

A Stone Tool Cache from the Hudson Bay Lowlands

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The 1,100 year old Ouissinaougouk cache, located in the Hudson Bay Lowlands, consists of 343 objects, most of which (88) are expedient tools (scrapers, notches, graters, pièces esquillées, retouched flakes) or flake blanks (249). They appear to have been left in a birch-bark container and either set aside for future use and not retrieved, lost in a spring flood or simply left behind when camp was moved. Blood residues show that some of the artifacts had been used to process a wide range of animals, including ungulates, bear, canids, hare and some kind of rodent (muskrat or beaver?), animals consistent with a cold season occupation. Transport scars (highly polished facets) indicate that the assemblage of items was carried over a considerable distance. The cache represents the anticipated requirement for lithic implements during the coming cold season when access to stone is severely curtailed by snow cover.

Résumé à la fin de l'article.

The Ouissinaougouk site (Gfji-2) is located in the southern portion of the Severn River drainage that is found within the Hudson Bay Lowlands, less than 50 kilometres from the edge of the Canadian Shield (Ouissinaougouk means the place at the mouth of the Ouissinaou Sebe or Beaverstone River in Cree) (Figure 1). Archaeological investigations were undertaken on the north side of the mouth of the Ouissinaou Sebe in 1983 (Pilon 1987:163-178) (Figure 2). At that time, two sites were identified there: Gfji-1, an Archaic site located on a now bypassed channel of the Ouissinaou Sebe, and Gfji-2, a multi-component site which included Initial Woodland Laurel and Terminal Woodland Blackduck ceramics along with later historic period artifacts. Three small excavation areas were expanded around initial positive test units placed along a ten-metre stretch of the eroding bluff edge (Figure 3).

Stratigraphically distinct occupations were associated with buried palaeosols as well as with the modern forest duff layer. Overbank deposition was the prime agent responsible for separating occupational debris from different time periods, as can clearly be seen in the Figure 4 profile.

In the eastern area (units C-63 and C-64) excavated at the Ouissinaougouk site, a remarkable collection of objects was found that formed a very compact and dense concentration. This feature can be described as a cache. Additional analyses have since been conducted on the artifacts comprising this

cache. The results provide a unique insight into life in the Hudson Bay Lowlands more than 1,100 years ago.

Caches and Tool Kits

The term "cache" has been used to describe a wide range of features and even behaviours that have archaeological correlates (see Hiscock 1989 for a lively debate about the definition of a cache). Caches occur in the archaeological literature from most, if not all, regions of the world.

Why were certain artifacts deposited and never recovered? They could have been concealed until their positions were lost, but they might also have been intended as offerings, in which case it would be their defining characteristic that they were never meant to be retrieved. Deposits of this kind have a very wide distribution and are as common in the New World as they are in the Old. But the same dualities permeate their investigation. Stores of artifacts that were intended for recovery are described as "caches" in American archaeology, just as offerings are sometimes characterized as treasures (Bradley 1996:306).

Specific attention can be focused on the feature or on its contents. Pits, variously interpreted

Figure 1. Hudson Bay and surrounding territory; the map includes the approximate limits of the Hudson Bay Lowlands (hatched area) and the confluence (marked by a square) of the Sachigo River and Ouissinaou Sebe to the southwest of Fort Severn.

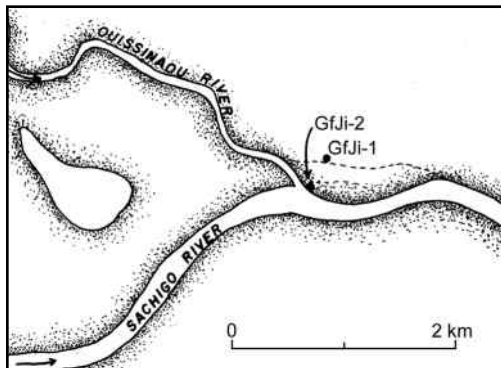
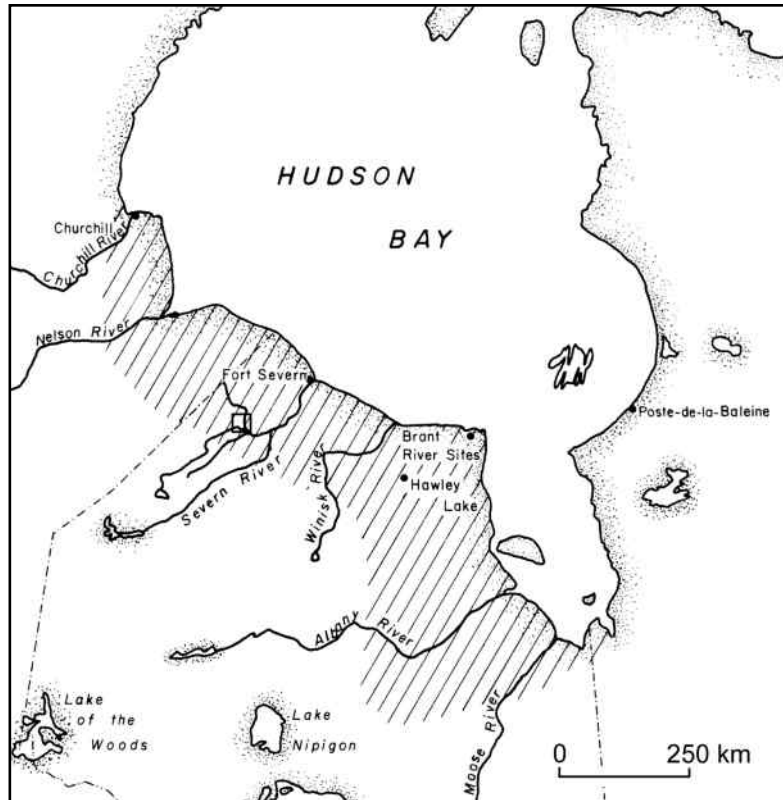


Figure 2. Locations of Gfji-1 on a bypassed river channel (dashed lines) and the Ouissinaougouk (Gfji-2) site at the mouth of the Ouissinaou Sebe.

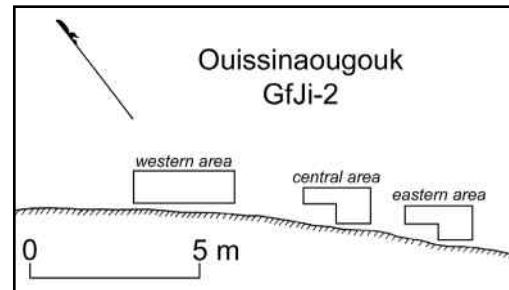


Figure 3. Excavation units at the Ouissinaougouk site.

as having storage or refuse disposal functions, for example, are common features on pre-contact, agricultural sites in southern Ontario (Ellis and Ferris 1990) and often occur within dwelling structures. Superficially similar features also occur over a much wider area, unrelated to agricultural peoples (see a summary by Loring 1989 for

northeastern North America). They are usually depressions or holes in which goods were stored, goods which might have included food, implements or raw materials.

Ethnographically and, in the Arctic at least, archaeologically, caches can be quite imposing surface features, often constructed with stones, designed to keep animals away from the items being stored (see Boas 1964 for examples). In the Western Subarctic, caches could also be elevated above ground level with access to the storage

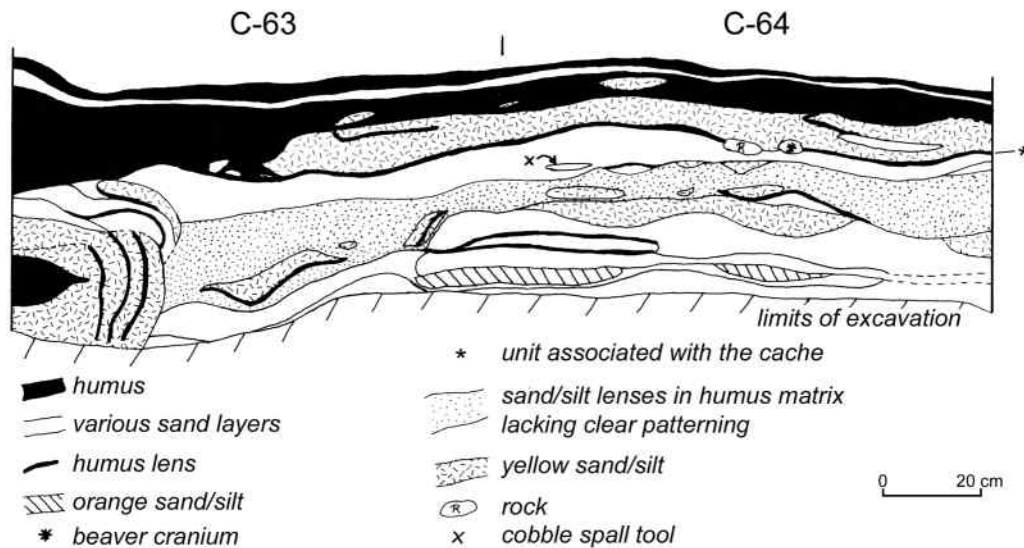


Figure 4. Stratigraphic profile of the units containing the Ouissinaougouk cache. The cache was lying approximately 50 cm in front of this profile, within a humus layer.

structure via a ladder of some kind (see Osgood 1936 for examples). The most important characteristic is the intentional setting aside of goods for later use.

A cache that has not been emptied is a frozen moment in time, telling us about a person or a group of people interested in the contents of the cache, some future intentions of those individuals, and aspects of the times in which they were living. In fact, caches evoke the notion of storage, of secreting something away for future usage. The items contained in a cache can inform us about the technologies employed to produce the items carefully put aside for later consumption. The articles placed in a cache can also tell us about anticipated needs and preparations made to meet these expected requirements.

The notion of a "tool kit" is also a basic one to pre-contact archaeology. It is usually thought of as the full inventory of implements available to an individual or to a group at a given time, to carry out a particular task or activity (Binford 1983:147). It is most certainly linked to some kind of underlying notion of self-sufficiency where it is assumed that people could readily meet all their material needs themselves. The idea may also reflect a kind of ideal world that we

are attempting to reconstruct, where archaeologists list the full *range* of implements required at a given time and by a given group to meet daily requirements. However, it is also clear that such ideals are most often fabrications of convenience for the archaeologists and opportunities to study tool kits are in fact quite rare given the complex nature of site formation processes and depositional histories. Most often archaeological specimens are considered part of the same *assemblage* if they are from the same soil layer and within relative proximity to each other. Absolute contemporaneity is not always to be inferred if soil development precludes obvious stratigraphic separation, as can be the case in various depositional situations. However, when certain particularly diagnostic tool types occur over wide areas, the associated elements of the respective assemblages are assumed to relate to each other. Such inferred relationships, sometimes demonstrated by way of complex statistical manipulation (see Whallon 1973 for example), are often the sole basis for discussions of tool kits.

It is generally understood that a multitude of factors condition the make-up of an archaeological assemblage. Factors such as the time of year might determine, for instance, the prevalence of

finished tools versus blanks and performs. Seasonality is also a factor that can influence the inventory of implements being used. It may result in the presence of implements associated with task or gender-specific kinds of activities. One has only to think of the fall caribou hunt=skin preparation=scrapers=women scenario. Many of these interpretations are based on circumstantial evidence and inference, on general associations that cannot be easily demonstrated.

Ouissinaougouk Site Seasonality

In the past, historians and archaeologists thought that if people did in fact use the Lowlands prior to the arrival of European traders on the shores of Hudson Bay, this presence was restricted to the warm season (Bishop 1972; Dawson 1983). At this time of the year, it was thought that migrating waterfowl would have provided the required food resources. However, with the departure of the myriad of ducks and geese, human groups were also believed to have retreated south to the Shield where, although far from being abundant, resources could be found. A corollary to this proposition is that the Lowlands were a dangerously impoverished area during the winter months.

This scenario has since been shown to be flawed, primarily in its fundamental underestimation of the ecological potential of the Hudson Bay Lowlands (Julig 1982, 1988; Lytwyn 1993, 1994, 2002; Lister 1988; Pilon 1987, 1988). While the spectacular migrations of waterfowl through the Lowlands represent an undeniable *manna* in both the spring and the fall, other important resources also collectively present considerable potential value. These include a number of fish species, moose, small and medium-sized game including muskrat and beaver, and especially caribou. We should also add sea mammals (beluga, seals and in certain areas, walrus) to the list since they are present in significant quantities in the immediate Coastal Zone. However, it has not yet been demonstrated that these maritime resources were ever exploited in pre-contact times.

This more complete assessment of the region's ecological potential served as the basis for the research that led to the discovery of the Ouissinaougouk site, among others (Pilon 1984, 1987). This work showed that people did in fact remain within the Lowlands on a year-long basis, exploiting a wide range of resources, which, however, appeared centred on one focal resource, woodland caribou. This adaptive pattern has been shown to be several thousand years old and more recent discoveries in the Big Trout Lake area to the south suggest that it may have begun as early as 7,000 years ago (Hamilton 2004).

There was a marked dichotomy between the faunal assemblages of those sites located within the Coastal Zone (roughly defined as the region between the shores of Hudson Bay and Whiteseal Falls, the last rapids on the Severn River, some 35-40 km upstream from the mouth of the river) and those found within the Inland Zone (in this particular case at the confluence of the Ouissinaou and Sachigo Rivers). While the warm weather occupation of the Coastal Zone is attested to by the broad spectrum of animal resources utilized (including migrating waterfowl) and a number of key seasonal indicators, such as medullary tissue in bird longbones (indicative of the death of a female during the springtime), a cold weather occupation is indicated in the Inland Zone by the heavy reliance upon caribou. This interpretation is strengthened by ethnographic accounts of the locations of wintering caribou, biological data regarding the seasonal movements of caribou, the presence of caribou antler in winter condition in faunal assemblages from inland sites, and the total absence of waterfowl from the inventories of these same sites. The seasonal interpretation of the Inland Zone sites is important in that it allows us to anticipate some of the forecasted needs of the person who left the Ouissinaougouk cache behind.

Archaeologists are often quite well aware of the food, fuel, and housing requirements of humans, but lithics are often treated as a constant, the kind of material readily available from the immediate environment or through trade. While there may be consideration given to raw material types

and the trade networks involved in obtaining various exotic stones, rarely is it acknowledged that, especially in northern latitudes, access to lithic raw materials is restricted to but a few months of the year. Supplies of suitable lithic resources must therefore be carefully set aside for those long months during which ice and snow make their collecting virtually impossible. In this context then, it is highly informative to review the contents of the cache and some of the features of the objects making up this unique snapshot.

The Ouissinaougouk Cache

The tools, tool blanks, flakes and lithic detritus that comprise the Ouissinaougouk cache (Table 1) formed a compact mound lying immediately on top of a palm-sized piece of birch-bark (although there were a few specimens beneath this bark), within a slight depression (see the middle image of Figure 5). This group of objects was recovered from within a dark, organic layer measuring 2 to 3 cm in thickness, lying approximately 20-30 cm below the current surface, under a succession of alternating humus and overbank sand/silt deposits (Figures 4 and 5). Nearby, in this same test unit, some calcined bone fragments, scattered pieces of charcoal and fire-cracked rocks were found within the same stratigraphic level as the cache and suggested proximity to a hearth feature. Within the area of the cache, the humic matrix appeared darker and

“greasier” than the surrounding humus of this level.

As luck would have it, the cluster of stone tools and debitage was neatly bisected by the wall of the initial 50 cm x 50 cm test unit, which was later expanded in order to fully encompass the cache.

I interpret the association of the cluster of lithic specimens with the birch-bark fragment to indicate that the 343 pieces of stone had originally been in a birch-bark container (possibly propped up against a long stone slab measuring approximately 30 cm x 10 cm x 5 cm), which had subsequently and slowly collapsed, and eventually been covered over with silt from floodwaters of the Ouissinaou and Sachigo Rivers. This collection thus represents a single moment in time, a very intentional gathering of stone tools.

The stratigraphic context of the Ouissinaougouk cache, as well as the overwhelming nature of the physical association of its elements, leave no doubt that these were objects intended to be kept together by their former owner and available for his or her use. As such, we are afforded the unique opportunity of examining and describing associations between different artifact categories and a seasonal, activity-specific site.

In attempting to assess the significance of various types or classes of tools, the relative proportions must somehow be comparable. This task is made very difficult when site collections are comprised of whole, near-complete and fragmentary implements. Creative methods have been proposed to rectify and properly account for the presence of incomplete and fragmentary implements (Shott 2000). In the example presented here, such manipulation is not necessary as all of the tools are whole.

Ouissinaougouk Cache Contents

Projectile Point (Figure 6a)

Only one projectile point was found among the 343 items comprising the cache. This point was carefully thinned and retouched bifacially, although it is proportionately thick. Overall, the point's shape is an isosceles triangle with a slightly convex base, low side-notches and straight to very lightly convex blade edges. The tip is somewhat rounded as a result of possible resharpening on one side. The maximum dimensions are 4.8 cm x 2.6

Table 1. *Ouissinaougouk artifacts.*

Artifact Type	Frequency
Projectile Points	1
Bifaces	3
<i>Pièces esquillées</i> ¹	4
Gravers/perforators	4
Core Remnants	2
Scrapers ²	62
Notches ³	5
Retouched/Used flakes	13
Flakes	249
Total	343

¹does not include one made on a scraper

²includes one also used as a *pièce esquillée* and another that has a notch

³does not include a scraper with a notch

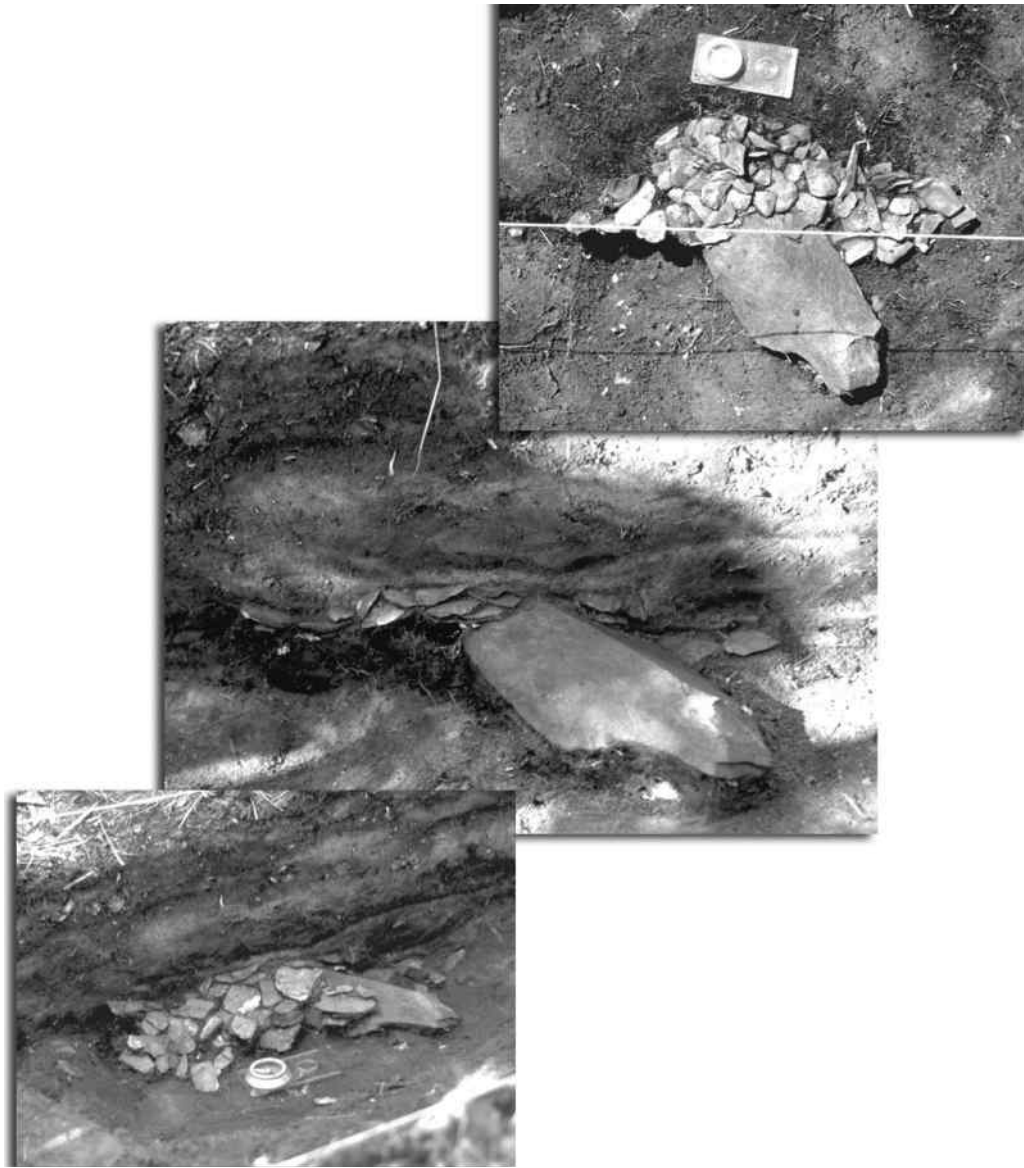


Figure 5. Composite of three views of the Ouissinaougouk cache during excavation (CD97-211:68,74,76). Visible in the middle image is the thick, blanketing layer of sand overlying the dark, humic deposits in which the cache lay.

cm x 10 mm.

Morphologically this specimen resembles no other found to date in the Hudson Bay Lowlands, but then again, projectile points are not common. Similarly, the point does not fit within any known late prehistoric projectile point descriptions for the Subarctic. The general size and hafting characteristics argue for an earlier dating, possibly in very Late

Archaic or Initial Woodland times. The quality of the chipping is high and hints at the latter time period rather than the former. Finally, a radiocarbon date of $1,120 \pm 50$ years B.P. (Beta-77802) was obtained for the birch-bark fragment which lay directly under the cache. Nearby, a radiocarbon date obtained on charcoal from a stratigraphic layer slightly higher than the one which contained

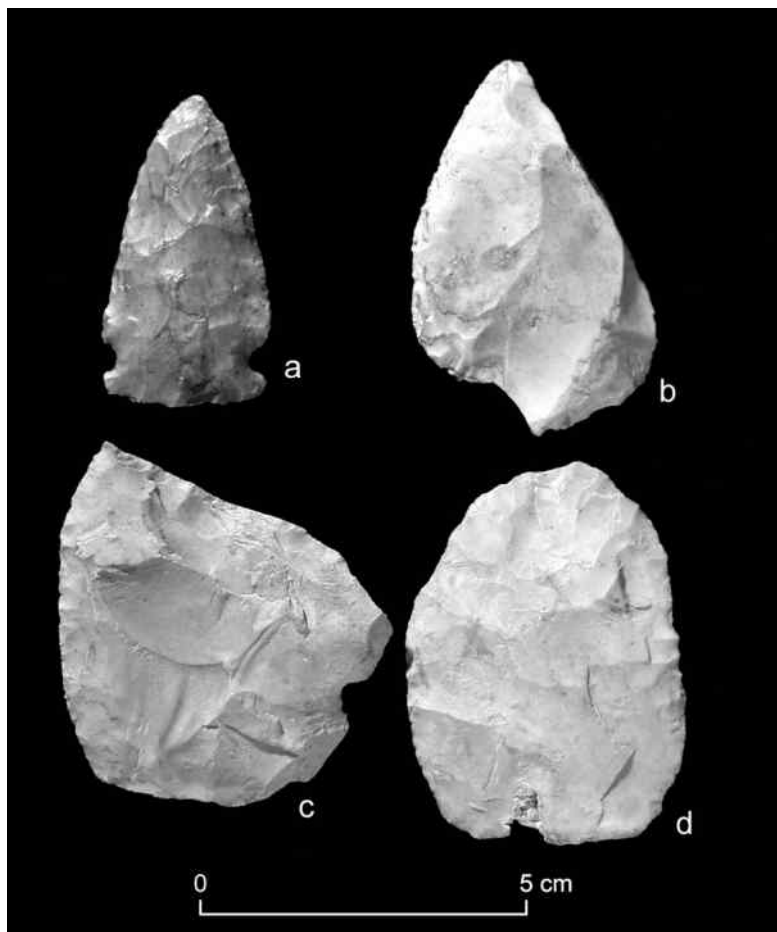


Figure 6. Bifaces: Gfji-2:165 (a); Gfji-2:166 (b); Gfji-2:167 (c); Gfji-2:127 (d).

the cache, yielded a date of 870 ± 100 B.P. (Beta-7926). Laurel ceramic sherds were associated with that sample. Thus, radiometric determinations corroborate a late Initial Woodland dating for the cache (the Woodland period in northern Ontario is usually divided into Initial, Terminal and Aceramic; see Pilon 1998).

Bifaces (Figure 6b-d, Table 2)

Three artifacts in this cache are termed bifaces. The items included in this broad category share a number of attributes, foremost among them being the fact that they lack standardized shapes. Rather, all three exhibit clear evidence of coarse overall bifacial reduction of the blanks and more careful finishing of at least one edge. In fact, the contrast between the finished edges and the unfinished edges is quite remarkable. In two

Table 2. Metrics of the Ouissinaougouk cache bifaces.

Artifact	Length (cm)	Width (cm)	Thickness (mm)
Gfji-2:127	5.8	4.3	11
Gfji-2:166	3.6	5.5	8
Gfji-2:167	5.2	5.2	11

instances (Figure 6b, c), unfinished edges are thick and actually present flat surfaces perpendicular to the facial plane of the implements. Efforts to thin these edges are attested to by multiple hinge fractures emanating from these platforms. On the other hand, the longest edges on these tools exhibit fine, bifacial retouch. The third specimen (Figure 6d) shows greater success in bifacially shaping of the piece, yet small remnants of the cortical surface of the original core are visible at either extremity. It would thus appear that these bifaces represent the

bifacial production of expedient tools. There was no apparent attempt to produce specifically-shaped tools. The most important consideration was the creation of a thin, convex, bifacially retouched working edge.

Pièces Esquillées (Figure 7)

The Ouissinaougouk cache includes at least 5 artifacts which share characteristics of items usually referred to as wedges or *pièces esquillées*. All five have opposing edges which exhibit bifacial edge retouch or crushing, or both. These edges are relatively short and quite straight but they may curve when viewed edge-on. The worked edges are parallel to each other, except for one of the specimens where they are slightly askew. The actual function of these items is not known (Mazière 1984). Some authors distinguish between *pièces esquillées* and bipolar cores. In the cases presented here, the possibility that they are cores seems precluded by the fact that no usable flakes were removed from the crushed edges with the exception of very short

flakes that only modified the immediate edge characteristics. Three of the five specimens show considerable remnants of cobble cortex. One also has a scraper edge between the parallel *pièces esquillées* edges (Figure 7d). It is impossible to determine if one or the other function preceded the other or if both uses occurred simultaneously. However, for tabulation purposes, this specimen is included in the scraper category.

Ultimately the function of these implements resides in the oral tradition of archaeologists rather than in a more objective realm. The proposed functions include the grooving and splitting of bone, antler and perhaps wood, much in the same way burins are thought to have been used. The characteristic opposing retouched and/or crushed edges would appear to be coincidental to use rather than the result of production.

Gravers/Perforators (Figure 8a-c, Table 3)

Four artifacts were identified as gravers or perforators. All are made from flake blanks. In two

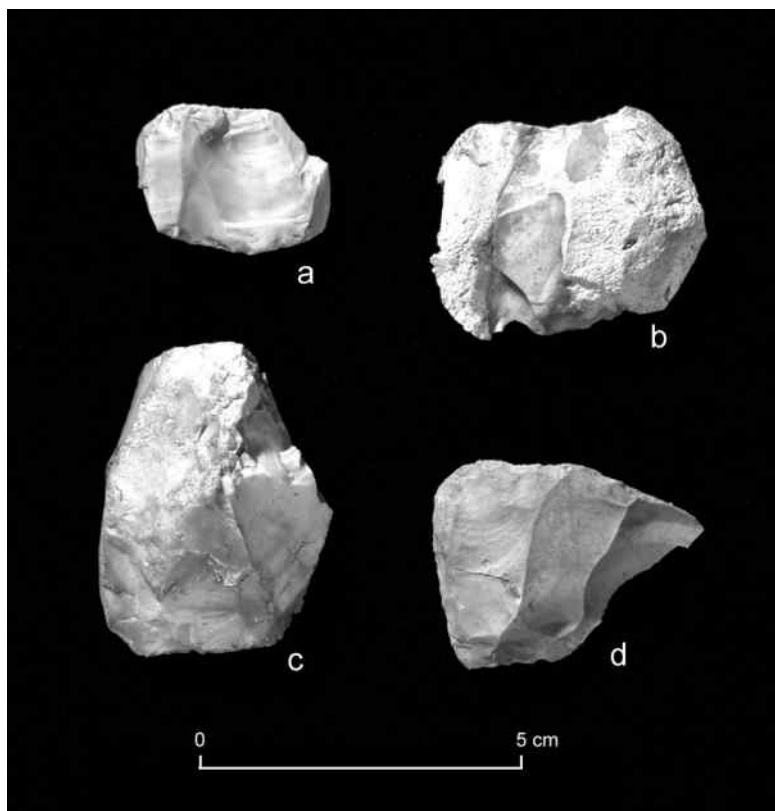


Figure 7. *Pièces esquillées*: Gffi-2:161 (a); Gffi-2:159, 160 (b), note these are two conjoined pieces, exhibiting use and retouch as *pièces esquillées* individually and when originally joined; Gffi-2:115 (c); Gffi-2:153 (d), note the left hand margin of this specimen is steeply retouched as a scraping edge.

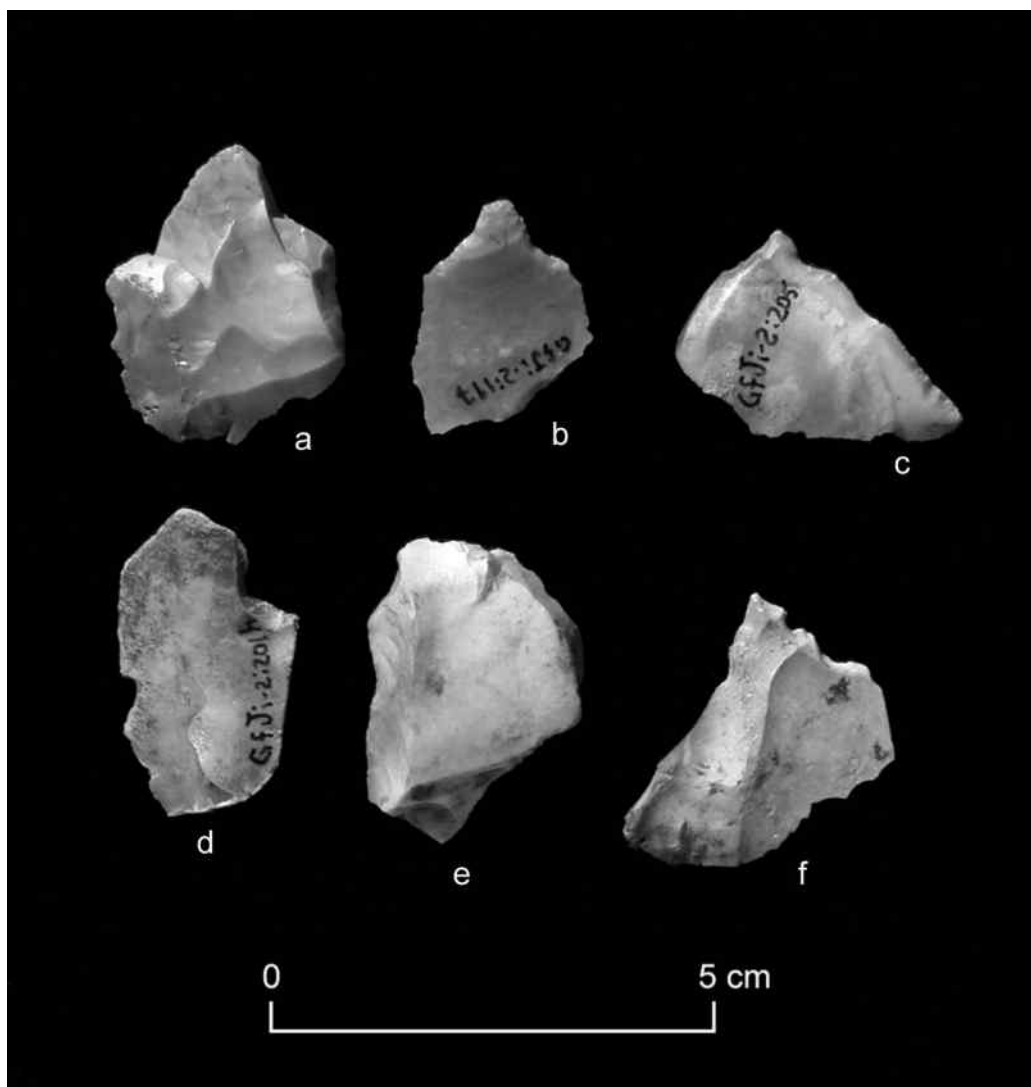


Figure 8. *Gravers (a-c) and notches (d-f): Gfji-2:187 (a); Gfji-2:197 (b); Gfji-2:205 (c); Gfji-2:201b (d); Gfji-2:193 (e); Gfji-2:202a (f).*

instances (Figure 8b and Gfji-2:203m [not illustrated]), converging edges were retouched to form

Table 3. *Metrics of the Ouissinaougouk cache gravers/perforators.*

Artifact	Length (cm)	Width (cm)	Thickness (mm)
Gfji-2:187	3.3	2.7	4
Gfji-2:197	2.7	2.0	4
Gfji-2:203m	3.0	3.6	9
Gfji-2:205	3.3	2.2	4

short, thickened projections. This retouch is marginal and occurs as alternate flaking; that is, portions of one edge (but not the entire edge) are unilaterally flaked, then the second edge is unilaterally flaked from the opposite face. In another instance, Gfji-2:205 (Figure 8c), two separate sets of converging edges were similarly marginally modified so as to produce projections that appear to have been well used. The last implement (Figure 8a) in this group exhibits two converging edges formed by snapping away sections of the flake edges. The

heavily used projection thus formed has the outward appearance of an angle burin, however burin blows were definitely not involved in its production. This piece also exhibits a secondary projection showing use and minimal unifacial shaping.

Notches (Figure 8d-f)

Five items have been tentatively described as notches. All are manufactured on flakes and could initially be lumped together with the retouched/used flakes since their modification is limited to portions of their lateral margins. However, they all consist of intentionally flaked, steep-angled, unifacial concavities. These notches could be interpreted as useful in attaching or securing the implements to hafts, but there is usually no other worked edge.

One notable specimen is a large scraper with just such a concavity placed on a lateral margin (for tabulation purposes, this specimen is included under the scraper category) adjoining the scraping face (GfJi-2:105). Two other cases exhibit minor retouch or use-wear along other portions of their margins (Figure 8d,e). One artifact was made on the distal end of a medium sized flake that terminated in a hinge fracture. It consists of two unifacially flaked concavities or notches separated by the extremity of the narrow hinge fracture.

It would appear that these notches were not typically combined with other types of working edges and thus they likely were used in separate functions, rather than combined in a more complex process. One final observation relates to the width of the notches. If these were used to scrape and otherwise smooth shafts, in the way that spokeshaves were employed, for example, they would be of relatively small diameters, on the order of less than one cm. Some are in fact on the order of three to four mm. The smaller examples might have been used to process cordage, bark or sinew.

Cores

Several pieces in the cache attest to core platform areas and core rotation. These cores are all made from river cobbles of Hudson Bay Lowland chert, as attested by a high incidence of cortex on many of the flakes. Two items were retained as core remnants. In reality, others could fit into

this category but they may just as easily be described as chipping detritus.

Retouched/Used Flakes

A total of 13 flakes was determined to have marginal retouch or signs of use-wear (as determined with a 10x hand lens) that appeared to be more than incidental edge damage that could have been caused by the conditions surrounding their manufacture and transport. Rather, they appear to represent the remains of either systematic edge modification or scars from intentional use. Small nicks and chips were quite common throughout the flake collection. Much of this damage does not seem to be the result of casual use.

The flakes that did exhibit clear and extensive retouch or use-wear are generally large. Three of these flakes bore, in addition to the edge retouch or use wear, deliberately produced notches, probably used to smooth shafts or items being made from organic materials (see Notches above). The average dimensions of this category of expedient tool are: 3.4 cm x 2.3 cm x 5.6 mm. In terms of the size classes established for the debitage, the mean value would be in the second largest flake size class.

Scrapers (Figure 9)

As might be expected with such a large collection of scrapers, there is a considerable amount of variation in terms of both size and shape. It is very tempting to group the implements into mutually exclusive categories. Indeed, I did exactly that in describing the scrapers in a previous analysis (Pilon 1987). However, upon reflection and more careful study of the collection, it becomes apparent there is a gradation of blank shapes that were apparently sought by the craftsman. These include square and rectangular specimens (29). However, the sides of some of the scrapers are not parallel, but contracting or expanding (30) to various degrees and are generally termed triangular by many authors. Still other examples (3) are more irregular in shape and could be described as circular. The mean dimensions of all the scrapers in this cache are 3.0 cm x 2.7 cm x 7 mm. These figures include, however, the large, clearly shaped triangular specimen (Figure 9a). When it is excluded from consideration, the mean

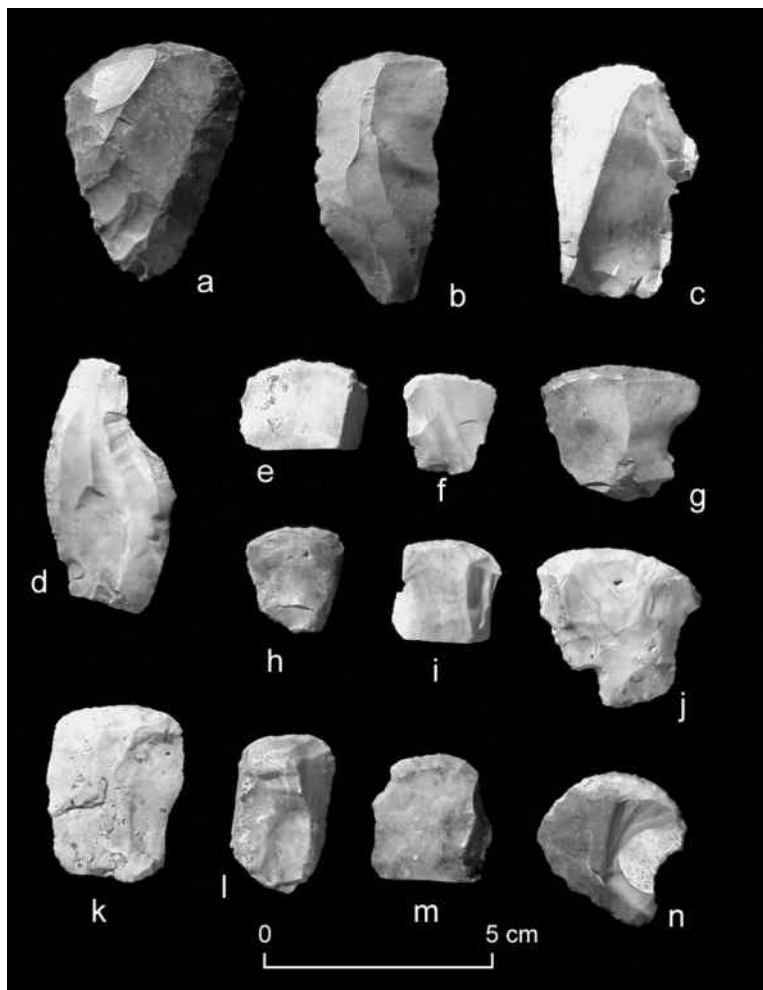


Figure 9. A selection of scrapers: Gffi-2:106 (a); Gffi-2:154 (b), the end retouch is relatively sharp and this implement may have been used with a planing motion; Gffi-2:169 (c); Gffi-2:158 (d), a side-scraper which may have functioned as a knife; Gffi-2:179 (e); Gffi-2:116 (f); Gffi-2:175 (g); Gffi-2:150 (h); Gffi-2:171 (i); Gffi-2:109 (j); Gffi-2:117 (k); Gffi-2:156 (l); Gffi-2:157 (m); Gffi-2:152 (n).

dimensions are 2.9 cm x 2.7 cm x 7 mm. It would thus appear that, overall, the scrapers are only marginally longer than they are wide. They are consistently thin, under one cm in maximum thickness.

In most cases, retouching of the flake blanks was restricted to producing a single scraping face. However, 16 scrapers exhibit additional retouch on secondary edges which may result from efforts to modify the shape of the blanks. This retouch may also represent the creation of additional scraping faces. The measured angles of the scraping faces range from 45 to 80 degrees with a mean of 61 degrees.

At least two of the scrapers present additional worked edges which can be interpreted as relating

to different functions. In one instance, a wide, unifacially produced concavity characterizes one of the lateral edges of the triangular scraper (Gffi-2:105). Presumably, this notch was used in scraping wood or bone shafts. In another specimen (Figure 7d), more-or-less parallel opposing lateral edges exhibit bifacial edge crushing and micro-retouch consistent with implements usually termed *pièces esquillées* (see above) and that are presumed to have served as tools used in slotting and splitting wood, antler, and bone.

Debitage (Figures 10, 11, Table 4)

A large proportion of the cache is comprised of otherwise unaltered and unused flakes (n=249).

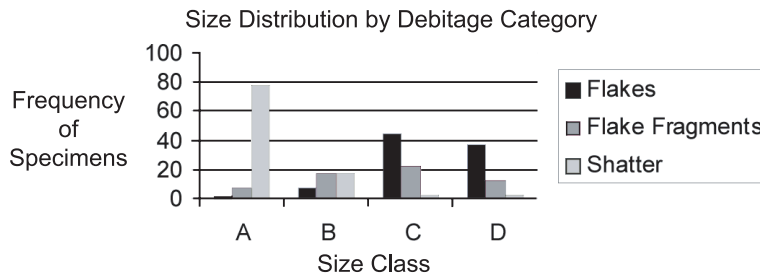


Figure 10. Proportions of debitage categories per size class (see Table 4 for size class definitions).

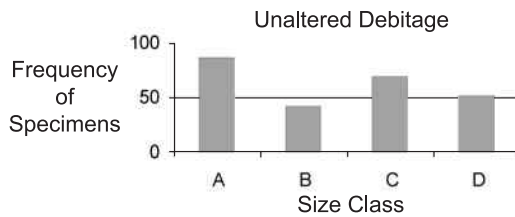


Figure 11. Distribution of flake frequency across debitage size classes (see Table 4 for class definitions).

Table 4. Ouissinaougouk cache debitage summary.

Size Class	Frequency	Percent	Frequency by Debitage Category
A (up to 1 cm x 1 cm)	87	35.0	(fl-1, flf-8, sh-78)
B (up to 2 cm x 2 cm)	42	16.9	(fl-8, flf-17, sh-17)
C (up to 3 cm x 3 cm)	69	27.7	(fl-44, flf-22, sh-3)
D (greater than 3 cm x 3 cm)	51	20.5	(fl-37, flf-12, sh-2)
fl=flake	flf=flake fragment		sh=shatter

Of these, 87 or 35 percent measure less than 1 cm². These include a small flake (1), flake fragments (8) and pieces of shatter (78). They may have been inadvertently gathered up with the larger pieces and placed in the same bark container. Similarly, some of the larger flakes may have simply been broken at some time while in the container and never withdrawn. Lastly, it is always possible that even such small pieces could serve some useful purpose that has yet to be identified.

The remaining specimens (162 or 65 percent) are of a size that could provide suitable blanks for later tool production, regardless of whether they are complete flakes, flake fragments or pieces of shatter. The debitage found in this cache consists mostly of large flakes or flake fragments while the smaller pieces are mostly pieces of shatter.

Stone-on-Stone Abrasion or Transport Scars

Evidence of stone-on-stone abrasion or transport scars was found on many of the artifacts, regardless of whether they were a tool or a piece of debitage. This evidence is in the form of short, heavily polished areas and arrises that retain similar polished segments (Figure 12). The polishing is not restricted to potential working portions of implements, or to possible hafting sections. The polishing is randomly distributed on high spots as well as within flake scars protected by arrises. It seems very clear that these shiny, polished facets resulted from fairly lengthy rubbing between the pieces of stone, more than likely during transport from the site of their creation and their final location at the mouth of the Ouissinaou Sebe (the possibility of post-excavation trauma can be effectively

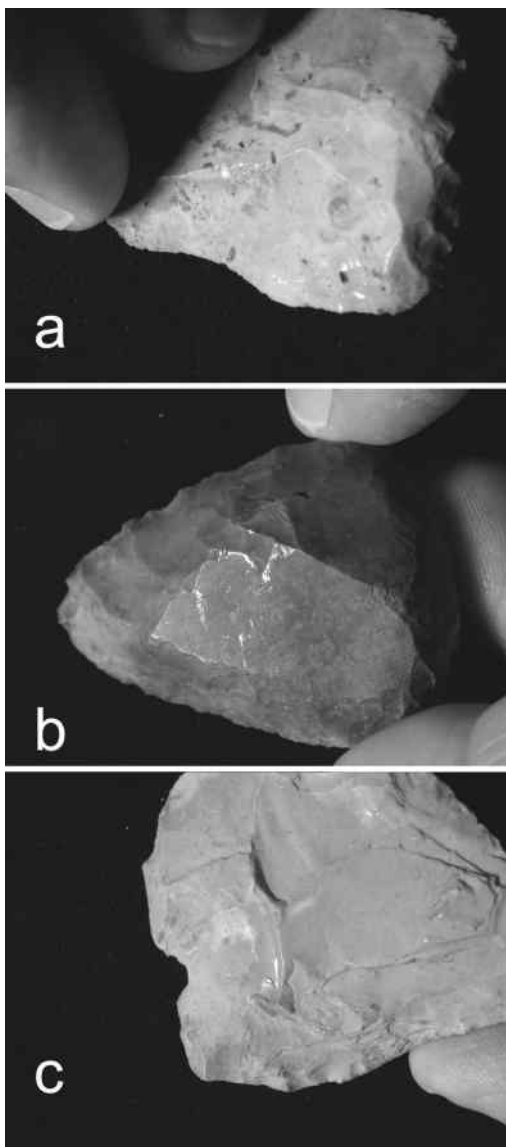


Figure 12. Three examples of highly polished facets interpreted as stone-on-stone abrasion: Gffi-2:117 (a); Gffi-2:106 (b); Gffi-2:167 (c).

ruled out as each implement was individually wrapped in tissue paper as they were removed from the excavation unit).

Blood Residues

In 1984, Margaret Newman carried out a preliminary examination of the Ouissinaougouk cache scrapers in order to determine whether

blood residues were present on any of the implements. The presence of hemoglobin was ascertained on four of the scrapers using a urinalysis test strip. However, as she noted “This is purely a preliminary step which denotes the presence/absence of blood and cannot be accepted as definitive” (Newman 1987:328).

In 1992 the entire collection of 62 scrapers was again analyzed by Margaret Newman, then with the Laboratory of Archaeological Science in California. She employed cross-over immunoelectrophoresis (CIEP) to identify the animal species whose blood protein was present on the scrapers. Her methods and findings are detailed in a 1992 report.

While it was expected that more individual scrapers would be shown to have retained identifiable blood residues, it remains that ten did. These represent an interesting range of animal species or, more properly, animal families or orders. The antisera that she used were not from species potentially found within the Hudson Bay Lowlands, but they can nonetheless serve as proxies for related species. As a result, residues were identified which probably related to caribou or moose (on four implements), hare (on three implements), dog/wolf/fox (on two implements), bear (on one implement) and rodent (on one implement). One of the scrapers tested positively for two species (bear and canid).

The Cache as a Record of Previous Behaviour

The Ouissinaougouk cache cannot easily be related to a broader site context because archaeological investigations were limited to test pitting. Nonetheless, it informs us about past behaviour and the range of useful lithic objects that at least one individual or perhaps a family group required more than 1,100 years ago in the Hudson Bay Lowlands.

Within the Hudson Bay Lowlands, bedrock is an exceedingly rare occurrence. Exceptions are the hills that rise in the Hawley Lake area south and west of Cape Henrietta Maria where James Bay and Hudson Bay meet. Elsewhere over most of the Lowlands, bedrock is buried beneath a thick mantle of Tyrrell Sea clays and glacial

deposits (MacDonald 1969). The underlying Palaeozoic deposits produce low ridges, which, when they intersect with the flow of a major river, often produce rapids that slowly and gradually erode the bedrock sill (Cumming 1969; Norris and Sanford 1969). Nodules of chert are thus exposed and then deposited below these rapids along with other suitable lithic materials washed out of more recent glacial and post-glacial deposits (Sanford, Norris and Bostock 1968).

The frequency of cortex among the debitage included in the cache and even on several of the scrapers shows that river cobbles were the prime source of the lithic raw material used by the Ouissinaougouk craftsperson. The current interpretation of the archaeological land use pattern, and indeed the historically documented settlement system, strongly suggests that the southern reaches of the Lowlands were used during the cold season when the focal resource was caribou, which moved into its winter range in those regions. Consequently, the cache must represent, among other things, an intentional collection of raw material for use over the period when access to river cobbles was impossible, as well as an initial transformation of these cobbles into a flexible and efficiently transported reserve of raw material.

The transport scars noted on so many of the items in the cache, be they implements or flakes, indicate these pieces had indeed travelled together, in direct contact with each other, for a considerable amount of time. The birch-bark fragment covered over by the pile of tools and blanks is interpreted as the remains of the container in which they travelled. The lengthy trip suggested by the polished facets lends some indirect support to the proposition that the warm season was spent at some distance from the site, likely in the coastal area several hundred kilometres to the north. Without having attempted to identify the particular type(s) of Hudson Bay Lowland chert that was used, we cannot suggest any particular source region for the contents of the cache, other than to propose that it was most likely somewhere along the Severn River given the abundance of cobbles that have been noted, especially at rapids. Julig et al. (1992) offer cogent warnings against assuming

that all Hudson Bay Lowland chert was derived from local sources. However, the location and distance to the original source is only one element contributing to the time required to create the abrasions on the tools and blanks. Another is the actual route followed in reaching the Ouissinaougouk site, which may have been circuitous indeed.

The Cache as Expectations for the Future

The moment frozen by this cache represents an individual's or perhaps a family group's expectations for the future. It reveals something of the anticipated needs for lithic raw materials and stone tools over the course of the coming winter months (the role of wood, bone and antler implements was certainly very considerable, but the available collection does not allow discussion of these material needs). We can discuss some of these, in spite of not knowing such important factors as the number of people who might be drawing on this supply. For instance, it is interesting to note that projectile points and bifaces in general count for very little in this assemblage (4 items out of 343 or barely more than 1 percent; even if we exclude the unmodified debitage, bifaces still only account for 4 of 92 implements or just over 4 percent of the total number of implements). The stone tool inventory is overwhelmingly dominated by unifacial scrapers, only one of which involved careful shaping of the blank. Expediency was certainly the order of the day. In fact, the flexibility to create whatever functional working edge was needed (scrapers, graters, perforators, notches) with a minimal investment of energy is strongly indicated by the large number of expedient tools in the cache. Similarly, the large number of flake blanks also suggests that the individual(s) needed to keep a ready supply of items that offered the flexibility of creating expedient implements as required. Additionally, the low reliance on bifaces suggests that many, if not most, tasks could be undertaken by less refined, expedient tools and did not require more formalized lithic implements.

In other contexts, an emphasis on bifaces versus unifaces and flake tools has been argued to

reflect greater or lesser degrees of mobility, where an increased reliance on unifaces and flake tools is taken to indicate more sedentary settlement patterns (e.g., Cowan 1999; Morrow 1996). The Ouissinaougouk cache would appear to counter this argument since it was left by highly mobile hunter-gatherers. This cache may thus serve as a cautionary note in this regard, in that other cultural preferences may also have been important considerations in the ways that technological strategies were set up, along with optimization of available working edge and the physical properties of the implements themselves.

Final Considerations

One purpose of this presentation was to examine the Ouissinaougouk cache in order to create a clearer picture of life at the mouth of the Ouissinaou Sebe 1,100 years ago. Prior to these new analyses, ethnographic information concerning former land use patterns, as well as the analysis of faunal collections from archaeological sites that have been found within the Inland Zone, had suggested that these occupations related to the cold season or that time of year when the variety of faunal resources was significantly reduced and access to lithic raw materials markedly curtailed.

The blood residue analysis that was undertaken of the scrapers in the cache supports this interpretation of seasonality in that fish and avian species are absent from the admittedly short list of identified blood proteins.

Additionally, transport scars suggest that this collection of implements and blanks had in fact been gathered and transported for quite some time. This might be taken as support for a cold season occupation, when reserves of suitable stone must be carefully curated and access to new sources is greatly reduced if not totally eliminated.

The types of items found within the cache reflect the perceived future needs of the individual(s) planning to make use of its contents over a coming winter. Bifaces and bifacial implements are not prominent. Rather, unifacial tools (scrapers, *pièces esquillées*, notches, graters/perforators and used/retouched flakes) and blanks suitable

for quick transformation into similar kinds of expedient tools appear to be the most important element of the cache and, therefore, foremost in the mind of the owner(s).

Allusion was made in the opening of this article to the concept of “cache” as well as to the broadly used analytical device known as the “tool kit.” Some thoughts about the intentions behind the creation of this cache are presented below, but first, some attention must be paid to the second idea.

Without the benefit of careful excavations in areas adjacent to the cache, we cannot honestly speculate about what other stone implements (let alone artifacts made of perishable raw materials) were used by the individual or group that left behind this collection of stone tools and blanks. As an artificial listing of all things possible and available to an individual or to a group, does the Ouissinaougouk cache represent the full range of possibilities? I would speculate that it likely does not. Items in daily use at the moment of the preparation of the cache were clearly intended for later use. The tools taken away from the site may have included implements prepared for use in contexts different from those anticipated by the cache and fulfilling markedly different functions given seasonal variations in activities and resource exploitation techniques.

At the same time, the Ouissinaougouk cache is most eloquent about the flexibility of stone tool technology at this time. While there are several implements in the collection, there are by far more blanks suitable for eventual transformation into whatever tool might be required at a given moment in time.

In this sense, the Ouissinaougouk cache stands in marked contrast to some biface caches which are much more highly specialized with regards to the kinds of blanks and therefore the kinds of eventual tools that might be produced from them. One has only to think of Meadowood caches whose blades can certainly be transformed into points or knives, but not much more.

Other biface caches (e.g., Ellis and Deller 2002) have been interpreted as invoking ceremonial or ritual activities, and still others reflect technological or material preparedness. They suggest that the craftsman(s) wished to maintain flexibility as

regards future needs and the bifaces are generalized and lend themselves to transformation into a wide array of implements.

Earlier it was suggested that there are a variety of reasons for the creation of a cache and its eventual discovery by archaeologists. While the various analyses and observations reported here do enlighten us about the history of this particular collection of stone tools and blanks, they remain silent about the circumstances leading to the apparent abandonment of the collection.

Was this stockpile of implements and blanks left in the corner of a winter lodge that was not returned to because of an accident while away from the camp? Did the owner(s) intend to return but circumstances changed and the opportunity to return just never presented itself? Was the campsite caught in an unexpected spring flood, burying the birch-bark container and its precious contents, as might be indicated by the layer of sand and silt above the cache (Figure 5: middle image)? Might these objects have been left in anticipation of someone else passing through and needing a quick supply of stone tools? Answers to these questions are clearly beyond the scope of archaeology but remain an intriguing source of rich speculation to drive further investigations.

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Le site Ouissinaougouk, avec sa cache d'outils de pierre remontant à 1100 ans avant aujourd'hui, est situé dans les Basses Terres de la baie d'Hudson. La cache consiste en 343 objets, dont la plupart (88) sont des outils simples (grattoirs, encoches, graveurs, pièces esquillées, éclats retouchés) ou des éclats (249) pouvant servir d'ébauche à de tels outils. De toutes apparences, cette collection de pièces a été laissée dans un contenant en écorce de bouleau, soit pour être utilisée à un moment ultérieur, soit perdue lors d'une crue printanière exceptionnelle ou encore simplement oubliée lors d'un changement de camps. L'analyse de résidus sanguins a démontré que certains des outils ont été utilisés pour travailler un éventail d'espèces animales qui inclut les ongulés, l'ours, les canidés, le lièvre et un rongeur quelconque (rat-musqué ou castor?). Ces espèces soutiennent l'interprétation hivernale de l'occupation. Des traces de polissage sur certaines pièces indiquent le transport sur de longues distances. La cache représente les besoins anticipés d'outils de pierre prévus pour la saison hivernale qui s'annonçait, époque de l'année quand l'accès aux sources de pierre est très restreint dû à la couverture de neige.

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