms of deep features with nearly square or slightly basin shaped cross-sections. The portions of features which remain are shallow, ranging in depth from 5 cm to 40 cm (X = 17 cm). Feature fill consists predominately of topsoil mixed with subsoil and charcoal flecks, usually including small quantities of ceramic and lithic refuse and fire-cracked rock. The large features probably served as storage pits; the deposition of cultural materials in them being, for the most part, accidental. Major exceptions are Feature 28/37 which yielded a relatively large amount of ceramic refuse and over one thousand pieces of animal bone, Feature 11 in which a quantity of ash was noted in the fill, Feature 29 with nearly a hundred pieces of chipping debitage, seemingly deposited in one event, and a cluster of features, 14-16 and 18-20, toward the centre of the site, which produced considerable quantities of fire-cracked rock, suggesting a focus of related activities. In addition, Features 14 and 30 contained bundle burials.

Ceramics

As was the case with the south component, the number of artifacts recovered at La Salle-Lucier North was not large. This is probably due to the removal of the topsoil and an unknown depth of subsoil during previous highway construction. Undoubtedly the upper portions of those features recovered, and perhaps entire features and living floors, are missing for this reason. However, the general scarcity of cultural material in undisturbed contexts suggests that the site always had a low density of artifacts. The frequencies of artifacts recovered from the component are provided in Table 7.

Springwells phase ceramics are characterized by large, bag-shaped vessels decorated with horizontal bands of incised or impressed decoration on collared and usually castellated rims. New forms of vessel body decoration also appear early in the phase and these include roughened and ribbed paddled surfaces.

The body sherds from La Salle-Lucier North were examined for attributes of surface treatment and thickness. Excluded from this analysis are micro sherds and exfoliated sherd interiors (f = 589), while analysable sherd exteriors were included. As is the case with the Younge phase component, most of the body sherds here (44%) have cord roughened surfaces, but such treatment on Springwells phase sherds involves the use of thinner cord, resulting in a "smoother" cord-roughened surface. Smoothing of the cord-roughened surface is more popular here as well, and likely accounts for the majority of those sherds classified as plain or smoothed in Table 8. Cord-roughened sherds are also thinner (range = 4 mm-7 mm, = 5.4 mm) than those of the Younge phase component. Absent from the Younge phase component but making up a large proportion of the Springwells phase assemblage (39%) are sherds with roughened, self slip, or washed body surface treatment (Greenman 1939:13). These vessels appear to have had a thin layer of clay, a slip, added to the exterior surface. The slip surface is uneven or rough with pieces of temper protruding. In several instances it is apparent that this slip obliterates an underlying cord roughened surface. Roughened body sherds are understandably thicker than cord roughened sherds, ranging from 4 mm to 12 mm with a mean thickness of 7.4 mm.

A segment of a juvenile vessel was recovered from square 40N8E. The complete vessel was probably about 8 cm high, with a diameter of about 6 cm. The exterior body surface is plain and undecorated.

Six shoulder sherds were recovered from La Salle-Lucier North. In addition to those identified, others, simply showing the junction between the roughened/cord roughened body and plain or smooth necks, were likely overlooked because of their small size and gentle curvature. The six

Table 7. Artifact Class Frequencies: Springwells Phase Component

Artifact Class		f	%
Ceramics*			
	bodysherds	81	36.8
	shouldersherds	6	2.7
	necksherds	14	6.4
	rimsherds	5	2.3
	pipes	0	0.0
	other	1	0.5
Lithics**			
	debitage	107	48.6
	cores	3	1.4
	utilized flakes	0	0.0
	bifaces	1	0.5
	ground stone	1	0.5
Worked Bone		1	0.5
TOTAL		220	100.2

* Excludes 589 unanalysable microsherds and exfoliated sherd interiors

** Excludes microdebitage f = 50 and fire cracked rock f = 235

Table 8. Bodysherd Surface Treatment: Springwells Phase Component

Surface Treatment	f	%
Cord Roughened	36	44.4
Roughened	32	39.5
Plain/Smoothed	13	16.1
TOTAL	81	100.0

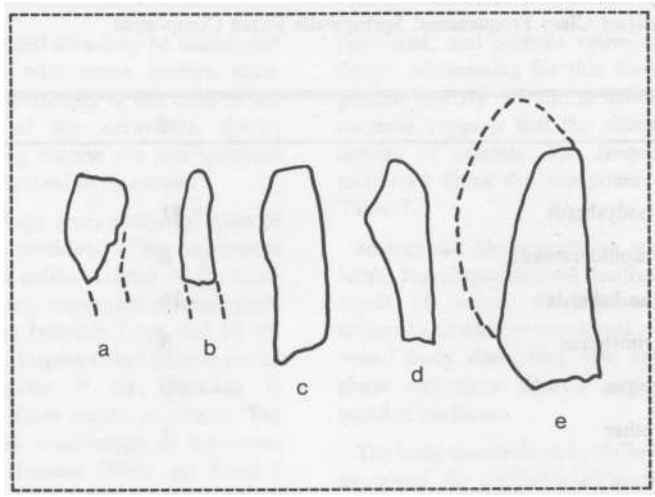


Figure 8. Rimsherd Profiles: Springwells Phase Component

decorated shoulder sherds exhibit a horizontal band of short, oblique, linear stamp impressions (4), multiple bands of angular or "L" shaped impressions (1) or a horizontal trailed line (1) (Figure 9:d-f).

Most neck sherds from La Salle-Lucier North are plain or smooth and undecorated (f = 10); two specimens exhibit roughened and undecorated surfaces. Two specimens are decorated, one exhibiting five parallel lines and the other (2 specimens from 1 vessel), a trailed triangular motif (Figure 9:d,e).

Only five rim sherds were identified in this assemblage and two of these, being small and badly weathered, are of questionable analytic value. Both of these small rims exhibit parallel obliques (linear stamp impressions ?) on incipient collars (Figure 8:a,b). Another rim sherd from Feature 37 exhibits a vertical cord roughened surface on the upper neck and incipient collar, and parallel oblique, rough, linear stamp impressions on its lip and interior surfaces (Figures 8:c and 9:b). A small rim fragment from Feature 14 also exhibits a short collar and parallel oblique, cord-wrapped-stick impressions on the upper neck, rim and interior surfaces (Figures 8:d and 9:a). The remaining rim sherd is from Feature 39 and exhibits a higher collar (30mm) with horizontal rows of dentate stamp impressions (individual teeth appear "C"-shaped) on the exterior, lip and interior surfaces. A castellation, appliquéd over the exterior and lip of this rim, exhibits the use of the same decorative technique and motif (Figure 8:e and 9:c).

A small cone shaped piece of fired, tempered clay was recovered from Feature 39 (Figure 9:g). The specimen is broken at one end, roughly cylindrical through the mid section, measuring 6 mm and 7 mm in width and thickness, and 13 mm in length tapering to a rounded and slightly off-centered point at the distal end. This specimen is very similar in size and shape to the legs of several ceramic figurines from the Savage Site (AdHm-29), 150 km to the northeast of La Salle-Lucier. The site is a late prehistoric Iroquoian occupation exhibiting considerable ceramic influence from the Wolf phase of the Younge Tradition (Murphy 1986).

Ceramics from the north component appear to be transitional between the Younge and Springwells phases. The vessel lips are thinner and incipient collars appear on all examples. Oblique tool impression on the collar of three specimens and the upper neck of at least one specimen, are reminiscent of the Riviere Wares of the Younge phase and may be included in Fitting's (1965) Vase Tool Impressed (2) and Vase Corded (1) types. Another collared and castellated specimen possesses horizontal rows of what appear to be dentate stamp impressions and, on the basis of the collar form and motif, is tentatively identified as Macomb Linear. The remaining specimen, which cannot be typed, has vertical cord roughening up to the lip, which is smoothed-over on the collar. Vessel necks are sometimes decorated with trailed motifs while shoulders are often demarcated using a variety of decorative techniques.

The assignment of the northern component to the early part of the Springwells phase is supported by body surface treatments. The trend is toward smoother body surfaces which are produced in several different ways. Cord-roughening still dominates the assemblage but cording of a smaller diameter is being used, resulting in a smoother body surface. Some bodysherds which appear to have been cord roughened are smoothed-over, resulting in nearly plain or smooth surfaces. Also, roughened surfaces, made by the application of a slip of clay (sometimes obviously covering a cord-roughened surface) are a major feature of the assemblage and may be considered a hallmark of the Springwells phase (Fitting 1965, Kenyon 1988, Kenyon et al 1988).

Lithics

The lithic assemblage from La Salle-Lucier North is not overwhelming in size or composition. It consists largely of debitage with a few cores and the rare tool or tool fragment (Table 7). No attempt was made to distinguish the primary source of the local pebble cherts since this exercise would be difficult and would contribute little to our understanding. However, two thirds of the debitage from this component (Table 9) is of exotic Laurel chert (Fox, personal communication 1988), which likely represents a single depositional event. But aside from this, the emphasis on local pebble cherts and their reduction using the bipolar technique mirrors the situation at La Salle-Lucier South.

Table 9 provides the frequencies of the flake types represented. Here the flakes derived from local pebble cherts (which includes a few flakes of Kettle Point Chert (2), Greywacke (3) and Flint Ridge Chalcedony (2)) may be contrasted with those of Laurel Chert from Indiana. The Laurel Chert, all obtained from Feature 29, likely represents one episode of deposition involving the reduction of a quarry blank. A small fragment of a biface tip, possibly a point tip, from this feature provides the only clue to the intended tool's form. The pebble Chert portion of the assemblage is small, consisting mainly of primary flakes obtained by bipolar reduction. Excluded from this analysis are fifty pieces of micro-debitage that were obtained from the flotation samples. They are too small to identify.

Three bipolar cores were recovered from Features 9, 37, and from a post mold. Two are complete, measuring 24 mm and 18 mm in length, 14 mm and 17 mm in maximum width and 9 mm and 6 mm in maximum thickness, respectively. All are made on local pebble cherts (Figure 9:h).

Four bifaces and fragments were recovered from La Salle-Lucier North. The single relatively complete specimen from Feature 39 (Figure 9:i) appears to have been triangular in form, measuring over 27 mm long and 25 mm in maximum width across the base. The base is gouge-like and exhibits edge rounding that continues 7 mm onto either face of the tool. Aside from the likelihood that this "basal" edge was utilized as a gouge or scraper rather than having been intentionally dulled, the biface would be described as a point base. The remaining biface fragments include a point tip of Laurel chert (Feature 29), the base of a stemmed point of Mercer chert (13N13E), and a midsection from a large biface of Flint Ridge chalcedony (50N8E).

The single piece of ground stone from Feature 37 appears to have been used as an abrader. It is an irregular cobble measuring 68 mm in length, 52 mm in width and 33 mm in thickness. Long parallel striations on one face appear to have resulted from the abrasion of a hard material such as chert.

Fire-cracked rock was common in the feature fill at La Salle-Lucier North, particularly in a cluster of features including Features 14-16 and 18-20, from which two-thirds of this assemblage was obtained. This material is not significantly different from that described for the south component. It is interesting to note that the size of fire-cracked rocks obtained from the feature cluster described above (f = 163, weight in grams = 5293), and that derived from all other features of La-Salle Lucier North (f = 72, weight in grams = 2436) are not significantly different (mean weights = 32.5 gm and 33.8 gm respectively). Kenyon (nd), suggests that the size distribution of fire-cracked rock provides indications of primary (both small and large fire-cracked rock deposited together) and secondary (selected larger pieces of fire-cracked rock) deposits. Thus, the fire-cracked rock from this component suggests not different activities but rather the same sequence of events resulting in the production and deposition of the subsamples. The greater abundance but similar mean size of the specimens from one subsample may be attributed to the greater depth of features in the central portion of the site.

Worked Bone

The single piece of worked bone, recovered from Feature 37, consists of a short section from the edge of a painted turtle carapace, ground smooth along the edge and underside. This specimen may be a fragment from a container or rattle (Figure 9:j).

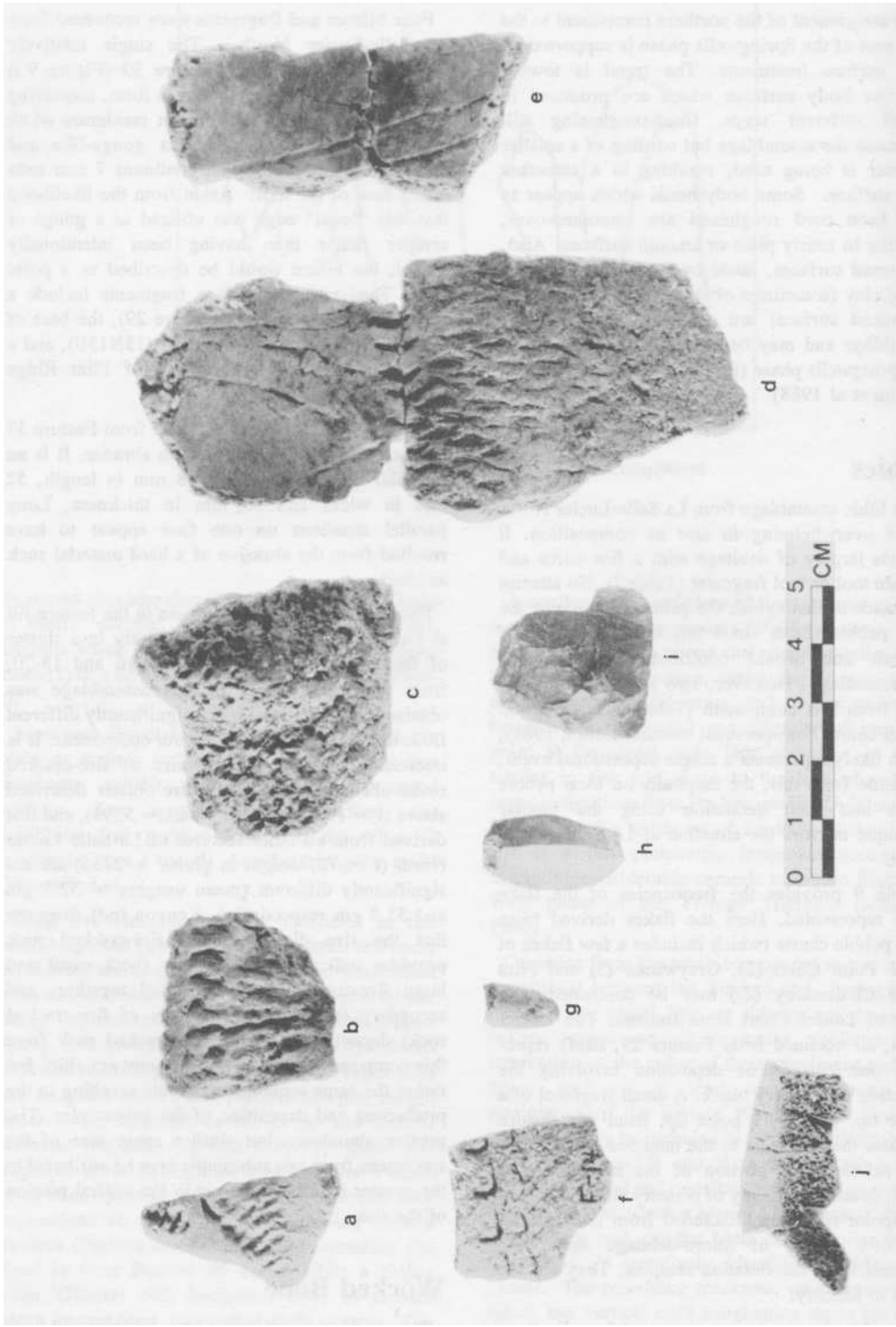


Figure 9. Artifact Examples: Springwells Phase Component

Table 9. Debitage Morphology: Springwells Phase Component

Flake Type	Pebble Cherts	Laurel Chert	TOTAL	
	f	f	f	%
Primary	20	15	35	32.7
Secondary	5	25	30	28.0
Shatter	6	7	13	12.2
Fragments	10	19	29	27.1
TOTAL	41	66	107	100.0

a Rimsherd with cord-wrapped-stick motif on and below collar (F-14)
b Rimsherd with cord-roughened neck and smoothed-over-cord on collar (F-28/37)
c Castellated rimsherd with horizontal rows of dentate stamp impressions on collar (F-39)
d - e Fragments of same vessel with trailed triangular motif on plain neck, oblique linear stamp impressions on shoulder and cord-roughened body. A roughened slip obliterates the cord-roughening lower on the vessel body F-28/37)
f Decorated shouldersherd with cord-roughened body (F-14)
g Ceramic doll leg (F-39)
h Bipolar core (F-28/37)
Base of triangular biface with ground or utilized basal edge (F-39) j
Fragment of ground Painted Turtle carapace (F-28/37)

Key to Figure 9

Table 10. Frequency and Weight of La Salle-Lucier Faunal Classes

Class	Younge		Springwells		TOTAL	
	NISP	w (g)	NISP	w (g)	NISP	w (g)
Osteichthyes	166	5.65	768	9.02	934	14.67
Mammalia	29	26.08	49	5.31	78	31.39
Aves	2	1.40	53	5.13	55	6.53
Reptilia	2	0.27	20	2.13	22	2.40
Gastropoda	4	0.27	0	0.0	4	0.27
Class Unknown	59	1.03	601	5.80	660	6.83
TOTAL	262	34.70	1491	27.39	1753	62.09

Burials

Human remains were found in two features at La Salle-Lucier North, Features 14 and 30. Unfortunately no time was allowed for a physical anthropologist to examine the remains as they were taken from the site for reburial on Walpole Island by representatives of that Native community. The human bone in Feature 14 may have been the remains of a bundle burial interred in the upper portion of a storage pit. If this were the case most of the bundle had been previously removed by the excavation of the Highway 18 roadbed. The remaining cranium fragment and a femur midshaft, were large and well formed, suggesting they belonged to an adult male.

The burial in Feature 30 was a bundle burial apparently interred into a feature that was excavated for that purpose. Unfortunately this feature's west side had been removed by the excavation of the service trench which parallels the west limit of our excavations. The service trench had removed approximately half of the bundle, badly fragmenting the remainder of the cranium and long bones. The cranium and mandible lay immediately south of the stack of east west oriented long bones which included portions of two femora and tibiae, a radius, a humerus, and a fibula. The bones were well formed but gracile, possibly those of an adult female. Amid the stack of long bone fragments was a small pocket of calcined bone, tentatively identified as those of a child based on the thinness of the cranial fragments.

Faunal Remains

A total of 1,753 animal bones weighing 62.09 grams was recovered during excavation of the La Salle-Lucier features and post-molds (Table 10). Unfortunately, this assemblage is composed largely of fragmented and calcined bone that could not be identified as to class (37.7%). In order to interpret the distribution of faunal remains across the La Salle-Lucier site, it is necessary first to discuss recovery methods, as different techniques will often provide different results. As a rule, all feature fill from the 49 features was screened through 6 mm (quarter-inch) mesh; however, in addition, bulk soil samples were collected from 37 of the features for flotation. Virtually all bone (1734 items; 98.9%) was recovered from the flotation sample. Most features not selected for flotation did not yield faunal material. The small sample of bones recovered from dry screening is biased towards mammals, which account for 37% of the screened sample and only 5% of the floated sample (Table 11). These results are consistent with those obtained in the analysis of the Wiacek faunal material (Lennox et al 1986: 118-129). By chance rather than by design the flotation samples from the two components are comparable in size and represent similar proportions of the feature fill. Thirteen of the fifteen Younge phase features were sampled; the 588 litres of soil floated represent 15.3% of the total estimated feature volume. Twenty-four Springwells phase features were sampled out of the thirty-four excavated. The 550 litres of floated soil represent 18.2% of the total estimated feature volume. Despite the fact that over half the features were sampled for flotation, the majority proved to be virtually empty with only three features producing significant amounts of faunal remains: Feature 6A (150, 8.6%), associated with the Younge phase occupation; and Features 10 (115, 6.6%) and 28/37 (1054, 60.1%), attributed to the Springwells occupation (Table 12). Together these features account for 75% of the total assemblage. The scarcity of faunal remains may be the result of poor preservation. It may also suggest that the features were used as storage receptacles and that they were cleaned out before they were reused.

Most (85%) of the faunal remains recovered are associated with the later, Springwells, component (Tables 10 and 12). A breakdown by component of the assemblage identified to the genus and species level is presented in Table 13. Given the meagre nature of the assemblage and the predominance of faunal remains associated with the Springwells occupation, no in-depth comparisons between the two components were undertaken. However, in general, both occupations appear to represent similar faunal exploitation strategies. Both faunal assemblages are dominated by fish remains (63% and 52% for Younge and Springwells phases respectively), and, of the fish remains identified to genus or species, freshwater drum, bowfin and catfish form the majority in each assemblage. Of the mammals, deer occurs in both components, whereas muskrat was identified only in the Younge phase features and raccoon only in the Springwells phase features. Again, given the small sample size, the significance of this discrepancy cannot be determined. Bird remains are rare in the sample of bones from the Younge phase occupation, and the large number of bird bones in the Springwells component probably represents the remains of one barred owl.

Table 11. La Salle-Lucier Screen and Float Samples by Class

Class	Screened		Floated		TOTAL	
	NISP	%	NISP	%	NISP	%
Osteichthyes	6	31.6	928	53.5	934	53.3
Mammalia	7	36.8	71	4.1	78	4.5
Aves	0	0.0	55	3.2	55	3.1
Reptilia	2	10.5	20	1.2	22	1.3
Gastropoda	0	0.0	4	0.2	4	0.2
Class Unknown	4	21.1	656	37.8	660	37.7
TOTAL	19	100.0	1734	100.0	1753	100.1

Table 12. Identified Faunal Remains by Feature

Species	Frequency by Feature									TOTAL
	Younge			Springwells						
	5	6A	7	10	11	14	26	28/37	39	
Deer	7						1			8
Muskrat		3								3
Raccoon					5					5
Black Squirrel									1	1
Barred Owl								12		12
Painted Turtle								1		1
Freshwater Drum		4	1			1		1	1	**8**
Bowfin		12					1	2	1	16
Walleye/Sauger		1						1		2
cf Bullhead		1		3				1		5
Rock Bass		1						1		2
cf Largemouth Bass		1								
TOTAL	7	23	1	3	5	1	2	19	3	64

Table 13. Faunal Remains Identified Below Class

Class	Younge		Springwells		TOTAL	
	NISP	%	NISP	%	NISP	%
Bowfin (Amia calva)	12	31.6	5	11.6	17	21.0
Freshwater Drum (Aplodinotus grunniens)	5	13.2	4	9.3	9	11.1
cf Bullhead (Ictalurus sp)	1	2.6	5	11.6	6	7.4
Rock Bass (Ambloplites rupestris)	1	2.6	1	2.3	2	2.5
Walleye/Sauger (Stizostedion sp)	1	2.6	1	2.3	2	2.5
cf Largemouth Bass (Micropterus sp)	1	2.6	1	2.3	2	2.5
Sucker (Catostomus sp)	0		1	2.3	1	1.2
Perch	7	18.4	0		7	8.6
White tailed Deer **(Odocoileus virginianus)**	7	18.4	1	2.3	8	9.9
Raccoon (Procyon Iotor)	0		**5**	11.6	**5**	6.2
Muskrat (Ondatra zibethica)	3	7.9	0		3	3.7
Black Squirrel (Sciurius carolinensis)	0		1	2.3	1	1.2
Mouse (Mus sp)	0		1	2.3	1	1.2
Squirrel (Scuiridae sp)	0		1	2.3	1	1.2
Carnivore (Carnivora sp)	0		1	2.3	1	1.2
Rodent (Rodentia sp)	0		2	4.7	2	2.5
Barred Owl (Strix varia)	0		12	27.9	12	14.8
Painted Turtle (Chrysemys picta)	0		1	2.3	1	1.2
TOTAL	38	99.9	43	99.7	81	99.9

Discussion of the Faunal Assemblage

The predominance of fish and the presence of turtles in both components, together with the identification of muskrat in the Younge phase sample, and raccoon and barred owl in the Springwells phase sample, indicate subsistence strategies oriented towards the exploitation of aquatic and riverine environments. The list of identified species suggests a late spring to summer occupation for both components of the La Salle-Lucier site. This conclusion is based on the predominance of summer spawners such as drum, bowfin and catfish and the presence of turtles, which are available only in the warm months. Spring spawners such as walleye, sucker and perch are represented, but in smaller numbers. The mammalian remains, deer, raccoon and muskrat could have been caught at any time of the year. The La Salle-Lucier faunal remains are similar to those recovered from Robson Road, a Western Basin Tradition site located in southern Essex County (Kenyon et al 1988). One difference is that the Robson Road site yielded a substantial amount of burbot (Lota iota) and some whitefish (Coregonus culpeaformis), two late fall-winter spawners that also are available in quantity in early spring (Prevec 1988). The absence of these species from La Salle-Lucier lends credence to the suggestion that the site was not occupied during the cold season.

Archaeobotany

Few clues to the natural environment of the La Salle-Lucier site can be gained from modern observations since the long history of European settlement in Essex County (Lajeunesse 1960:lii) has effectively removed all of the original vegetation from the site vicinity. To investigate the prehistoric subsistence strategies and natural environment, a total of 1,138 litres of soil samples were collected during the excavations for water flotation. Thirteen of the fifteen Younge phase features were sampled and the 588 litres of soil floated from these features represent 15.3% of the total estimated feature volume from this component. Twenty-four Springwells phase features were sampled out of the thirty-four excavated. The 550 litres floated from this component represent 18.2% of the total estimated feature volume. As described above, each component is represented by about equal volumes of floated soil and the frequencies of plant classes recovered should be somewhat comparable. However, the Younge phase samples are from relatively undisturbed features, while the Springwells phase samples represent only the base of features excavated from under the roadbed of Highway 18. This perhaps affects their comparability. Although only a small sample of wild and domesticated plants (f=259) was recovered from both components of the site (Table 14), it provides evidence for changing subsistence strategies between the Younge and Springwells phases of the Western Basin Tradition.

The most common wild plant remains recovered from the Younge phase component are black walnut and hickory (Table 14). Six species of hickory are native to the area (Fowells 1965:110-135; Hosie 1969:138-148), and the examples recovered from La Salle-Lucier are of a thin-shelled variety. Among the thin-shelled hickories, only the shagbark (Carya ovata) is considered edible (White 1946:39). Shagbark hickory commonly grows on "deep, moist soils of alluvial origin" (Fowells 1965:129): the characteristic soils of the La Salle Sand Plain. A total of ten grass seeds comprise the remainder of the wild species from the Younge phase component. The small size of the charred grass seeds (ca. 2.1 mm to 3.5 mm), and the great number of potential species in the area make identification difficult if not impossible. As discussed in the following section, environmental data suggest that grasses and prairie forbs may have been present near the site, where they could have been utilized or incidentally deposited.

Corn (Zea mays), was recovered from nine or 70% of the Younge phase features but the remains are not prolific, and are represented by less than a gram of fragmented kernels and cob cupules. Identification of the maize variety is not possible, but elsewhere, corn cultivated during the Younge phase appears to be a small, eight-rowed Northern Flint variety (Cooper 1982:6; Lennox 1982:49). Corn is consistently recovered from the majority of Younge phase sites (Reid 1982, 1983; Lennox 1982; Murphy 1988), but it never appears to be particularly abundant.

Settlement data for the Younge phase suggest that these people moved throughout the year in established patterns to exploit various natural resources. Corn and possibly other cultigens may have been grown in small garden plots planted near late spring or summer camps (Ferris 1989:18-20). Seasonality is difficult to assess from the limited archaeobotanical assemblage at La Salle-Lucier. Roughly equal quantities of corn and nut shell were recovered. This does not reveal any clear emphasis on a particular resource. Both groups of foodstuffs are harvested in the fall, but may be stored and consumed throughout the year. The presence of cob cupules in the sample suggests that corn was grown in the local area, perhaps during the occupation of the site. When combined with the location and

faunal remains, this data supports a warm season occupation.

The distribution of species represented in the archaeobotanical assemblage from the Springwells phase component is very similar to that of the Younge phase component (Table 14). This suggests that during both phases a similar adaptive strategy was directed toward the exploitation of similar resources during the same time of the year. Charred hickory nut shell dominates the wild plant assemblage, and these again appear to be the thin-shelled shagbark variety. Black walnut, though present on the Younge phase component, was not recovered from the Springwells phase features. This may suggest that they were of less importance later in time or may simply be the result of sampling low frequencies. Eighteen small grass seeds, and a number of other seeds from small berries complete the wild plant assemblage. Taken as a whole, these plants represent the mid to late summer months when large numbers of bramble berries, weeds, etc., would be found near cultivated fields or interspersed throughout disturbed areas near the settlement. A much greater number of these seed types from discrete deposits would be needed before one could suggest subsistence or seasonal implications. In small numbers, charred seeds of grass, raspberry, elderberry, sumac, and to some extent hawthorn, may simply be the products of natural seed rain and incidental deposition. A pattern is developing here, however, in that grass seeds are the most common wild seed from both components of the site.

Just over one gram (1.29 gm.) of corn fragments (Zea mays), and three tobacco seeds (Nicotiana rustica) were recovered from the Springwells component (Table 14). Corn is represented exclusively by charred kernel and cob fragments; the remains of peduncles or stalk fragments are absent. Only one relatively complete kernel was identified: 10.2 mm wide and 7.0 mm thick. The crescent shape of this example and other fragments recovered compare closely with those of the eight-rowed Northern Flint variety.

Although nearly equal volumes of flotation samples were processed from the two components at La Salle-Lucier, corn remains are twice as common from the Springwells samples as they are in those from the Younge phase component. The increasing sedentism indicated by the house patterns and the palisade in the northern component, is likely related to a greater emphasis on maize horticulture by Western Basin groups after A.D. 1200. Elsewhere, corn first appears in larger quantities on Springwells phase sites such as Liahn 1 (Kenyon 1988), Dick (Reid 1983), and Belanger (Ferris and Crundwell 1988). A total of 45 grams of charred corn is reported from the Dick site (Reid 1983:48), and a single feature from Belanger contained 15.6 grams of charred corn fragments. Well preserved cob fragments from Belanger indicate that eight-rowed Northern Flint was the variety cultivated by Western Basin peoples at this time (Ferris and Crundwell 1988:13).

Charred wood was analyzed from both components at La Salle-Lucier to help reconstruct the arboreal environment of the area during the occupations. Charred wood fragments were not abundant and each fragment large enough for identification was examined (Table 15). Remains from the site appear to represent two distinctive forest associations, which reflect differences in soil types and drainage patterns within the immediate site area. Most of the charred wood belongs to an oak-hickory-beech group; this may represent fuel gathered from the seasonally drier, sandy area of the site, or wood gathering to the south or east. A second forest association is represented by black ash-elm-soft maple, trees that would primarily be found on damper ground closer to the water table near Marentette Drain or the Detroit River (Fowells 1965:726). Black ash and the elms were once the dominant tree species on poorly drained soils in Essex County (Finlay 1978). The distribution of tree species from the two components may also be a reflection of land use. Within the Springwells component, there is much greater emphasis on oak-hickory-beech (93.3%), while the Younge Phase component displays nearly equal frequencies of the dry and wet forest associations (Table 15). These differences may be the result of more intensive forest clearance by Springwells groups on drier soils to provide for garden plots.

Due to the early date of settlement and land clearance, specific information on the natural vegetation of the La Salle area is not found among 19th century land records. However, an examination of topography, soils and drainage, combined with the archaeobotanical data, a number of 17th and 18th century accounts, and several modern botanical studies conducted nearby, provide a fairly clear picture of the natural environment of northwestern Essex County. Here, there are three vegetation zones: an oak-hickory forest on the drier sandy uplands adjacent to the Detroit River, an ash-elm swamp forest characteristic of the poorly drained interior clay plain, and prairie enclaves associated with a number of unique soil and drainage conditions on the La Salle Sand Plain. Charred wood from the site indicates that the primary forest in the vicinity was a variant of an oak-hickory type with beech as a common associate. Extant areas combining these tree species are common in Michigan and Ohio, and are known as "oak-

Table 14. Charred Plant Remains

	Component			
	Younge Phase		Springwells Phase	
Type	f	%	f	%
Wild Species				
Hickory Shell	25	53.2	27	47.3
Walnut Shell	11	23.4	-	-
Grass Seed	10	21.3	18	31.6
Raspberry	-	-	4	7.0
Elderberry	-	-	1	1.7
Sumac	-	-	1	1.7
Hawthorn	-	-	1	1.7
Unidentifiable	1	2.1	5	8.8
TOTAL	47	100.0	57	99.8
Cultigens				
Corn Kernel	1	1.8	1	0.9
Kernel Frag.	18	33.3	50	49.5
Cupule	35	64.8	44	43.5
Embryo	-	-	3	3.0
Tobacco	-	-	3	3.0
TOTAL	54	99.9	101	99.9

hickory" forests (Yarnell 1964:4) or "oak openings" (Prahl, Brose and Stothers 1976:255).

A prairie may be defined as "a community of certain native grasses, forbs and associated wildlife which occurs in a treeless or near treeless environment" (Pratt 1979:67). Prairies, isolated plains, or meadows were once found across southern Ontario (Kenyon 1976:5-7), particularly near Windsor, and along the shore of Lake St. Clair (Pratt 1979:6). The prairie grasses and forbs characteristic of the clearings in Essex and Kent counties are generally considered to be remnants of prairie vegetation that spread over portions of temperate northeastern North America during a hot dry climatic interval, known as the Xerothermic-Hypsothermal Period, 5,000 years ago. This warming trend caused increased aridity, and grass dominated prairies indigenous to the western part of North America pushed eastward into southern Ontario, southern Michigan, Ohio, and western Pennsylvania (Maycock and Hills 1970:1; Rogers 1966:195; Pratt 1979:60). Much of this "Prairie Peninsula" reverted back to hardwood forest once rainfall levels increased; however, small pockets of prairie vegetation persisted in areas with a dry microclimate or on soils with moisture conditions that deterred forest development. In all, an estimated 40,000 hectares of western Essex, western Kent and southwestern Lambton counties were open plains or "prairies" prior to modern agricultural development (Pratt 1979:5). The survival of this vegetation pattern into the historic period is due to a number of factors, though the primary reason appears to be the make-up of the soils combined with a high water table near Lake St. Clair and western Lake Erie. The level topography in this area results in slow run off in the spring, allowing very wet conditions to persist into the early summer. Then, where the clay plain is overlain with sand, the summer heat and limited rainfall in Essex County (Brown, McKay and Chapman 1968:32), selects against a large number of tree species, but encourages prairie grasses and forbs (Rogers 1966:195). Many authorities also suggest that natural fires, and possibly intentional burning by Native peoples and later Europeans also facilitated the persistence of prairie vegetation. Intentional burning by Native peoples in the Delaware area west of London, Ontario, was recorded by Moravian missionaries on a journey from Pennsylvania to the Fairfield settlement on the Thames River in Kent County (Gray 1954). On the 20th of May, 1798, the missionaries encountered "immense tracts of land which had lately been set fire to by Indian hunters... By this means the country is made more open to hunt in, and produces greater abundance of grass for the deer to feed on" (Gray 1954:126). Day (1953) has collected many references for the use of fire in the northeastern United States by Native peoples for a variety of purposes which include driving game, improving grassland habitat, and warfare. The only surviving tall-grass prairie in Ontario, the Ojibway prairie south of Windsor, appears to have been particularly susceptible to grass fires caused by lightning, and modern attempts to prevent fires from spreading onto residential property has recently resulted in increased tree growth within former grasslands (Pratt 1979:41). The Ojibway Prairie Complex is a tract of undeveloped forest interspersed with natural clearings. This area, located south of Windsor, has been spared intensive farming or industrial development since the early 1900's and is now protected as a natural reserve (Pratt 1979:9). The Ojibway Prairie Complex has been examined by botanists on a number of occasions and provides much of what is known concerning prairie environments in Ontario. The Ojibway Prairie includes tall-grass prairie, pine oak (Quercus palustris) savannah, and black oak (Quercus velutina) - pignut hickory (Carya glabra) forest (Maycock and Hills 1970; Pratt 1979:23-34). According to Maycock and Hills; "This Prairie is phenomenal. The grasses grow higher than a man and some of the taller forbs are higher" (1970: 5). Tall-grass prairie enclaves gradually merge into oak savannah or oak-hickory forest, with smaller trees, shrubs and brambles found on sites favouring their growth. This open and semi-open habitat is ideal for supporting upland mammal and bird species, as food reserves are concentrated much closer to the ground than they are in deciduous or mixed forest environments.

The La Salle-Lucier site is situated about 3.5 kilometres south of the present limits of the remaining grassland. But, the charred wood recovered from the site, as well as historic accounts suggest it was very near an interface of the oak-savanna and the oak-hickory forest. Small, charred grass seeds were the most common wild plant taxa recovered from the site, indicating the presence or utilization of open grassland in the area. The significant frequency of beech in the charred wood sample, a species not reported from the Ojibway Prairie Complex (Rogers 1966; Pratt 1979), also suggests that part of the forest on the Colwood soils in the La Salle area may have been more developed than those to the north near Ojibway.

The natural environment in the region of the La Salle-Lucier site is unique to the area of Lake St. Clair and the Detroit River. The soils, charred wood data and available documentary sources demonstrate that the La Salle-Lucier site was located within an oak-hickory or oak savannah forest near areas of long grass prairie. This

Table 15. Charred Wood

	Younge Phase			Springwells Phase		
Species	*No. of Features	Weight (gm)	%	*No. of Features	Weight (gm)	%
Oak	4	2.73	18.9	5	2.68	31.4
Hickory	3	2.48	17.2	5	2.19	25.7
Beech	4	2.35	16.3	4	3.09	36.2
Black Ash	3	2.11	14.6	-	-	-
White Elm	1	2.05	14.2	-	-	-
Elm	3	1.92	13.3	-	-	-
Soft Maple	1	0.48	3.3	2	0.43	5.0
Rock Elm	2	0.30	2.1	1	0.09	1.0
White Ash	-	-	-	1	0.05	0.6
TOTAL	-	14.42	99.9	-	8.53	99.9

* Number of features containing wood type

environmental setting is one of great natural productivity, providing access to forest, prairie, and riverine resources. The quantities of fish in the Detroit River can be considered the major animal resource of the region; however, deer and elk, wild turkey, and the greater prairie chicken were likely present near the La Salle Lucier site in greater frequencies than anywhere else in the province. Exploitation of these species may also have involved the use of fire, which in turn helped to maintain the grassland and savanna environment. Plant foods from the marshes, oak-hickory forests, and prairie added to the subsistence base.

Conclusions

The La Salle-Lucier site contains two horizontally separated components of the Western Basin Tradition, a Younge phase component (ca 1100 A.D.) located towards the south, and a Springwells phase component (ca 1200 A.D.) located in the northern portion of the excavated area. The excavations were limited in area to those portions of the site likely to be affected by the reconstruction of Highway 18. Test-pitting revealed cultural materials distributed for some distance to the east, representing a continuation of those components identified and perhaps additional but undefined occupations.

The comparison of those areas excavated beneath existing Highway 18 with those areas excavated to the east indicates that all top soil and portions of the subsoil had been removed from the site areas located beneath the road bed. Thus the number of artifacts recovered from each component are few and the preservation of settlement data sporadic. No complete house structures have yet been identified for the Younge phase in Ontario or Michigan. The rows of post molds identified at La Salle-Lucier South likely represent short sections of house walls, as the single row pattern here appears similar to house wall configurations for the Spring-wells phase component, but the definition of entire house patterns was hindered by the small size of the area excavated, the large number of disturbances, and the depth of overburden removed.

The Younge phase peoples appear to have selected the site area for habitation during the warm season because of the abundance of fish, and perhaps during the fall for nuts. Small family groups probably spent the coldest months of the year at inland locations subsisting on stored foods supplemented by hunting and trapping. They came together again in the spring for the spawning fish runs and apparently planted some corn at that time. The settlement data from the site are similar to many other Younge phase occupations where a general locality was repeatedly exploited on a seasonal basis. Archaeologically, this strategy results in a scattering of storage pits which, over time, may extend over several hectares. Certain favoured localities, particularly sand ridges over-looking lakeshores, such as that at Robson Road (Reid 1982; Kenyon et al. 1988), or river flats, such as those at Krieger (Kidd 1954) and Dymock (Fox 1986), often reveal a mass of overlapping pit features with dense, occupational debris. Similar feature distributions are recorded for virtually all larger sites with the exception of the Younge phase component at the Bruner-Colasanti site where, in the large area of excavations, features were distributed in definable clusters (Lennox 1982). Riverside locations such as that of the La Salle-Lucier site with less physical limitations may display a more dispersed feature pattern and occupational debris may be sparse. Feature clusters may have been present but were difficult to discern due to the small area exposed.

By the Springwells phase there was, at La Salle-Lucier and elsewhere, a greater emphasis on corn (here about twice as much corn was deposited in feature fill) and the summer settlement had become more sedentary, as is suggested by the presence of a palisade as well as house structures. The palisade is one of the most notable features of the Springwells component. Consisting of a single row of posts, much like the Springwells phase house walls, the palisade posts are, however, slightly larger and deeper than the house wall posts. The location of the palisade and particularly the curvature of the southern row allow settlement size to be estimated at about 1000 square metres. Within the palisade four house walls are identifiable. Two rows occur seven metres apart, which is similar to house widths recorded for Springwells phase structures elsewhere. Two additional rows of posts are unmatched but their location suggests house reconstruction had occurred during successive occupations of the site. Toward the southern half of La Salle-Lucier North there is a large area devoid of post molds with only shallow feature remnants. There may have been more houses here, the evidence for which may have been destroyed.

Well defined house structures for Springwells phase sites exist at Liahn I (Kenyon 1988) and E.C. Row (Lennox 1989). At Liahn I the longhouse was 24 metres long, 7 metres wide, and possessed rounded ends. Post molds averaged 10 cm deep and 5.5 cm in diameter (Kenyon 1988: 5). Although no houses at E.C. Row produced complete length measurements, minimum lengths of 7 m, 18 m, 25 m and 30 m were recorded. E.C. Row houses are wider, measuring 8.0 m and 8.5 metres. The ends exhibit rounded corners but

square end walls. Wall posts averaged 14.9 cm deep, 6.9 cm in diameter and were spaced approximately 30 cm apart (Lennox 1989).

Ceramics from the Younge phase component fall into two of Fitting's (1965) Riviere ware ceramic types (distinguished on the basis of the tool used): Vase Tool Impressed (10) and Vase Dentate (7). High, gently constricted necks are smooth, sometimes including additional bands of tool impression or tailed motifs. Vessel bodies are cord roughened. Ceramics from the north component appear to represent the Younge phase transition into the Springwells phase and include Vase Tool Impressed (2), Vase Corded (1), and another rimsherd tentatively identified as Macomb Linear. Body sherd surface treatment supports our inclusion of the northern component in the Springwells phase. Smoother body surfaces were attained in several different ways including roughened surfaces, a hallmark of the Springwells phase (Fitting 1965, Kenyon 1988, Kenyon et al 1988). The ribbed-paddle surface treatment was absent from this assemblage but appears consistently in varying proportions within Springwells phase assemblages east of Lake St. Clair (cf. Ferris and Crundwell 1988, Kenyon 1988, and Murphy 1987) and at Robson Road north of Point Pelee (Kenyon, Ferris and Hagerty 1988). Whether this occurrence is a temporal (later) or spatial (eastern) phenomena is a question that can only be answered with contributions from additional assemblages.

Other ceramic artifacts include a short stemmed obtuse pipe elbow and plain bowl fragment from the south component and a piece of a ceramic figurine from the north component. No evidence of daub was recovered from either component.

The lithic assemblages from the Younge and Springwells phase components are nearly identical and typically meager. Local pebbles were reduced by the bipolar technique resulting in a small assemblage of debitage with the few utilized flakes or bifaces having been brought or traded in from elsewhere. The lithic assemblage at La Salle-Lucier bears a strong resemblance to that of the late Middleport Wiacek site (Lennox, Dodd and Murphy 1986) and perhaps to other Ontario Iroquois assemblages. This is obviously not because of any cultural affinity, but is likely due to the scarcity of good local chert sources, the use of pebble cherts and perhaps also due to the shared importance of fishing to their subsistence pursuits. The scarcity of mammalian remains here is reflected in the scarcity of hunting equipment (points) and processing equipment (scrapers and bifaces), as is also the case at the Wiacek site.

Portions of two burials were identified in the Springwells phase component but both had been disturbed by previous construction and no time was permitted for detailed analysis. Field observations indicate that one, and likely both, burials were secondary bundle burials. One was probably that of an adult male, the other, of an adult female associated with a cremated infant. Burials are a common inclusion on Western Basin sites especially on those thought to have been occupied during the warm season. Cremated infants associated with bundle burials (possibly females) were also present at the Lucier and adjacent E.C. Row sites (Lennox 1989). This pattern raises the possibilities of death during child birth, infanticide or, more simply, the interment of young individuals with relatives.

The faunal analysis suggests there was no significant difference in the exploitation of faunal resources between the two components although most faunal remains are from the Springwells phase occupation. Exploitation of local resources emphasizes riverine environs concentrating particularly on fish which comprised 80% of the assemblage identifiable to class. The presumed availability of fish particularly during their spawning seasons suggest spring to summer occupations. White fish and burbot, particularly available during late fall and winter, are absent from the La Salle-Lucier components, suggesting the site was unoccupied during the cold season. Further wetland exploitation is indicated by the presence of turtles and muskrat. Mammalian remains account for only 13% of the assemblage identified to class and consist of deer, raccoon, muskrat, and squirrel.

The identification of carbonized plant remains provides data to help reconstruct the environment and subsistence of the La Salle-Lucier occupations. The charred wood identified indicates that the site area lay within an oak-hickory forest associated with the drier outwash sands in the immediate vicinity of the site. A wet forest zone nearby is indicated by the presence of a second forest association consisting of black ash-elm-soft maple. These species were likely present in the wetlands adjacent to the Detroit River and Marentette Drain/Creek and black ash-elm swamp forests are known from early survey records to have dominated the poorly drained interior clay plain over most of Essex County prior to modern drainage improvements. Historical sources combined with existing remnants indicate the presence of a third botanical association, that of a prairie, maintained in areas which are excessively wet and excessively dry during various seasons of the year. Prehistoric use of oak savannas or grasslands present a number of interpretive challenges. An archaeological survey of the Ojibway Prairie Preserve in 1976 found no evidence of prehistoric occupation on grassland areas, but noted a large frequency of sites along the

interface of the grassland and savanna habitats (Kenyon 1976:24). Kenyon concluded that the absence of building material and firewood on the prairie may have restricted occupation in treeless areas, while the biologically variable zones of savanna or oak-hickory forests along the edge of grassland enclaves were the focus of prehistoric occupation in northwestern Essex County (Kenyon 1976:32). While these observations regarding settlement pattern appear well supported, and although isolated prairies were once spread throughout the southern portion of the Province (Pratt 1979:5-6, Kenyon 1976:5-7), the relationship between prehistoric settlements and grassland or savanna environments has received little attention from archaeologists in Ontario (Kenyon 1976:34), thus comparative information is not available.

The La Salle-Lucier site appears to have been located near the edge of the prairie-savanna and may have been established here to take advantage of various plant and animal communities. It has been suggested earlier that this open and semi-open habitat is ideal for supporting upland mammal and bird species as food reserves are concentrated much closer to the ground. Two animal species now extirpated from Ontario, the elk (Cervus elaphus canadensis) and greater prairie chicken (Tympanuchus cupido), were once found in the prairie enclaves near Lake St. Clair (Peterson 1966:321; Lumsden 1966). Elk were seen by Major Littlehales on the prairie southeast of Lake St. Clair in 1793 (Cruikshank 1923:292), but likely disappeared soon after. The remains of elk accounted for 2.5% of the total identified faunal sample from the 16th century Wolfe Creek site east of the Raleigh Plains near Chatham (Foster 1982:144), confirming the use of this large ungulate by prehistoric peoples.

While small sample sizes limit conclusive statements it is interesting to note that evidence for either elk or prairie chicken was absent from La Salle-Lucier and are little known for other sites in the area. The large size of elk may in itself account for the lack of skeletal evidence in the archaeological record. Elk, much like moose, may have been completely butchered at the kill site, and only the skin, meat and selected bone material hauled back to the community. The absence of greater prairie chicken is less easily accounted for, and future studies near the prairie zone should be aware of the species' skeletal similarity to ruffed grouse (Gilbert et al 1981). At present, little direct evidence is available for Younge or Springwells phase exploitation of the prairie environment; nevertheless, the concentration of several vegetative zones in the immediate area emphasizes the resource variability of this region.

In conclusion, the two components of the Western Basin Tradition represented at the La Salle-Lucier site provide two pictures of a Native adaptation to the southwesternmost edge of the province. The Springwells component was most likely occupied by the descendants of the Younge phase component, who, a century or so later, reoccupied a site chosen for the same reasons by their ancestors. In the meantime they had adopted some of the changes in ceramic style which were wide-spread throughout their territory. They may also have become slightly larger as a summer residence group and more settled in their summer pursuits, erecting substantial houses that are now traceable in the archaeological record and placing a palisade around their settlement. Whether or not the palisade was intended for defence or simply to define their settlement boundary is difficult to determine in the absence of any other defensive signs. Furthermore, house reconstruction at the site suggests seasonal re-occupation over an extended period of time. Perhaps with their greater commitment to agriculture it was advantageous to re-utilize prepared fields and the many other resources offered at the La Salle-Lucier Site.

Acknowledgements

Salvage excavations at the La Salle-Lucier site were made possible by the full support of the Ministry of Transportation in their efforts to minimize the effects of highway construction on Ontario's heritage resources . Thanks are also due: to David Wake, supervisor of the Environmental Unit, M.T.O.; to archaeological technicians Dave Pincomb and Paul Prince, to Denis Kay, on loan from M.T.O. Chatham, and to volunteer John Pufahl, School of Visual Arts, University of Windsor, for field assistance during the 1987 season; to Bob Hays, Township of Sandwich West and to Ed LaFontain of LaFontain Construction, whose offices coordinated our efforts with the municipal drain installation in 1987; to M.T.O. construction staff, particularly Project Supervisors Moe Legue and Marcel Oulette, and to Mike Dunn of Dunn Paving, who allowed the needs of both archaeology and highway construction to be met during the highway construction phase of 1987; to Ian Kenyon, Ministry of Culture and Communications for his assistance in the excavation of human remains, and to Dean Jacobs, Director of the Walpole Island Research Centre, and to representatives of the Walpole Island Council for providing for the appropriate reinterment of those remains; to Carl Murphy for field assistance during the 1986 and 1987 field seasons and for his contributions of the floral and environmental sections of this report; and to Mr. and Mrs. Robert

Lucier, their family and neighbours for their hospitality and their interest in our excavations. Inevitably there is something you need, forget, or otherwise require, and the Luciers, especially Mrs. Lucier, always made a special effort to provide assistance and to make our stay there a pleasant one.

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