

**PALEO-INDIAN LOCATIONS ON LATE PLEISTOCENE SHORELINES,
MIDDLESEX COUNTY, ONTARIO**

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ABSTRACT

A Paleo-Indian settlement pattern focused on specific physiographic features is generated through an analysis of data gathered during Paleo-Indian point surveys.

Having become intrigued with a distributional pattern of Paleo-Indian artifacts, the author undertook a study which led to the locating of several Paleo sites. This paper concerns a portion of that study: data collected during site surveys along glacial lake shorelines in Middlesex County, with specific attention being focused on the general physiographic attributes of locations yielding fluted, Hi-Lo or Plano points. These point types, which are considered to be of Paleo-Indian vintage, will be defined after a general delineation of the regions investigated and a summary of the survey technique.

THE REGIONS SURVEYED

The idea of searching the ancient Pleistocene shorelines was formulated after Dr. William B. Roosa pointed out the locations of the Barnes, Lux and Holcombe sites respectively on the Warren, Lundy and Algonquin beaches in Michigan (Roosa, 1965: 100). Since previous studies had indicated a concentration of Paleo points in southwestern Ontario (Garrad, 1971: 3) and the author was already cognizant of the lithic materials generally used by the Paleo-Indians in that area, it was decided to commence the search on Pleistocene beaches in Middlesex County.

A problem encountered was the lack of available maps indicating the exact locations of the beach features. However, during the fall and winter months when the seasonal reduction in vegetation offered a better view of the lie of the land, the author employed a visual means of locating shorelines by travelling over the countryside looking for a ridge sloping down to a wide expanse of low, flat land, or in other words the shoreline sloping down to the lake bed. When such an area was located it was carefully related to topographic maps, air photographs and data concerning glacial lakes presented by Hough (1958).

Eventually the areas shown in Figures 1 and 2 were surveyed. Described in general terms as occurring along the 605 foot contour of elevation between the Moray Creek and the Ausable River in McGillivray Township and those along the 750 and 800 foot contours between the rivers Thames and Sydenham in Caradoc Township, the areas encompass shoreline features tentatively identified as belonging to glacial lakes Algonquin, Whittlesey and Maumee respectively.

THE SURVEY TECHNIQUE

Once the general area to be surveyed was selected the following survey technique was employed: residents and people familiar with the area were shown a small sample of artifacts including a fluted point, a scraper and some chert flakes. They were asked if they knew of any locations where similar material or other Indian artifacts had been found. Permission to surface hunt was obtained and circumstances permitting, all areas in which flakes or artifacts had been reported were surface hunted. Additional cultivated fields were investigated because they were situated on the north side of a low area. Several fields were selected at random for surface investigation.

THE LOCATIONS AND THE ARTIFACTS

When an area yielded a fluted, Hi-Lo or Plano point it was designated a location. Some locations (see Figures 1 and 2, locations A and M) have yielded in excess of 50 Paleo-Indian points and some have yielded other diagnostic artifacts such as gravers, scrapers, channel flakes and drills.

The fluted and Plano points were identified by comparing their workmanship and metric attributes to other points from known Paleo-Indian sites. The Hi-Lo points, which were often difficult to distinguish from fluted points, were generally thicker and cruder. The majority had basal treatment ranging from thinning to fluting and some had a slight lateral constriction near the base, lending a stemmed appearance to the point. Many of the Hi-Lo points had a bevelled base and most were made from a white chert material.

The points are illustrated in Plates 1 to 10 and their approximate provenance relative to elevation and drainage is shown in Figures 1 and 2. Precise provenance data is recorded in the field notes of the author and is on file at the University of Waterloo.

It is interesting to note that certain clusters of physiographic features are shared by many of the locations (see Table 1). The basic pattern involves a focus on the former Pleistocene shorelines, generally northeast of the ancient lake beds. There is a strong tendency for the locations to be in sheltered areas, either on a shelf part way down the southern exposure of the ridge or in the case of some sites, in a naturally occurring depression or in a shallow basin. Many locations are situated near tributary streams, generally less than 10 feet wide but having a broad flood plain in a U-shaped valley. There seems to be a definite correlation between soil types and the locations. Although studies in this promising area have not been completed, it would appear that the majority of the locations are found on loamy soils and all of the locations are found in proximity to muck soils.

DISCUSSION

The provenance of the artifacts along the Pleistocene shorelines is as significant as it is intriguing, and indeed some very interesting observations on the culture and history of the Paleo-Indians can be based on the data. The phenomenon of shoreline provenance has previously been recognized and is often interpreted as indicating that the Paleo-Indians were camping in proximity to the water's edge, an idea rejected in this paper. For instance, expanding on Roosa's observation that the cultural material may not be as early as the shoreline ridge on which it is found (Roosa, 1965: 97, 100) it should be noted that the beaches in question have a time differential of thousands of years (Hough, 1958: 283) and yet all three point types, fluted, Hi-Lo and Plano, occur on all three shorelines. It would be absurd to consider that the point types and related assemblages could remain static and indeed homogenous over such a great period of time. Therefore at least in the case of the older shorelines, Maumee and Whittlesey, it is logical that the beaches were being sought thousands of years after the water had receded and the sites were oriented to the former lake beds rather than to the lakes themselves. It is also logical that the same analogy may apply to the Algonquin shoreline! Indeed, the author has located Paleo-Indian sites and artifacts below the Algonquin beach. This indicates that Paleo-Indians existed (or persisted) after the waters of Lake Algonquin had receded. No doubt these people were seeking the former Algonquin shoreline for the same reasons as they were seeking the older shorelines. After all, the settlement patterns are the same on all three shorelines in question. When a sufficient number of sites have been located before the Algonquin beach it will be interesting to compare their settlement patterns with those presented in this study.

It is the conclusion of this paper that the shorelines were being sought because they offered certain environmental or physiographic conditions favourable to the Paleo hunters. Perhaps the attractive feature was the richer environment of a borderline ecological zone existing along the margin of the ancient lake bed and the former beach. Such an edge environment may have attracted caribou and other game and this in turn may have attracted the Paleo hunters. Concerning the desirability of ecotones or edge environments Cleland states: "Edges exhibit a number of features which render them extremely favourable for man and beast, a phenomenon known as the edge effect" (Cleland, 1966: 7). Odum elaborates on this effect by observing that, "often both the number of the species and the population density of some of the species are greater in the ecotone than in the communities flanking it" (Odum, 1953: 207).

Another consideration merits attention especially if the locations were occupied after the waters of the lakes had receded. It is known that woodland caribou often browse limited areas of bogs, low lying grassy lands or lichen rich glades and it is possible that caribou found these conditions on the former lake bed after the water's recession. Certainly in present times it can be observed that cattle seem to prefer the low lying terrain of the former lake beds, probably because the boggy conditions provide a more luxuriant growth of vegetation. Once the Paleo hunters were attracted to the localities by the caribou, it would be logical to camp on the shoreline ridge. Such a position while providing an overview of the hunting area would also offer a well drained and thus more comfortable campsite.

There is a third consideration which may also explain the shoreline provenance of the artifacts. Barren Ground Caribou often utilize ridge tops in their seasonal migrations and they may have been using the shoreline ridges in similar fashion, finding conditions more favourable for travel on the well-drained, elevated beach ridges than through the scrubby forests, fallen trees and impounded water usually associated with old lake bottoms. If the Paleo men were hunting these animals, as recent speculation would indicate (Storck, 1971: 26), then they would also be attracted to the ancient beaches, setting up camp in anticipation of the migration. It logically follows, and is supported by the provenance data recorded in this paper, that the animals were intercepted at natural crossing barriers on the shorelines, being places where the ridge was dissected by a stream. Such a location would have impeded the forward progress of the caribou and would have been an ideal place to intercept the herd.

It is interesting to note that many of the locations (i.e., 1 to V, Figure 2) are situated in proximity to the water divide between the Thames and Sydenham Rivers. Although it lies outside the scope of this present study, the orientation to water divides is worthy of mention as it seems to be a significant and wide-spread factor of Paleo-Indian settlement technology. For instance, in eastern North America the Debert site is located on a water divide (MacDonald, 1969: 3) while in the southwest it would appear from a rudimentary interpretation of Judge's maps (1973: 63, 67, 68, 70) that Paleo-Indian sites and locations are situated in proximity to the water divide between the Rio Grande and Rio Puerco. This apparent attraction to water divides probably represents a variable of an orientation to ridges in general, which being the case it would also be logical to anticipate the finding of Paleo sites on physiographic features such as eskers, moraines and drumlins. This idea is partially verified by the finding of Paleo-Indian artifacts on the southern exposure of a drumlin near Alliston, Ontario (see Storck, 1974: 7).

The occurrence of the artifacts on the southern exposure of the shoreline ridges represents an important variable in the Paleo-Indian settlement technology of southwestern Ontario. The locating of camps in such a position provided optimum exposure to the sun while at the same time offering protection from the north wind. For what it is worth, the author discussed these

phenomena with some "oldtimers" who related them to nature by pointing out that the bark of older trees is usually thicker on the north and northeast sides of the tree and even the lowly spider picks the warmest and driest side to spin their webs—the south side.

The concentrations of artifacts in low areas on some of the sites seems to be a significant phenomenon and one which has been noted elsewhere in North America. At the West Athens Hill site in New York State, "most of the evidence was found in a broad, shallow depression between the knolls, a sheltered area, apparently the principal habitation locus" (Ritchie, 1969: xvi). It is logical that such depressions may have been occupied during winter months when they would offer protection from the wind and when the ground would be frozen, eliminating the inconveniences caused by poor drainage. It may also indicate the placement of the dwellings in visually dead ground to avoid the line of sight of caribou or other intended game.

CONCLUSIONS

The ideas presented in this paper have assisted the author in the finding of Paleo-Indian sites and locations, many of which have been selected for detailed investigation and will be the subject of further reports. Slowly additional regions are being surveyed and rapidly the backlog of promising areas continues to mount. Meanwhile the author continues to comb the fossil beaches, seeking evidence of long ago. And sometimes on a cold November day, racing against the impending snow, the finding of a fluted point or a tiny, worn scraper would bring the following scene to mind:

Excitement and tension built up in the camps as the fall days slowly passed. There would be alarms, occasioned by small wandering herds that happened into the land ahead of the migration. And as always, some of the People wondered if this time, by some terrible malice of fate, the deer (caribou) might fail to move south by the particular crossing where the skin tents stood waiting. There was no sleep and little rest. At night the drums sounded and the voices of the hunters sang the songs of the killing of Tuktu, or the people told tales of the deer they had seen and killed in their time, until the late dawn crept into the sky.

Then on a day in October there would be snow in the air. "They come!" was the cry in the camps, and the hunters ran to their places and the women and children ran to the tops of the ridges north of the crossing.

This was the time of the great slaughter. At the valleys and gulleys the deer met the hunters. Blood flowed at the crossings and the hunt went on far into each night.

In the camps huge fires burned all day and all night and blocks of white deer fat began to mount up in the tents. On the bushes which spread their dead leaves in the hollows, thin slices of meat were laid out to dry until the valleys and hills about the camps glowed a dull red under the waning sun.

On the sandy shores by the tents many thousands of fine hides lay staked out with their naked sides upward, and women and children worked over these hides, cleaning and scraping them thin.

The excitement mounted to a frenzy of action, until in less than a week from the day the hunters first signaled the approach of the deer, the great herds were gone. The crossings were empty of the living deer and only the dead remained there.

Then the snows came, and all things save man and the ravens turned as white as the snow. The ptarmigan found their white feathers, the fox turned white, and the weasel. The snowy owls drifted out of the more distant north and they too were white, as white as the great Arctic wolves. (Mowat, 1971: 123)

And likewise the advent of the snow usually brings a temporary halt to the survey by obscuring the ancient artifacts. But indeed, as one stands on a Paleo-Indian site on a fossil

beach, watching the first snow of the season swirl downward, is it not possible that his thoughts are 10,000 years old?

ACKNOWLEDGEMENTS

I would like to express my appreciation to Dr. William B. Roosa for encouraging, facilitating and supervising my research. Dr. Peter Storck, Dr. Alexis Dreimanis and Dr. James Fitting provided assistance by commenting on original drafts.

Gratitude is extended to Mr. Reynold Welke who provided immeasurable assistance during the entire survey and to Mr. Otto Welke who allowed us to test-excavate on his cultivated land.

I am indebted to Gary and Randy Laye of Parkhill for generously showing me location A and likewise to Mr. Edward McLeod who loaned points D and E for study and who also spent many hours showing me locations and interesting artifacts. Point A.2 and site information was provided by Ray Baxter.

Thanks is also extended to all the other people who assisted the project. The author derived great benefit and enjoyment from associating with everyone encountered during the survey.

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TABLE 1
THE PHYSIOGRAPHIC ATTRIBUTES OF THE LOCATIONS

POINT CLASSIFICATION	LOCATION DESIGNATION (See Figs. 1 & 2)	ATTRIBUTES								
		Shorelines	Algonquin	Whittlesey	Maumee	Southern Exposure, North of Lake Bed	Crossing Barrier	Sheltered Area	Shelf	Basin
Fluted	A		X			X	X		X	X
"	D		X			X				
"	H			X		X	X	X		X
"	I			X		X			X	
"	V				X	X				X
"	Y				X	X		X		X
Hi-Lo	B		X			X	X		X	X
"	F		X			X	X	X		
"	G		X			X	X		X	
"	J			X			X		X	X
"	K			X		X	X	X		X
"	M			X		X	X	X		X
"	N			X		X	X	X		
"	O			X		X	X			X
"	P			X		X	X			X
"	R				X	X			X	
"	S				X	X				
"	T				X	X				
"	U				X	X	X	X		
"	W				X	X	X	X		X
Plano	C		X			X	X			
"	E		X				X	X		
"	L			X			X			X
"	Q			X		X	X			X
"	X				X	X	X			X

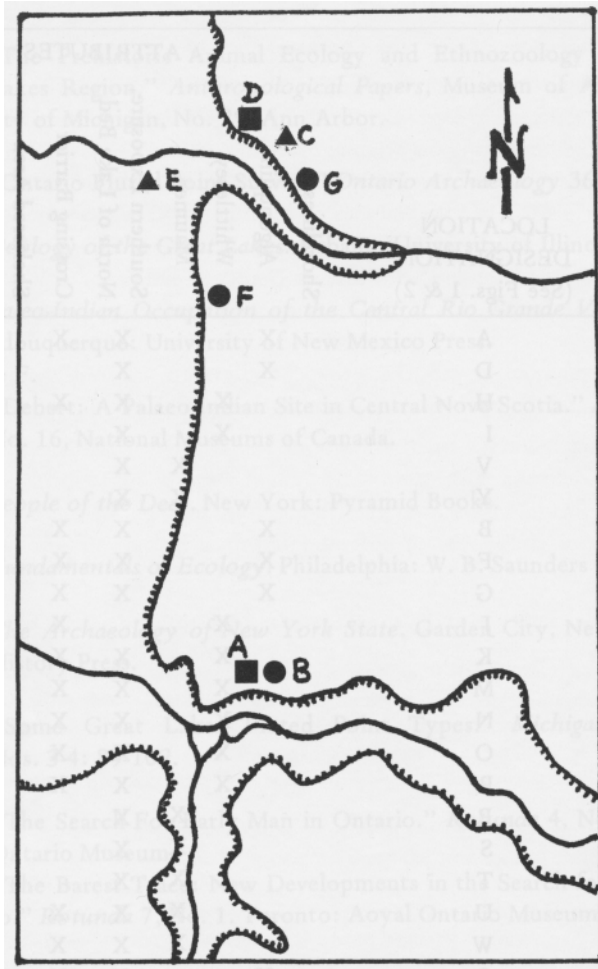
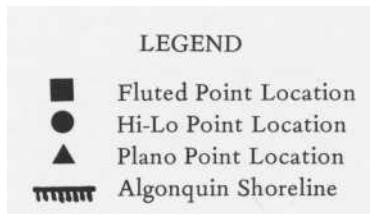


Figure 1
The Paleo Locations Relative to the
Algonquin Shoreline and Drainage,
McGillivray Township



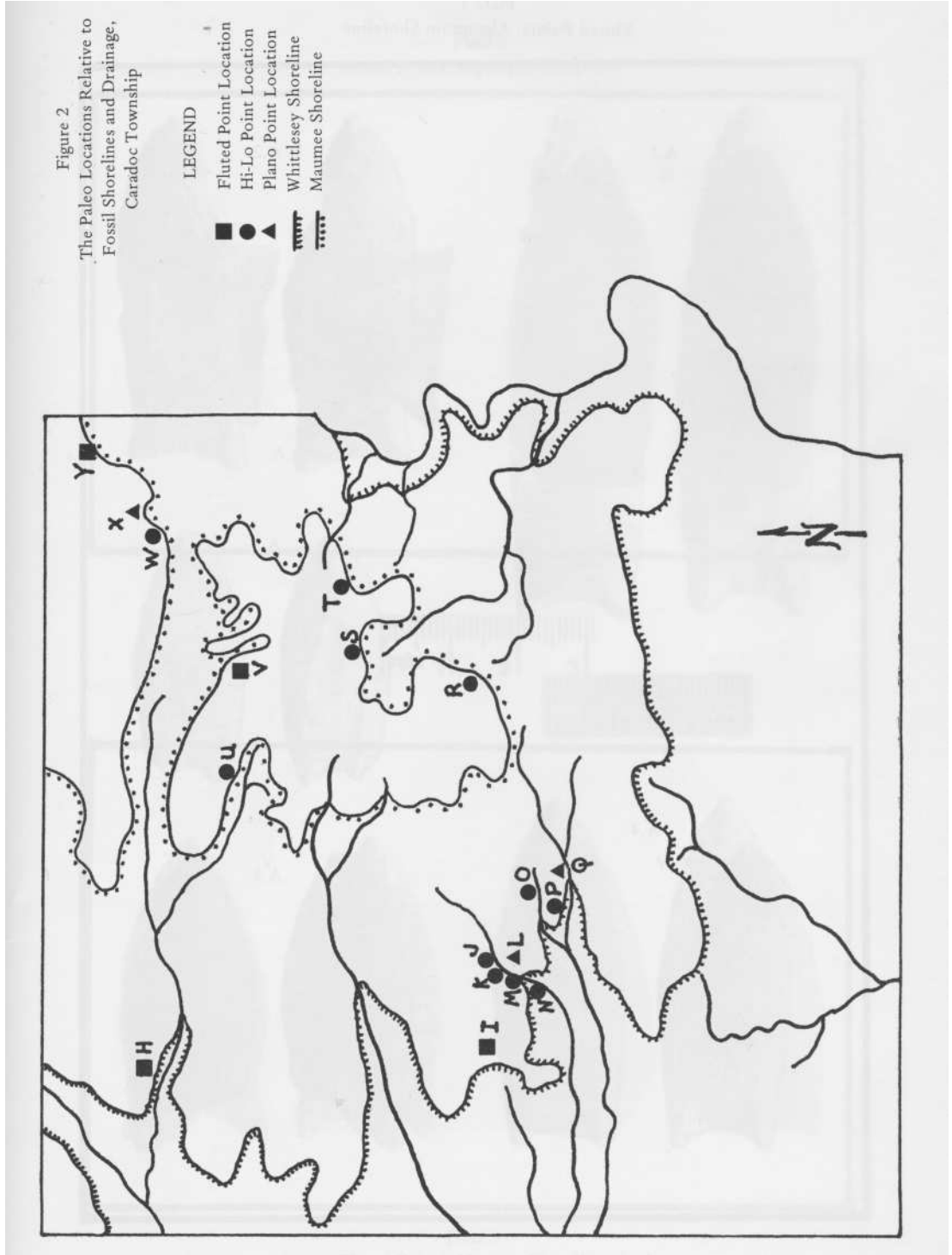


Plate 1
Fluted Points, Algonquin Shoreline

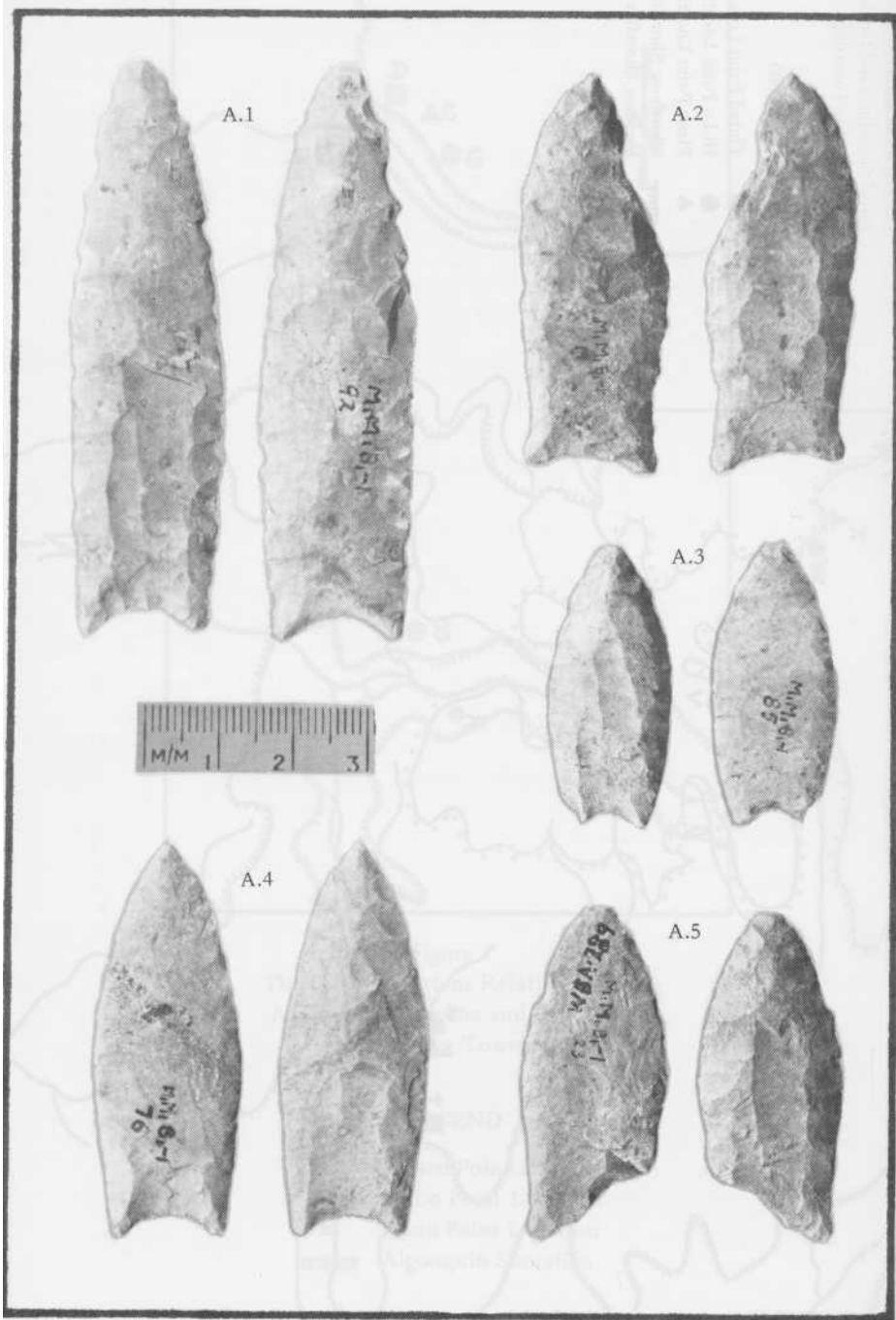


Plate 2
Fluted Points, Algonquin Shoreline

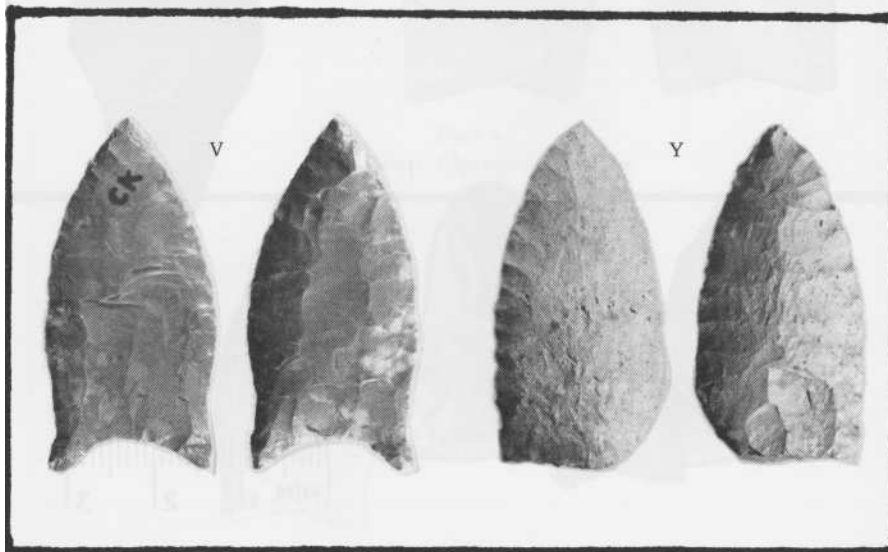
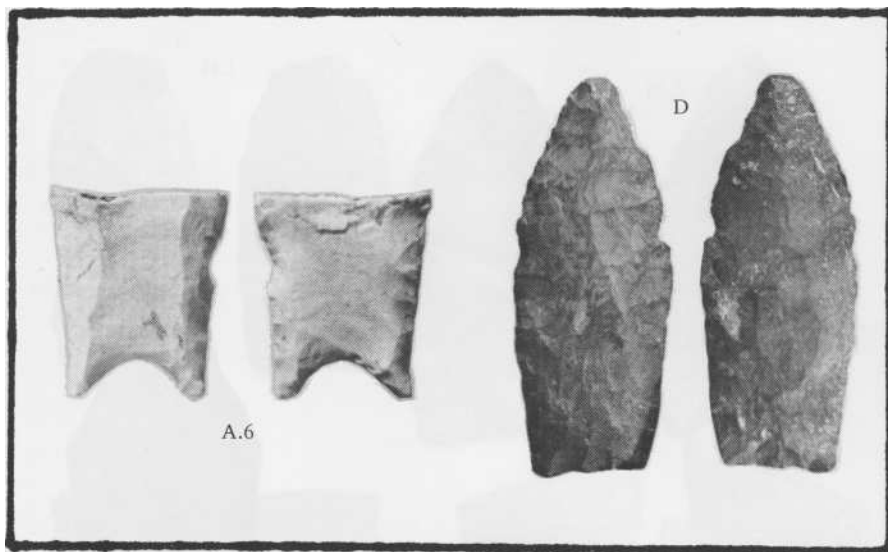


Plate 3
Fluted Points, Maumee Shoreline

Plate 4
Fluted Points, Whittlesey Shoreline

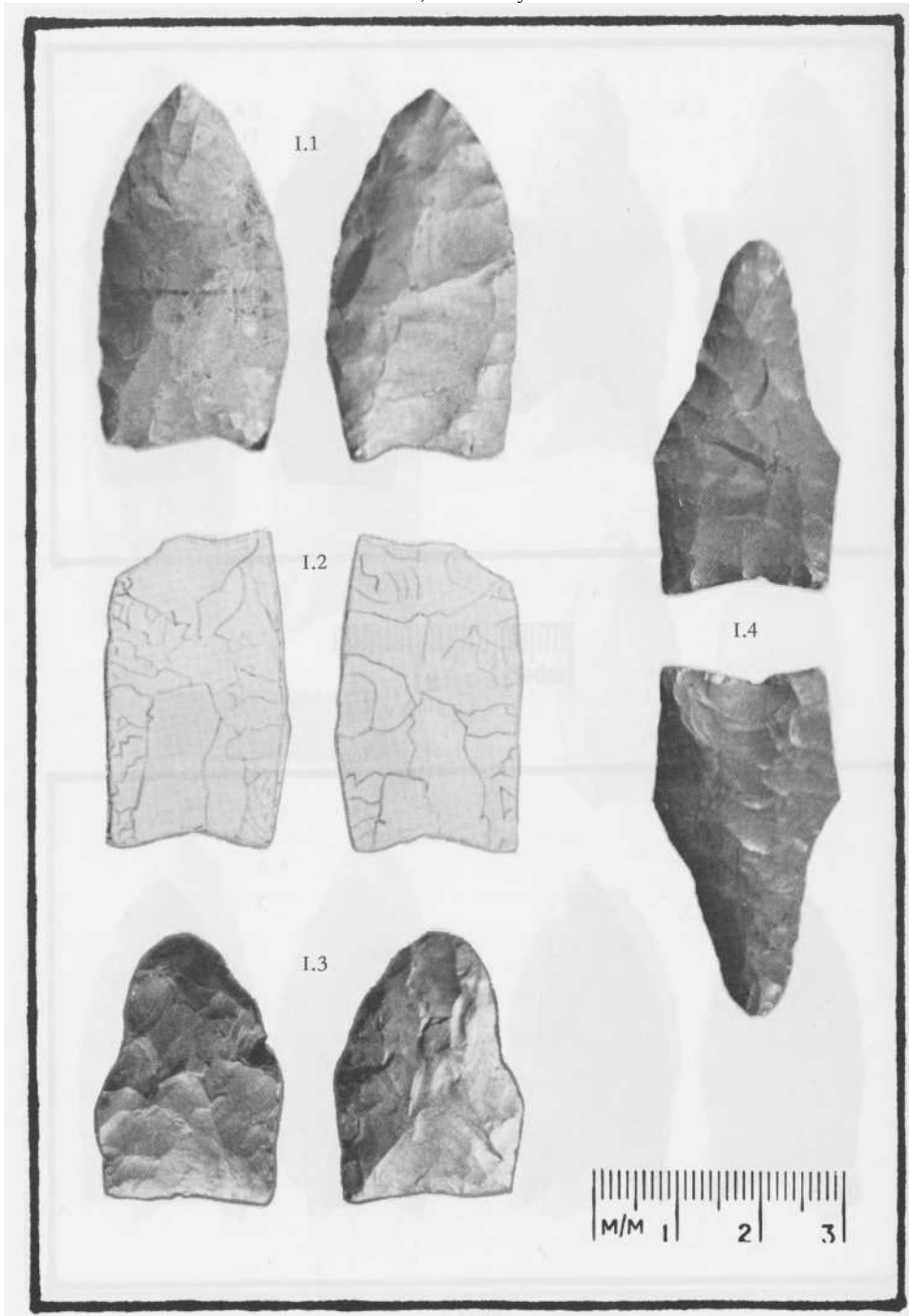


Plate 5
Fluted Points, Whittlesey Shoreline

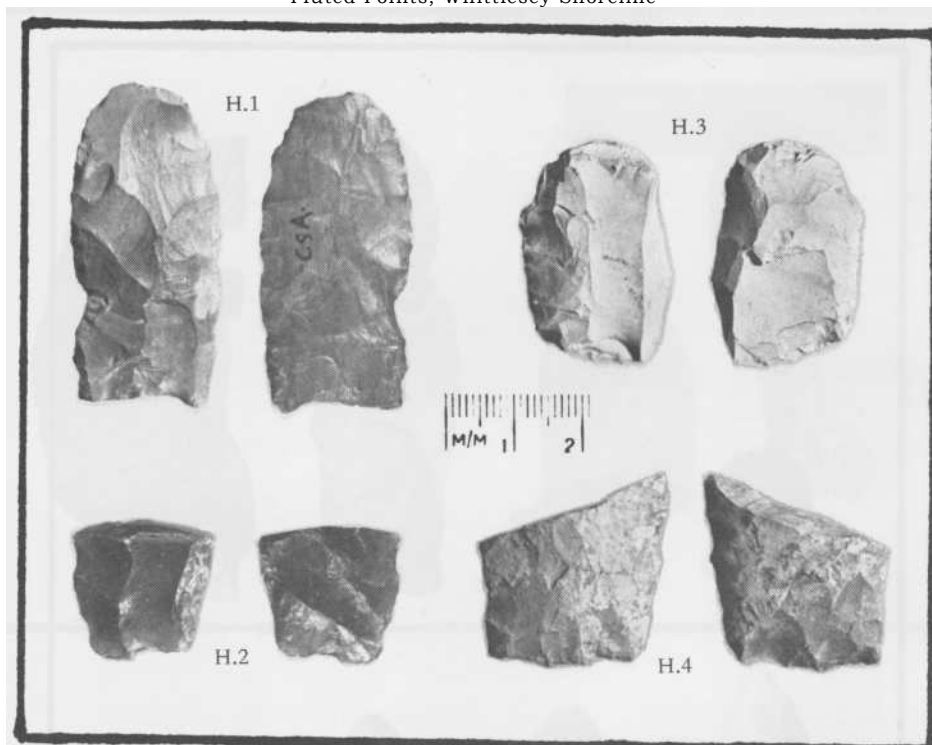


Plate 6
Hi-Lo Points, Algonquin Shoreline

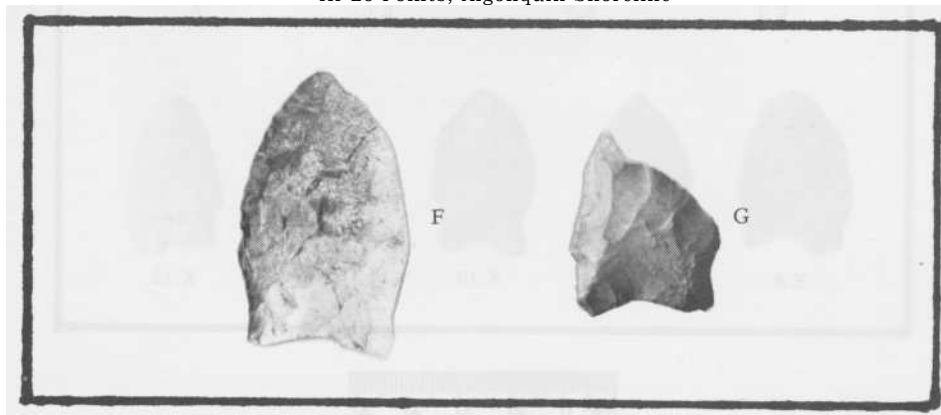


Plate 7
Hi-Lo Points, Whittlesey Shoreline

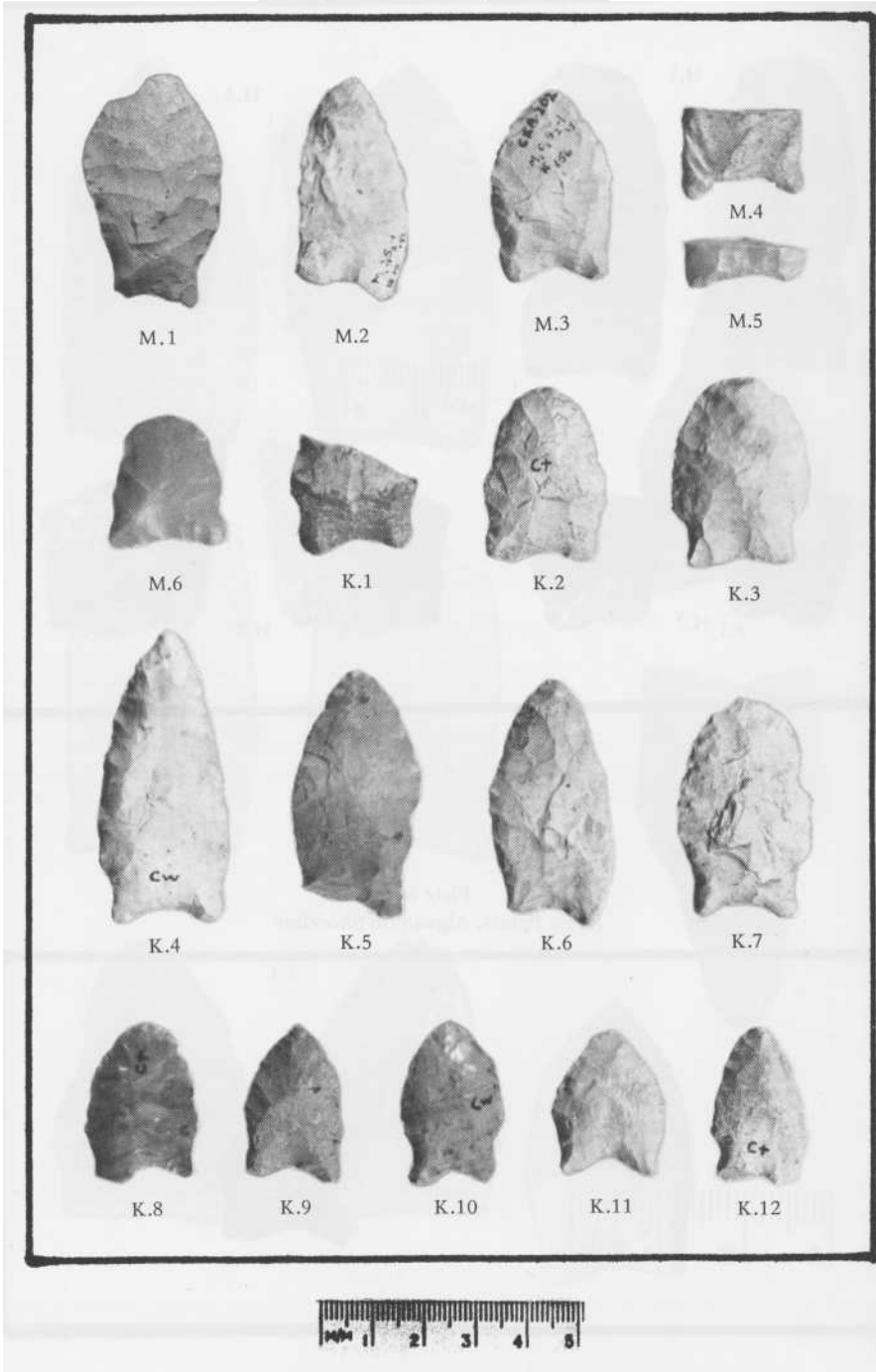


Plate 8
Hi-Lo Points, Whittlesey Shoreline

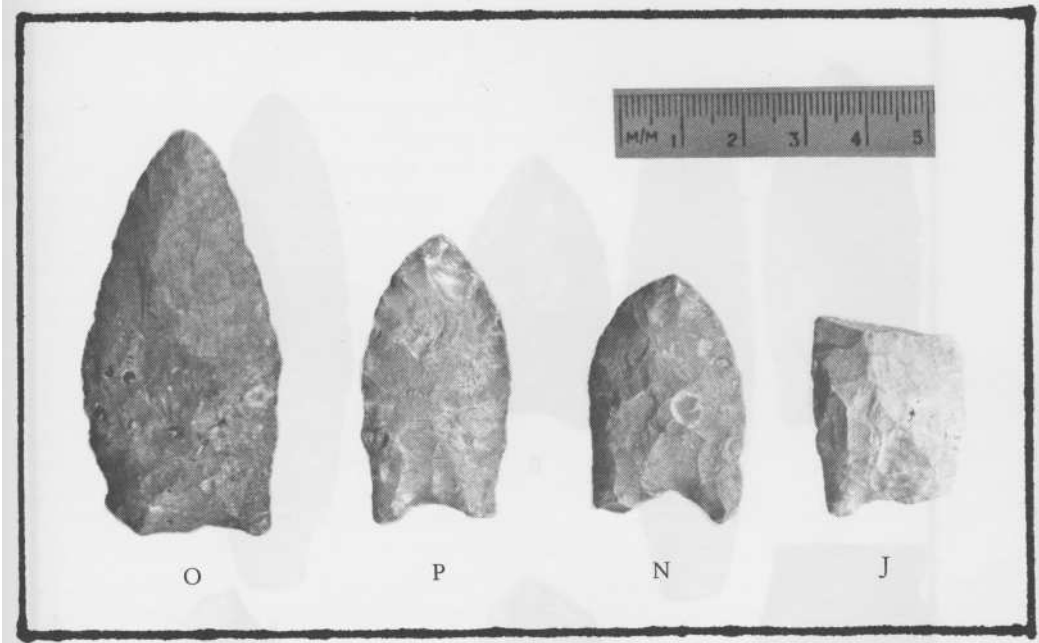


Plate 9
Hi-Lo Points, Maumee Shoreline



Plate 10
Plano Points

