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GUNFLINTS FROM FORT MICHILIMACKINAC

by

Lyle M. Stone

The subject of this paper is the study of gunflints as applied generally to the interpretation of Revolutionary period historic sites. I am assuming that the analysis of archaeological remains from a site such as Fort Michilimackinac, which was essentially removed from the Revolutionary hiatus, would have some relevance to Revolutionary period studies in providing comparative, well dated materials from a region upon which the Revolution had negligible direct impact. We might thus consider materials from a site such as Fort Michilimackinac as providing, in a sense, a control sample against which the complex and rapid changes reflected in Eastern sites can be measured. It seems to me that an understanding of these major external sites is mandatory in any definitive study of a primary Revolutionary site.

Two different topics are presented. First, I would like to provide a brief progress report on the seasonal excavations at Fort Michilimackinac. Second, the types of observations that we have been making regarding gunflints from the site will be outlined. Excavations during the past two summers have yielded a large sample of gunflints from a unique context. The study of this sample may have broad and important interpretative implications for historical archaeology in general.

Progress Report

Fort Michilimackinac, in Mackinaw City, Michigan, was established and controlled by the French from approximately 1715 until 1760, at which time the British assumed control. The British held the Fort until 1780, when it was torn down and re-located as Fort Mackinac on Mackinac Island, eight miles to the northeast. The site has been excavated every summer since 1959 by the Mackinac Island State Park Commission and Michigan State University personnel (fig. 21). My position as archaeologist for the Park Commission was established in 1969. Since that time, the State of Michigan, through the Mackinac Island State Park Commission and the Department of Natural Resources' Historic Preservation Task Force, has developed both a conceptual and an increased financial commitment to Michigan archaeology. The Park Commission is now involved in archaeological programs at Fort Michilimackinac and Mackinac and at the late 17th century Marquette Mission Site in St. Ignace.

During the past two summers we have been excavating in an area outside the Fort proper, in an adjacent park area 300 yards east of the Fort. This area was suspected, from historical documents, to have supported a large French and British

village. In 1969, plans were made by the Park Commission to construct a parking lot in this area. It was thus necessary to test excavate the area and clear it of any threatened archaeological resources. Unexpectedly, this area turned out to be rich in well-preserved archaeological materials, making it necessary to spend the last two summers and to schedule next summer to completely excavating an area which is approximately 80 feet long by 300 feet wide. This work has led to the postponement of the proposed parking lot construction for an indefinite period.

Two major 18th century structures have been located and partially excavated in this area to date. The first is a two room British structure dating after 1765; the second is a large, three room French structure (60 feet by 20 feet, with two fireplaces), probably a French trader's home and store occupied during 1745 to 1765 (fig. 22). These structure dates are assigned on the basis of their large and representative associated artifact assemblages. The gunflint sample from the French structure is somewhat unique when compared with the large sample recovered within the Fort proper and represents the topic for the second part of this paper.

Gunflint Study

The gunflint sample from the Fort proper (1959-1966 excavations) composed of 2523 specimens, has been classified and described elsewhere.¹ This sample has been classified on the basis of technique of manufacture (yielding form distinctions) into blade and spall gunflints. These are also referred to as French and Dutch flints respectively. The blade sample was further subdivided on the basis of shape. The spall sample, which exhibits shape consistency, was further divided on the basis of flint color, yielding categories of brownish-grey, black, and red (fig. 23).

The following observations and conclusions were made after a study of this large sample.

1. Of the total of 2523 gunflints, blades represent 348, or 13.7 percent of the total and spalls represent 2175, or 86.3 percent, of the total. Of the spall gunflints, 2032, or 94.8 percent, were brownish-grey in color; 8 percent of these had not been used and were measurable. Black spalls totaled 139, or 5.2 percent, and of these, 20 percent had not been used and were measurable.

2. On blade gunflint specimens which were measurable on both the length and width dimensions, a fairly consistent ratio between length and width was noted, permitting the computation of regression formulas from which the unknown dimensions of used specimens could be calculated. This procedure is possible since the dimension of width on used specimens is usually the same as when the gunflint was new. The following is an example of the type of formula computed from 31 measurable specimens of Type 2 blade gunflints. The Type 2 blade gunflint, characterized by a high degree of association between length and width (correlation coefficient of .95), is technically defined by a beveled front edge, flat surface face,

and rounded back heel.

Regression Formula for Type 2 Blade Gunflints:

$$Y = 3.74 + .74X$$

Where: X = known blade width
Y = unknown blade length

A similar formula has been derived from 177 measurable examples of brownish-grey spall gunflints:

$$Y = 3.74 + .77X$$

Where: X = known spall width
Y = unknown spall length

This formula is viewed as less reliable than the preceding, however, since it is based on a lesser degree of correlation (correlation coefficient of .79) between length and width.

3. Blade gunflint size categories could not be defined since the sample represented a size continuum from small to large. It was suggested on this and other bases that there may have been considerable flexibility in the specifications of a gunflint which would serve any particular type of gun.

4. Two "grades" of blade gunflint were distinguished: fine, with a blade surface parallel to the bed, and ordinary, which lacked this parallel correspondence. It was suggested that ordinary blades, produced at a ratio of 1 to 2.18 fine, were normal by-products of manufacturing fine grade blades. Fine grade types were more consistent in terms of length-width ratio but less consistent in terms of individual dimension variation.

5. There is some indication that spall gunflint size categories were present in this sample, although the categories were broad and difficult to objectively define.

6. Black spalls were significantly larger and more square in shape than brownish-grey specimens.

7. Spall gunflints are larger in size and are less consistent in shape in terms of length to width ratio than are blade gunflints.

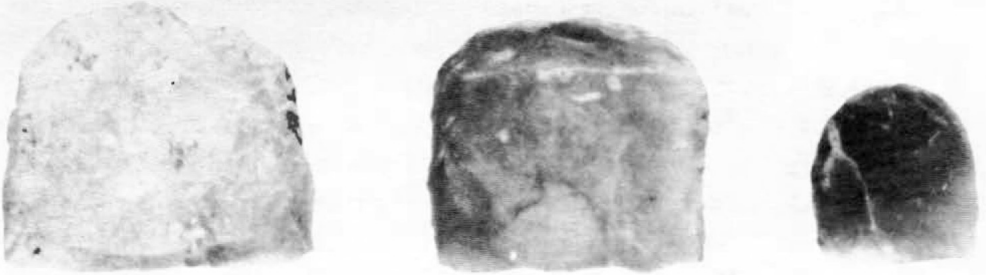
8. Blade gunflints are wider in proportion to length than are spall gunflints. These two observations suggest that blade gunflints may have served a more specialized purpose than did spall gunflints, perhaps being adapted to a specific style or make of weapon. This may also partially account for the noted lower frequency of blade gunflints.

9. Spall gunflints were used throughout the period of site occupation, with a noticeable frequency increase after approximately 1740 to 1750. Blade gunflints were either absent or rare prior to 1735-1740, but were used consistently after that time.

The new gunflint data were recovered during the past two years from a 1745 to 1765 period French house located outside the Fort.

A total of 118 specimens have been recovered in association with this structure; 18 of these, or 15.2 percent of the total, were blades, and 100, or 84.4 per-

Fig. 23— Gunflint types from Fort Michilimackinac (actual size).
Top row: brownish-grey spall gunflints
Center row: blade gunflints
Bottom row: black spall gunflints
—Michigan State University photo.



cent of the total, were spalls. Most specimens were found in and around a boulder masonry fireplace on the south wall of the French structure. Of the spalls, 32, or 32 percent of the total, were black, and 68, or 68 percent of the total, were brownish-grey. This latter figure represents a major difference between the Fort sample and the present sample. In the Fort proper, 5.2 percent of the total spalls were black, whereas outside the Fort, 32 percent of the total spalls were black. In observing this difference, an attempt was made to discover other differences between the two samples-- none could be found. That is, in comparing the two samples,

1. Specimens are typologically, and dimensionally the same.
2. The ratio of used to unused specimens was nearly the same.
3. The ratio of blade to spall gunflints was approximately the same.

The only difference noted, then, was between the relative proportion of brownish-grey to black spalls. In considering an explanation for this observed proportional difference, it would appear as though time, or period of structure occupation, had a very direct relationship to the unusually large proportion of this specific type of gunflint. Based on this evidence, and also on comparisons with the distribution of black specimens within the Fort proper, I am suggesting that this type had a limited period of use, at least at Fort Michilimackinac, which climaxed sometime between 1745 and 1765. This observation should be significant in comparing Fort Michilimackinac with external sites and in attempting to date undocumented historic sites. It is also conceivable, and this possibility has not been examined because of the absence of identified specimens from other sites, that this is a local or regional phenomenon which would differ at sites in other areas in response to different economic patterns or historical circumstances.

These specific observations regarding a new gunflint sample from Fort Michilimackinac, as well as other general conclusions as presented, may have interpretative relevance to the study of Revolutionary period sites. If we are ever to use gunflints as a consistently reliable dating tool between sites and areas, such usage will require the correlation of many such observations from a number of diverse sites.

In relating the results of this study to the interpretation of Revolutionary period sites, the following conclusions can be made. Only two types of gunflints were in use at Fort Michilimackinac during the Revolutionary period: 1) brownish-grey spalls represent the predominate type; 2) blades were being used, although in lesser frequency.

Neither black spalls nor so-called "British blade gunflints" were in use; British blades have not been found at the site.

NOTES

1. L. Stone, *Archaeological Research at Fort Michilimackinac, An Eighteenth Century Historic Site in Emmet County, Michigan: 1959-1966 Excavations*, Ph.D. dissertation, Michigan State University, 1970; "Gunflints from Eighteenth Century Fort Michilimackinac, Michigan, A Formal Analysis and Description," *The Conference on Historic Site Archaeology Papers 1970*, vol. 5, pp. 1-31, Columbia, South Carolina.

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