

**SOCIOECONOMIC STATUS AND THE BRITISH OFFICERS AT FORT YORK,
ONTARIO, 1815 – 1830**

A Thesis Submitted to the Committee on Graduate Studies
in Partial Fulfillment of the Requirements for the Degree of Master of Arts
in the Faculty of Arts and Science

TRENT UNIVERSITY

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ABSTRACT

Socioeconomic Status and the British Officers at Fort York, Ontario, 1815 – 1830

Jean-Paul Foster

The concept of socioeconomic status has been widely used in historical archaeology as a means by which to assess social group relationships. The methods used to derive socioeconomic status have been contentious, and there is not yet a universally accepted approach. This thesis aims to evaluate the comparative utility of four of the most appropriate methods, using the ceramic and glass tableware components of a collection excavated at Fort York in 1987 (Operation 1FY3) along with historic documents, associated with the Officers' Barracks and Mess. Ratio comparisons, weighted expense rank values, and ceramic price index values are used to gauge the relative cost of the archaeological collection, while documentary analysis focuses on a comparison of the amount of space assigned to officers and soldiers using contemporary plans. The assemblage, dating between the 1815 construction of the barracks and the ca. 1828 filling of the east areaway, conforms to patterns observed at other contemporary British military sites. A high level of affluence is inferred from the weighted expense rank values and ceramic cost indices, while ratio comparisons are deemed less useful. Plan analysis suggests that less space was given to the officers at Fort York than elsewhere. This, along with a lack of the most prestigious ceramics, accords with the suggestion that the highest ranking officers lived outside the garrison.

Keywords: historical archaeology, socioeconomic status, nineteenth century British military history, Fort York, Toronto history, ratio analysis, weighted expense ranks, scalar price index analysis, spatial analysis.

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A graduate level thesis is not the product of one individual alone, and so I feel I must express my gratitude for the efforts and assistance of a number of people. Foremost among these is my supervisor, Dr. Susan Jamieson, without whose efforts I expect I would still be trying to find a project. Her patience, wisdom, humour, and extensive knowledge, have made it possible for me to begin to understand historical archaeology, and I cannot express my gratitude for her willingness to answer my eternal questions on the most basic of subjects.

The faculty of the Anthropology Department at Trent University provided me with a glimpse of another world, and a different theoretical perspective than the one to which I had become accustomed. I am especially grateful for the contributions of my committee members, Dr. James Conolly, Dr. Gyles Iannone, and Dena Doroszenko of the Ontario Heritage Trust. It was wonderful to work with Dr. Leigh Symonds and Kate Dougherty as a teaching assistant, and I will take with me the lessons I learned from them on effective instruction. The changing department assistants, Keri Grey, Janice Ecclestone, Jordan Lyall, Cathy Schoel, and Kristine Williams were always helpful, and made the whole graduate process (not to mention the department) much smoother than it would otherwise doubtless have been.

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always to stay positive, and it is no exaggeration to suggest I may still be writing tiny numbers on pieces of old glass and ceramics, were it not for her and Flannery's assistance.

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A project making use of artifacts excavated at Fort York would not have been possible without the assistance and generosity of the staff at both Historic Fort York and the City of Toronto, Culture Division. Of especial assistance were David Spittal, Richard Gerrard, and Lisa Buchanan. Mr. Spittal was willing to spend a great deal of time with me, answering my endless questions about the history of Fort York. Mr. Gerrard and Ms. Buchanan also spent an enormous amount of time pulling together the collection and necessary supporting documents for me, while trying to answer my questions about a twenty year old excavation. Joseph Last, with Parks Canada, was also an incredible font of information on military archaeology in Ontario, and is thus deserving of additional recognition.

My mother, Monique, and father, Jim, have always been supportive, and without their encouragement to pursue my dreams, I expect I may have followed the advice given my generation. I am also quite certain that they may well be my only family members who understand that I do not dig dinosaurs – at least not anymore.

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It goes without saying (but here it is anyways) that without the above individuals, this thesis could not be in your hands as you read this. Nevertheless, any errors in data, recording, identification, interpretation, methodology, theoretical perspectives, or even grammar, are my own, and I accept full and sole responsibility.

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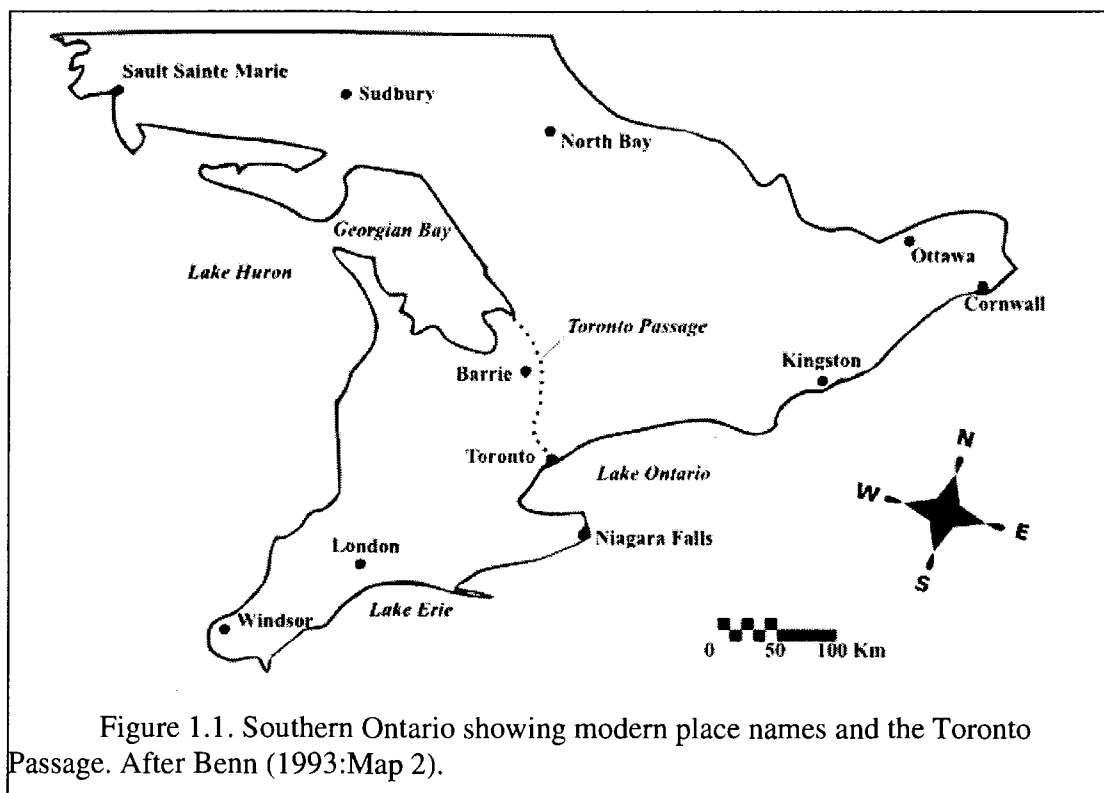
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Chapter 1 – Introduction and History of Fort York

Situated in the heart of Toronto, Ontario, Historic Fort York (AjGu-26) stands witness to virtually the entire history of Canada's largest city. The site chosen by the British for the founding of the military outpost associated with the young Town of York, was on the north shore of Lake Ontario. Proximity to the confluences of the Don and Humber Rivers meant it lay near the Toronto Passage, or Carrying-Place – a set of waterways and portages connecting Lake Ontario to the Upper Great Lakes through Georgian Bay (Careless 1984:9; Robinson 1933:1) (Figure 1.1). The importance of this cannot be overstated, as it made the area desirable both to First Peoples and French traders long before the British would exploit its value (Arthur 1986:7; Careless 1984:9; Hathaway 1934:5; Robinson 1933).



A small triangular spit of land – bordered on two of its three sides by the lake and a sizeable creek – opposite a peninsula that would later become Toronto Island, the site possessed properties of a natural harbour (Benn 1993:21). Mature mixed deciduous/evergreen forests dominated the surrounding region, though the immediate shoreline was primarily low-lying and marshy (Adam 1891:17, 20; Scadding 1873:6). It is worth noting that while Fort York was originally situated on the shore, it is now several hundred meters inland due to large-scale filling efforts enacted in the late 19th and early 20th centuries (Benn 1993:156). The present fort, still at its original location, is found on Garrison Road near the intersection of Bathurst Street and the Gardiner Expressway.

Historical Sketch

Throughout its comparatively short history as a subdiscipline, historical archaeology, particularly in North America, has taken unique advantage of its two independent – and often disparate – data sets (Deetz 1977:5; Vaccarelli 1997:81-82). Though complete integration of these historic and archaeological data is thought to permit the composition of superior research questions (Armstrong 2001:9), the most common approach has been to acquire the two separately, using each either to confirm or reject the assertions of the other (Cleland 2001:1; Noël Hume 1970; South 1978:223). The following, then, is a broad historical sketch of Fort York's past, used both to contextualize and to inform the creation of the research project described below. Limited space necessitates brevity, and so the reader is referred to Dr. Carl Benn's Historic Fort York (1993) for greater detail.

There is substantial indication that First Nations groups, spanning some 11,000 years of history prior to the arrival of Europeans, inhabited the region, making use of its extraordinary resources and fortuitous location (Archaeological Services Inc. 2004; Kapches 1980, 1990; Konrad 1973). Unfortunately, due to the enveloping nature of Toronto's growth, there is little archaeological evidence of their presence in the fort's immediate environs. Rather, the bulk of the assertion relies on the testimony of early European visitors (Scadding 1878), and archaeologically identified patterns of regional settlement.

French explorers, specifically Étienne Brûlé, were probably the first Europeans to visit the region on the shore of Lake Ontario around A.D. 1615, and by the later part of the century, European missions had been established (Archaeological Services Inc. 2004:19; Hathaway 1934:5). About a century later, the first small French outpost was established in the region, but its inefficacy at intercepting furs destined for English and Dutch ports led to its quick demise (Arthur 1986:7; Careless 1984:9; Hathaway 1934:5; Robinson 1933). Another French post, known as both Fort Rouillé and Fort Toronto, was established after A.D. 1749, though it was little more than "a fortified trading post, rather than a fort" (Hounsom 1970:xiii; also Scadding 1878). Ten years later, as the French and Indian War drew to a close with decisive British victories, especially at Fort Niagara, the decision was made to abandon the tiny outpost (Robinson 1933:140).

The area was subsequently largely uninhabited, except for a number of Mississauga bands and a few stubborn French traders and settlers, until after the end of the American War of Independence. In A.D. 1783, however, numerous United Empire Loyalists immigrated into the region from the newly independent former colonies (Benn

1993:22; Careless 1984:10-11). In order to accommodate this influx, the British Crown purchased some 250,880 acres from the Mississauga in the A.D. 1787 Toronto Purchase (Arthur 1986:10; Careless 1984:11). The following year, the first official survey of the area was commissioned by the British military (Careless 1984:11; Robinson 1933:166).

In A.D. 1793, Lieutenant-Governor John Graves Simcoe officially established the Town of York with the founding of a military garrison. Supposedly named to honour the victory of the Duke of York over French Revolutionary forces at Famars (Geeson 1906:1), there exists some documentary evidence to suggest the name had been chosen well before the May, 1793, battle (Benn 1993:25).

To date, there remains some confusion as to whether it was Simcoe who chose the location, or his superior the Governor General of Canada, Lord Dorchester. Simcoe, a military man, is thought to have favoured the area as the most defensible region west of Kingston, as it was centrally located within the province, but still far enough removed from the borders of both the United States of America and French-dominated Lower Canada to ensure its security (Arthur 1986:17; Benn 1993:21; Mulvany 1884:9). Tensions between the Americans and the British were mounting as a dual result of United States policies towards First Peoples on the one hand (Hitsman 1965:3), and illegal British occupation of frontier forts that were to have been ceded following the War of Independence on the other (Benn 1989:303). These problems notwithstanding, Lord Dorchester is thought by others to have chosen the spot, firstly, in order to control trade with the west, and secondly to ensure the continued fealty of the Loyalists in the region (Hounsom 1970:xv; Robinson 1933:175). That the fort was to receive little military or financial support throughout its early existence suggests that Simcoe and Dorchester were

indeed at odds over the garrison's *raison d'être* (Andre 1971:34; Benn 1993:25). Simcoe's plans for a network of roadways connecting York to Kingston and expanding the Toronto Passage to permit rapid troop transportation to the Upper Great Lakes – concerned as he was about the possibility of the Royal Navy losing control of Lake Ontario – were summarily denied (Benn 1993:21).

Regardless of who had made the decision on York's location, the fort was already a minor part of the town's existence by A.D. 1798, by which date the provincial government had been fully transferred there from its previous location in Newark (the current town of Niagara-on-the-Lake) and the outpost was finally granted official military status (Benn 1989:317, 1993:33, 39). Some scholars would argue that the comparatively minor significance of the outpost in succeeding years was foreshadowed in these early days when neither Simcoe nor the military – having been largely reassigned to Detroit and Fort Miamis (Benn 1989:311) – contributed as much to the town's growth as did William Berczy, a German Pennsylvanian immigrant (Andre 1971:25).

Nevertheless, the fort's very proximity to the town resulted in the only large-scale active conflict that either would experience. This centrally defining moment was a series of invasions and occupations initiated by the American armed forces during the War of 1812. The conflict has often been described as the culmination of heightened Anglo-American tension, precipitated by the events of the Napoleonic Wars, wherein France represented potential ally to both the First Nations and the Americans. Rising anxiety on all three sides are seen to have dated as far back as the conclusion of the American War of Independence (Benn 1993:41; Hitsman 1965:19). Restrictions on trade between America and continental Europe, as enforced by Britain's Royal Navy, infuriated a

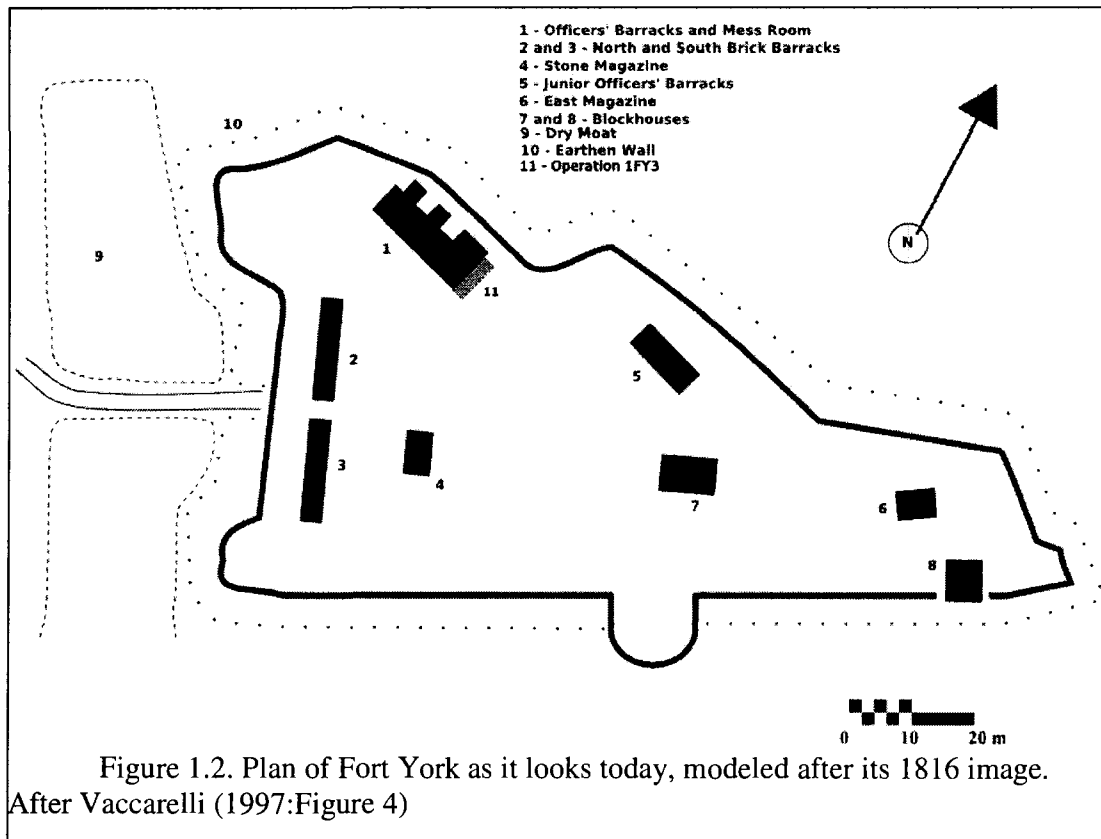
number of the fledgling states, and hawkish rhetoric increasingly demanded the military annexation of the Canadian provinces in retribution (Benn 1993:41-43; Hitsman 1965:21). Encouraged by reports of the poorly manned line of defence and the sorry state of its fortifications (Bradford 1988:43; Hitsman 1965:45), the United States Congress on 19 June 1812, declared war (Chartrand 1998:3). It was generally believed, in the words of former president Thomas Jefferson, that the military conquest would be simply "a matter of marching" (Hannon 1969:230).

By January, 1813, York had been identified as a viable target by American forces, as a result of both its central location and its inadequate defences (Benn 1993:44-45; Hitsman 1965:123). In spite of the minimal improvements initiated by Major-General Sir Isaac Brock and his successor, Major-General Sir Roger Sheaffe, an American invasion force of as many as 3500 soldiers and sailors, carried on between 10 and 23 ships (reports vary widely), was able to defeat the mere 700 defenders in well under a day in late April, 1813 (Benn 1993:44-45, 50; Cumberland 1913:11; Geeson 1906:5-8; Hannon 1969:225). Following the death of their famous leader, Brigadier-General Zebulon Montgomery Pike, in the explosion of the fort's magazine (Cumberland 1913:27; Geeson 1906:8), American troops pillaged and looted the town and fort, an occupation that persisted into early May (Benn 1993:58, 62; Hitsman 1965:127). In July of that same year, a second invasion overtook the still minimally defended fort, demolishing most of the remainder of the small outpost (Benn 1993:68-69). British forces returned in late August and finally set to rebuilding and improving defences, an effort which would ultimately deter a third invasion attempt in August, 1814 (Benn 1993:73).

Following the ratification of the Treaty of Ghent, signifying the cessation of active hostilities in late 1814, Fort York underwent a two year period of large-scale construction and refortification. These efforts ultimately resulted in the completion of 18 buildings, of which seven are now among Toronto's eight oldest still-standing structures (Benn 1992:7, 1993:12; Webb 1997:55). Among these was "a long, low red brick building running parallel to the parapet...[which] were the superior officers' quarters" (Geeson 1906:12; Figure 1.2). By the time this crucial period was complete, the garrison was capable of housing around 650 officers and men, though by the 1820s the number actually stationed there had already fallen to around 200 to 300 (Benn 1993:80). This was to be the future of Fort York: long periods of inactivity and decay punctuated by spikes in the number of troops assigned there during periods of stress, like during the Rebellion Crisis of 1837 to 1841, throughout the American Civil War (especially during the Trent Affair of 1861 to 1862), during the Fenian Raids in 1866, and through both the Boer War and the First World War (Benn 1993).

The most critical of these events for present purposes – because it sets somewhat of a terminal date to the analysis – was the Rebellion of Upper Canada, led by William Lyon Mackenzie in 1837 (Benn 1993:93). After Loyalist forces took the initiative in assaulting the rebels' stronghold (a tavern north of the city), effectively dismantling the uprising, the military worked to renovate the Officers' Barracks as well as expand the fort's garrison with the construction of a new barracks capable of housing an additional 330 rank and file soldiers (Benn 1993:102). Plans were drawn for a new, more substantial fort to defend the provincial capital, resembling more closely the fortifications at Kingston. The only result of these efforts to replace Fort York was the construction, by

1841, of a series of unfortified barracks on the present site of the Canadian National Exhibition. These living quarters, known alternately as “the New Fort” or “Stanley Barracks,” soon became the principal barracks of the Toronto garrison (Benn 1993:113-115). The contingent stationed at Fort York (afterwards referred to as the “Old Fort”)



continued to shrink considerably, until by the 1870s it consisted almost exclusively of married men and their families (James 1990:42).

By the time that the City of Toronto had purchased the garrison and its land in 1903 (note that some authors cite 1909 as the year of purchase, e.g., Brown 1988; The Friends of Fort York and Garrison Common [FFYGC] 2000:8; Webb 1997), the fort had already faced several threats to its continued existence from proposed prison sites, streetcar routes, and the construction of the Canadian Pacific Railway (du Toit Allsopp

Hillier [dTAH] 2001:26; Benn 1993:142). Though the purchase had been enacted to ensure the historic site's safety, a deal struck later in the same year resulted in the demolition of the southeast bastion and several nearby buildings to make way for a pork processing plant (Benn 1993:145; Geeson 1906:15). Planners for the Gardiner Expressway – a major thoroughfare in Toronto – originally proposed to move the fort during the highway's construction in the 1950s. This relocation was fortunately averted so that the integrity of the remaining structures and archaeological heritage of the site has been maintained (Benn 1993:158).

Starting in the 1930s, the fort was reconstructed, motivated by the approaching centennial celebration of the incorporation of the city in 1834 and the need for work for unemployed labourers during the Depression (dTAH 2001:24; Benn 1993:155). Major revisions and demolitions were necessitated by the decision to restore the fort to its 1816 image (Figure 1.2), and the site was successfully transformed into a living museum (dTAH 2001:24; Benn 1993:157). Additional restorative efforts in the 1950s and 1960s focussed largely on maintenance of the grounds and structures, while renovation and rejuvenation efforts in the 1980s gave the museum new life, repairing buildings otherwise too severely decayed for use. Smaller scale work has continued into the present, and is planned into the near future. Much of this work has either unearthed or necessitated the excavation of archaeological materials.

Archaeology at Fort York

Prior to the major restoration work of the 1980s, very little archaeological excavation had been undertaken at Fort York (e.g. Newlands 1979). Once begun,

however, the series of restorations and facility upgrades involving subsurface disturbance provided the opportunity for archaeologists to undertake intensive excavations (Spittal 1996:69). These projects have resulted in a sampling of an estimated 10% of the vast artifactual collections distributed in and around the extant structures (Vaccarelli 1997:85). In spite of the enormous interpretative potential of this material culture, very little work has been done on it beyond basic identification and cataloguing, mainly due to a lack of resources. Two studies stand out as exceptions to this generalization (Gerrard 1993; Vaccarelli 1997), but both focus heavily on questions of a stratigraphic nature. James (1990), Stromberg (1990), and Webb (1990, 1991, 1997) outline the projects undertaken between 1987 and 1996, while Brown (1988) and Webb (1992) provide more detailed preliminary reports and findings of some of those operations. These latter are generally site reports concerned with detailing the results of particular field seasons, and hence contain a wealth of information regarding dates, events, and strata.

Operation 1FY3

The present project, then, is aimed at exploring some of the analytical potential of these collections, making use of an assemblage excavated in 1987 and designated Operation 1FY3 (Figure 1.2). Composed of seven suboperations, or units, this excavation was focused along the east exterior edge of the Officers' Barracks, that part of the structure generally associated with the mess room (Figure 1.3). The suboperations, differentiated by the addition of the letters A through G to the operation number, ranged in size from 2 m by 0.65 m to 2 m by 2.5 m. The widths were largely defined by restrictions imposed by the configuration of the modern structure, such as the placement of concrete light bases and window wells (Brown 1988:6, 55). Units were excavated

following the natural stratigraphy of the site, where possible, with the exception of the upper 15 cm of topsoil, which was removed due to contamination, and the area next to the east wall, where significant disturbance necessitated the use of arbitrary levels (Brown 1988:56).

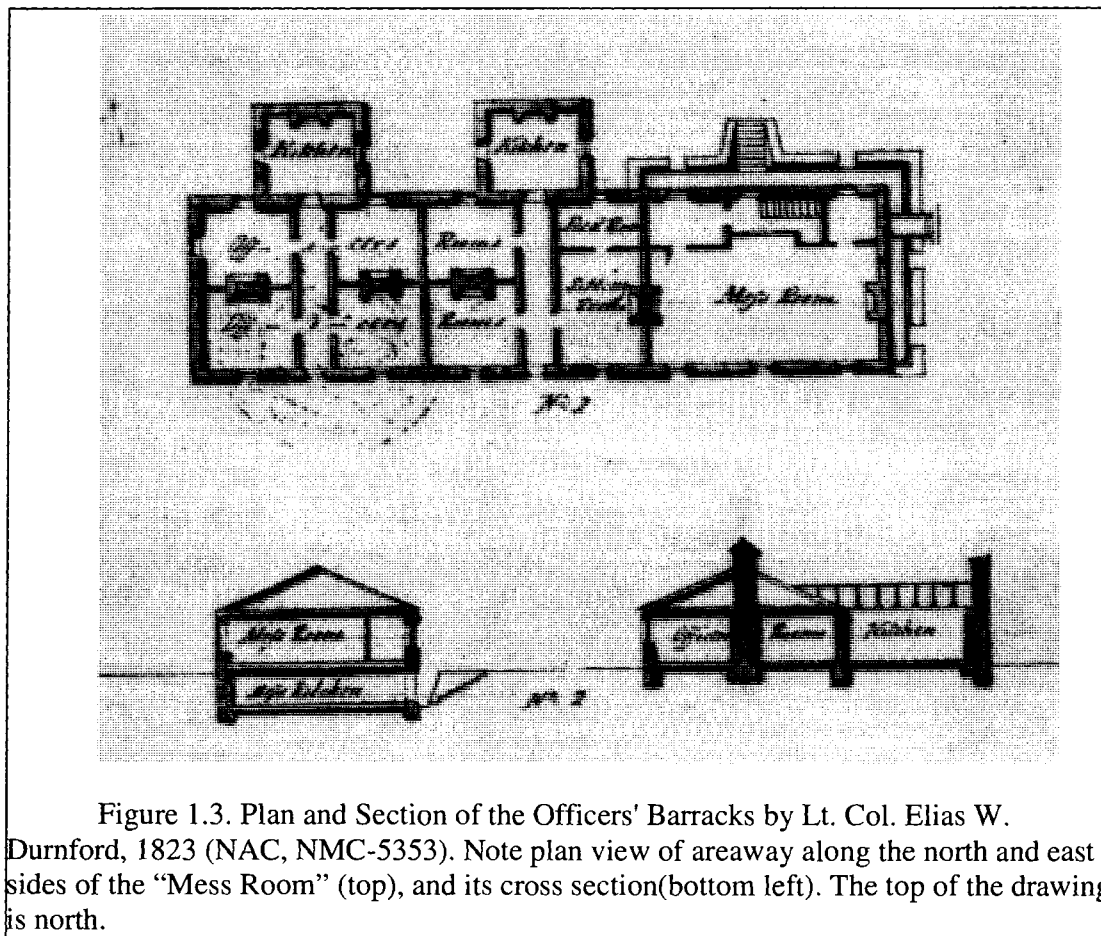


Figure 1.3. Plan and Section of the Officers' Barracks by Lt. Col. Elias W. Durnford, 1823 (NAC, NMC-5353). Note plan view of areaway along the north and east sides of the "Mess Room" (top), and its cross section (bottom left). The top of the drawing is north.

When the structure was completed in 1815, there was apparently "a faced areaway...on the outer north and east sides of the mess dining room" (Brown 1988:6). The excavation of Operation 1FY3 represents a substantial portion of the eastern part of that areaway – basically an open packed earth ditch (though there is some evidence

suggesting that the areaway was faced with mortar) containing a covered brick drain, that largely functioned to keep water away from the structure, as well as providing access to the basement kitchen. The north section of the areaway was in-filled before the end of 1829 to permit the construction of a new kitchen wing on a level with the mess room, and although there are no records regarding the in-filling of the east part of the areaway (Brown 1988:7), it seems reasonable to infer it occurred as a single event around the same time (Benn 1992:12-13; James 1990:41). Continued occasional use of the Operation 1FY3 area for refuse disposal pits, as well as more modern disturbances related to renovation and stabilization efforts, has confused some of the stratigraphy and mixed the contents of the fill (Brown 1988:56).

These later events, postdating the period of interest (below), greatly complicate the interpretation of the stratigraphy of Operation 1FY3, and therefore of the collection. The vast majority of the artifacts, predating 1830, were introduced in the single fill event as a secondary deposit, making use of existing middens. As a result, the stratigraphy, at least for this period, cannot be easily subdivided and correlated with specific times. Table 1.1 additionally demonstrates some of the complexity further added through more recent events, with the example of Suboperation 1FY3B, from which a great number of artifacts were recovered. The length of the various periods derived by Brown (1988:56-65), based on artifact composition, is also indicative of the difficulty in assigning levels to specific occupations. Later intrusions had much less of an impact, aside from mixing the deposit further.

Preliminary partial cataloguing and analysis of the artifacts collected from the east areaway was performed in 1988, under the direction of Dr. Donald Brown and Mr.

Period	Lot(s)	Interpretation
1932-1987	B1	Topsoil/top of fill.
1932-1987	B12	1960s clay drain and trench.
1932-1987	B3, B4, B5, B9	Electrician's trench.
1932-1987	B6	Post mould.
1884-1931	B20	North window well modifications.
1884-1931	B19	Electrical post hole.
1815-1960s	B2, B7, B8, B10, B11, B13, B14, B15, B16, B18, B24, B25, B26	1829 fill mixed by later and modern disturbance.
1815-1829	B17, B21, B22, B23, B27	Undisturbed 1829 or earlier fill.

Table 1.1. Stratigraphic summary for Suboperation 1FY3B, demonstrating complexity of stratigraphic profile and degree of mixture caused by original fill event and subsequent disturbances, adapted from Brown (1988:66-67).

Richard Gerrard, but the collection has since been in storage with Heritage Toronto (and its predecessor, the Toronto Historical Board). The level of detail used in the course of this effort was unfortunately insufficient for the current research, which necessitated a more intensive analysis between May, 2006, through February, 2007. An estimated 36,000 artifacts were collected from Operation 1FY3 (James 1990:42), but only 19,492 have been loaned and catalogued for the purposes of this analysis. Loaned material consists of glass, ceramics, ferrous metal, and a small quantity of archaeological bone. The vast majority of small finds (coins, buttons, armaments, utensils, etc.) and faunal remains were excluded from the loaned collection. Though these latter artifacts have great historical significance and interpretative potential, they must await future research as their analysis is beyond the scope of the present study.

Research Goals

It has been suggested that the Officers' Barracks and Mess served, for a time at least, as the social centre of the fledgling town of York, where the officers hosted dances, parties, suppers, and more (Benn 1993:89). These activities were undertaken in keeping with the accepted role requirements of the British upper classes. Unlike the rank and file soldiers, military officers in the 18th and most of the 19th centuries were drawn almost exclusively from the middle and upper classes, mainly because they were the only people capable of maintaining, fiscally and socially, the expected lifestyle of the gentleman officer under the purchase system of rank acquisition (Benn 1993:86; Reid 2002:9-10; Spiers 1980:1-29). Nevertheless, the Officers' Barracks at Fort York was commonly reported as barely inhabitable, largely owing to the damp location of the building, and, although consistently occupied by men ranked at least Captain (Benn 1992:9-12; Brown 1988), it has been shown that "married officers regularly took quarters in the town rather than in the fort *as did some single officers who could afford to live away from the garrison*" (Benn 1993:86, emphasis added).

It follows from these historical data that any archaeological materials associated with the Officers' Quarters and Mess establishment ought to reflect a fairly high standard of living. Though it may not necessarily be reflective of the highest echelons of society, there should be a significant difference between the social and economic rank of the officers and the rank and file soldiers. In order to explore this assertion, and to evaluate the utility of several methods used to derive a measure of socioeconomic status, three distinct data sets are consulted. The first involves the aforementioned archaeological

collection, directly associated with the structure, with a focus on the ceramic and glass components of the assemblage. The second makes use of historic documents, namely architectural elevations drawn in 1823 by Lieutenant-Colonel Elias Walker Durnford, a member of the Royal Engineers (e.g. Figure 1.3). Finally, because it would be impossible – given time constraints – to make the necessary comparison of the collection with one originating from a rank and file context, excavation and analysis reports from similar archaeological sites in Ontario and the West Indies are consulted, which provide a comparison of the results of the Fort York material. In making use of these data sets to explore questions of socioeconomic status, three primary goals can be identified:

- 1 – to describe in detail, primarily in terms of technology, the ceramic and glass tableware components of the collection.
- 2 – to use that data in conjunction with a number of established means of deriving socioeconomic status, with consideration of the validity and utility of said means as well as the concept itself.
- 3 – to compare these results to those published for similar sites, relying on the universality of the ease of access to goods for officers of the British military.

The potential contributions of this research to the wider archaeological literature are twofold. First, as discussed in Chapter 2, questions as to the validity of the use of socioeconomic status in historical archaeology have lately marginalized such studies. It is uncertain, however, whether identified problems are due to the theoretical application of the concept, or to the methods used to derive a measure of status. As the relative status of the officers of the British military is historically known with a reasonably high degree of certainty, the project can act as a test of the comparative utility of various methods.

Second, relations between officers and soldiers at military establishments, rigidly controlled as they were by social group distinctions, can be viewed as reflective of the whole of 19th century English society (Triggs 2005:109). As a result, any patterns observed at a garrison like Fort York (e.g., the degree of variation between the upper and lower classes) can lead to inferences about British culture that may otherwise not be possible. In addition, because access to the British market at military outposts can generally be held constant (Sussman 1977:102-103), it is possible to compare geographically distinct forts to make statements regarding the relative esteem of the separate garrisons, which may otherwise not be evident in historic documents.

Period of Study

The artifacts used in this analysis represent a period that commences with the completed construction of the Officers' Barracks in 1815, but has rather a fuzzier end point. Continued use of the site in its varied capacities has resulted in additions to the deposit of much more modern materials. Three alternate dates – 1825, 1829, and 1840 – have been identified, with varying degrees of certainty, as a possible termination for the deposit represented by Operation 1FY3.

There is some indication that the officers may have moved their mess establishment out of the building by March, 1825 (Benn 1992:11). However, given the slightly later ca. 1829 fill episode, and the lack of certainty of discontinued use of the mess past 1825, this latter date is rejected as a potential terminus for the 1FY3 deposit. The other two possibilities for this terminal date, 1829 and 1840, each have their merits. As the vast majority of the collection has been determined to date to the 1820s, with

relatively few artifacts post-dating the ca. 1829 infilling of the areaway (Brown 1988:61), it is reasonable to propose a ca. 1829 termination to the deposit excavated as Operation 1FY3. Nonetheless, the reuse and mixing of this deposit introduced more recent items (Brown 1988:7, 56; James 1990:41), and one must also consider time lag between manufacture and discard. Artifacts produced in the 1820s could have been used for a significant period of time prior to being thrown away. As a final terminal date, then, ca. 1840 is advocated based on documentary evidence suggesting a change in the use of Fort York and the Officers' Barracks, after which the deposit (and changes to it) no longer necessarily reflects the lifestyle of British officers. Both dates, then, ca. 1829 and ca. 1840, are used in limited capacities. For the purposes of constraining those forms of artifact analysis requiring use of a particular date (e.g., ceramic cost indices, Chapter 2), the earlier date is used, while the latter is preferred for social inferences drawn from the analysis. Aside from changes to the use of the Officers' Barracks, new developments in ceramic technology and decorative preferences make the period between ca. 1810 and 1840 reasonably homogeneous, thus allowing conclusions to be applied to the entire timeframe. It is also an excellent end point in terms of social inferences because the military rank purchase system and the competence of young officers had come into question by this time (Spiers 1980:19).

Chapter 2 – Theoretical and Methodological Approaches

It would be difficult to overestimate the complexity of the concepts socioeconomic status, social status, role, and class as used by historical archaeologists, sociologists, and anthropologists. These ideas were first borrowed from sociology over thirty years ago, and they have been a contentious issue ever since (Monks 1999; Spencer-Wood 1987; Wurst and Fitts 1999). It is probably because of the great potential of socioeconomic status as a heuristic tool in the interpretation of human behaviour that a wide variety of archaeological and historical sources have been manipulated in an attempt to elicit an objective measure of socioeconomic status in pre-twentieth century populations (Ackerman 1991; Brown and Bowen 1998; Holt 1991; Miller 1980, 1991; Spencer-Wood 1987). Setting aside for the moment questions of the concept's applicability and validity (cf. Gordon 1958; Monks 1999; Wurst 2006), the variety of methods by which socioeconomic status is measured have aided historical archaeologists by providing, at the very least, a framework for comparative studies. That the theoretical discourse cannot agree as to what is being studied does not eliminate the functional, if uneven, utility of the methods used in the derivation of status. These issues, though deserving of consideration, are largely set aside for this project, though they merit some consideration, mainly because the relative social status of officers in the British military is known historically, hence a focus on the methods of deriving socioeconomic status is both possible and desirable. A review of the relevant literature should help illuminate the theoretical issues and the choice of methods made for this analysis.

Socioeconomic Status in Historical Archaeology

The definition of the concept of socioeconomic status as applied to historic archaeological populations has been drawn from sociological studies of modern groups. Most have relied on the assumption that historical archaeology in the New World is strictly limited to a time span entirely encompassed by capitalism to justify this borrowing (Orser 1996:71-72), and consequently concepts relating to the understanding of consumption ought to have universal parallels with populations engaged in modern capitalism, in which there exists a hierarchy of distinct social groups. Under this framework, socioeconomic status is usually defined as an individual's position within a given social stratification system, as indicated by his or her economic means (Orser 1987:125; Spencer-Wood and Heberling 1987:56). A complex combination of factors have been included in the classification of one's socioeconomic status, including an individual's income, expenditure, number of slaves or servants retained, size of the home, style and location of home, military and political offices held, land owned, religion, ethnicity, and even physical appearance (Baughner and Venables 1987:37; Spencer-Wood and Heberling 1987:58).

Monks (1999:204) has argued that this utilization is based on an incomplete comprehension of the complexity, or contentiousness, of use of the terms "socioeconomic status" and "class" in sociology, a discipline similarly struggling with its own definitions (Crow 1997:67-69; Gordon 1958:210-222; Grabb 2002:106-110; Sayer 2005:70-94). Part of this undoubtedly arises from a mistaken equation of socioeconomic status with the concept of social status, which in classical sociology and anthropology is defined as an individual's social value and position (Bottero 2005:58; Slotkin 1950:121; Weber

1999:88). Because social status divisions frequently include an economic dimension, and the two are inextricably linked (Bottero 2005:59-60), historical archaeologists have often operationalized socioeconomic status as a combination of these social and economic variables, regarding economic status as an indicator of social status, and treating the two as operationally inseparable (Brenner and Monks 2002:19; Monks 1999:209-210; Spencer-Wood and Heberling 1987:59). A fundamental component of the aforementioned critique states that this definition is too shallow, permitting too many ambiguities in analysis, and that we need to separate, operationally and conceptually, these economic and social variables (Brenner and Monks 2002:43).

What often seems misunderstood, however, is that socioeconomic status is not equivalent to social status, or even an indicator of social status. Rather, it should be conceptualized as a scale against which to measure social and economic inequality, identifying lifestyle conditions that are based especially on education and income. It is, opponents of socioeconomic status argue, a simplistic, external identification of supposedly objective groups, which is unidimensional and inferior to the measurement of social class (Grusky and Kanbur 2006:15; Wurst 2006:192).

An alternative approach has proposed instead that status is relational, meaning "an individual's status is determined by reference to someone else's status" (Adams and Boling 1989:70). This view of "status" incorporates more explicitly an emic, internal view of relations, a concept that is typically related to Marx and Weber, and the study of class.

Emically-derived socioeconomic status has often been defined based on documentary sources (e.g., Ackerman 1991), in the hopes that through engagement of the

results with material culture, predictive models of behaviour can be developed (Bragdon 1981:27; De Cunzo 1987:266; Spencer-Wood 1987:1; Spencer-Wood and Riley 1981:40; Stine 1990:38). The focus in this research has been on deriving an objective measure of wealth based on the economic means of an individual, that is, on his or her means of acquiring wealth, including land, bound labour, cattle, and horses, somewhat in accordance with sociological approaches (Ackerman 1991:26). The results are compared with those derived from material deposits associated with known historic individuals with known social and economic statuses (e.g., Brenner and Monks 2002). Shephard (1987:163) notes, however, that while "certain material correlates of social group membership have been identified, the patterning in the data has often proved to be fairly subtle." Furthermore, a lack of correlation between documentary and archaeological data sets is often identified. This is typically attributed to the fact that both social *and* economic factors govern purchasing and discard patterns (Brighton 2001:18; Shephard 1987:167). Wealth and occupation are seen as intricately connected indicators of social and economic standing, increasing in relation to one another (Bottero 2005:75; Brenner and Monks 2002:18-19; Brown 1999:151; LeeDecker et al. 1987:233). The underlying assumptions behind such studies of material remains in archaeological sites is that wealthier individuals will acquire more expensive goods, and that monetary cost indicates the level of social status represented by a commodity (Miller 1980:3; Monks 1999:206; Spencer-Wood and Heberling 1984).

Consumer Choice and Socioeconomic Status

The notion of consumer choice and the study of consumer behaviour, on the other hand, are inherently related to the notion of socioeconomic status, and as such, projects

focused on consumption peaked in the late 1980s and early 1990s (LeeDecker 1991:30; Purser 1992:105). Proponents of a consumer choice framework contend that it takes a multivariate approach to socioeconomic status, including ideas of individual choice (Monks 1999:208; Spencer-Wood 1987:12).

Here we should incorporate the concept of role, the appropriate and obligatory actions required of members of a social status group in every social situation (Banton 1965:2; Slotkin 1950:94-96). Every individual has multiple roles to play in their society, as they experience different situations based on their relationship to those with whom they are interacting, and they move through these roles daily. Roles are not individual, however, but general and applicable to an individual based on their membership in age, gender, class, and ethnic groups (Banton 1965:4; Lloyd 1987:351). The concept has been most frequently used in the study of gender and sexuality (Stebbins 1996; Valentine 2002), and the socialization and acculturation of children (Mead 1963; Rapoport and Kahane 1988). Expected roles can undoubtedly influence purchasing patterns, and may be an intriguing avenue of research in historical archaeology.

Consumer choice studies benefitted the discipline by encouraging consideration of all household members and processes, where socioeconomic status analysis previously generalized based on the head of the household. The decisions made by a group or individual are seen as governed by their social situation, which is defined by the interaction between ethnicity and socioeconomic status (Clark 1987:394). Attempts to introduce agency and individualism into the social sciences, as a result, are seen to blur social formations (Wurst 2006:193). Wurst (2006:193) has argued that the "heyday of [these] consumer choice and status studies has certainly ended in historical archaeology,"

in favour of a very different interpretative approach, in which class is given a relational definition and socioeconomic status is rejected as a heuristic device.

Class and Socioeconomic Status

While class analysis has long been central to sociology, it has only been a marginal contributor in anthropology, and by extension archaeology (Ortner 2006:20). When it has been introduced, class and socioeconomic status have frequently been operationalized as synonymous concepts within historical archaeology, usually without an explicit recognition of any differences, and in spite of significant conceptual differences in sociological literature (Brown 1999; Clark 1987; LeeDecker et al. 1987; Shephard 1987; Stine 1990). Common metaphors invoked in these studies include the presence of a “social ladder,” “social strata,” or similar notions of a hierarchy of social groups. In this view of class or status, class is seen as a fixed entity, a universal abstraction equally applicable to different time periods and social groups (McGuire 1992:185; Wurst 2006:191). Though some authors have argued for a relational view of socioeconomic status, akin to that of class (Adams and Boling 1989:70; Delle 1999; Rotman and Nassaney 1997:43), Wurst (1999, 2006) argues that the very concept of socioeconomic status is inappropriate, and that we should instead focus on class for our interpretative frameworks.

There currently is much confusion regarding the meaning and use of the class concept in historical archaeology, and the social sciences as a whole, which some contend is related to the differences between a gradational and a relational perspective (Wurst and Fitts 1999:1). Proponents of the latter perspective argue that class ought to be

conceptualized as a social relationship, within concrete historical contexts, typically a neo-Marxian approach (McGuire 1992:184-186; Ortner 2006:27; Wurst 1999:7, 9).

Class analysis has undergone a great deal of revision since Marx's introduction of the concept into sociology and related disciplines, where class was defined by a group's role in the mode of production (Ortner 2006:65; Wright 1997:17). Weber (1999:84-87) went on to identify class as the base for, and result of, social actions, as determined by one's relationship to the market. Warner (1960) suggested that class be viewed as a subjectively identified group membership, most recognizable in terms of so-called life chances, a notion later taken up by Bourdieu and his associates (Grusky and Kanbur 2006:19; Wright 2005:183-185). There has even been the suggestion recently that class and class analysis are no longer valid in a postmodern world, where inequality is defined more by social variables, and market relationships are no longer indicative of social group membership (Pakulski 2005:175-176). Others maintain that class is still worthy of study, contending that it remains a major, pervasive social force, and influences both group and individual interactions, while shaping stratification and inequality (Savage 2000:68; Wright 1997:1; Wurst 2006:201).

In most cases, when historical archaeologists use socioeconomic status and class interchangeably, it is because they are defining the latter as a structural location, rather than as a process or social relationship (Wurst 2006:191). While this is an inadequate use of class, it is legitimate to use socioeconomic status in a scalar sense, if it is taken only as a measure of inequality.

Studies that have taken a truly relational view of class in historical archaeology are rare, but typically approach material culture as an active tool in inter- and intra-class

communication, maintenance, and creation (Fitts 1999; Garman and Russo 1999; Wall 1999). Most of the differences between these studies and earlier ones focused on the identification of socioeconomic status, however, are theoretical, and manifest more in their rhetoric than in the actual methodology employed. For example, in their analysis of ceramics from a nineteenth-century rural poorhouse in New England, Garman and Russo (1999) rely on the identification of expensive pottery to make inferences about the relationship between different classes. In analysing the frequency of “high-end” decorations and ware types, and explaining differences by reference to divergent mean ceramic dates, they are using identical techniques and even similar assumptions to those relied upon in a much earlier article by Turnbaugh and Turnbaugh (1977). However, the relational approach to class has encouraged a modification in how results are interpreted, emphasizing the study of interactions between self-identified social groups and viewing material culture in a more dynamic manner (e.g., Brighton 2001; Milne and Crabtree 2001). In the interests of remaining consistent, the remainder of this survey relies on the term “socioeconomic status,” rather than “class,” with the understanding that class is neither synonymous nor even truly compatible with this term in its present usage.

Socioeconomic Status in this Thesis

Clearly, there are some very significant issues in how best to operationalize socioeconomic status for the purposes of the present project. If we view the concept of socioeconomic status as one approach by which to rank social groups within a standardized hierarchy (Bottero 2005:75), rather than as a means by which to infer social status, then this complexity is somewhat alleviated. It is a unidimensional measure of inequality based largely on the economic factors influencing social life (Grusky and

Kanbur 2006:13-15). Lifestyle, with both social and economic variables, can be ranked in terms of inequality by methods of socioeconomic status measurement. The results are not taken as strictly indicative of social status or class, however, because these latter cannot be reduced to a unidimensional scale (Grusky and Kanbur 2006:16).

The commissioned officers of the British military in the early nineteenth century were drawn from the upper ranks of society, and thus can be characterized as possessing both high social status, and high economic status. The question for this thesis then becomes one of whether there are material correlates to this pattern, and whether the methods by which historical archaeologists infer socioeconomic status from material remains are valid.

Potential Contributions of Socioeconomic Analysis

The study of socioeconomic status in historical archaeology has often been related to an interest in society's underclasses, and the dearth of written evidence pertaining to them (Ackerman 1991:26). Because the history of these groups, frequently illiterate or deemed unimportant by their contemporaries, has often gone unrecorded in the written record, we must rely on their archaeologically recorded stories. For example, research on pre-Civil War plantations in the southern United States has illuminated elements of the early Black experience in the Americas that were previously unknown (Fairbanks 1984:1). Much has similarly been said about the role of women before the twentieth century, especially in terms of how socioeconomic status is reflected in their household purchasing decisions (Wall 1991, 1999; Wheeler 1999), health and sexuality (Ross 1993; Seifert 2005; Yamin 2005), and child-rearing practices (Crist 2005; Fitts 1999). The study of the non-wealthy, especially mid-level groups, also has the potential to establish a

baseline against which to compare others (McBride and McBride 1987:143), and eventually may provide an index for socioeconomic status calculations across time and space. Finally, it has been suggested that a relational view of class provides the unique opportunity to study the means through which power structures are established and maintained (Delle 1999:136; Fairbanks 1984:5; Purser 1992:107; Wall 1991:69). Socioeconomic status in historical archaeology should be inferred, above all, simply because it permits a methodical comparative examination of different social or economic groups, establishing their hierarchical position. Caution needs to be taken in making these inferences, however, and the historical context of each assemblage and group deserves, indeed requires, consideration (McGuire 1992; Wurst 2006).

Issues in Socioeconomic Analysis

It would probably be misleading to leave this theoretical discussion without more of a pessimistic note, particularly relating to alternative factors influencing consumption patterns and limitations in the use of socioeconomic status. Because socioeconomic scales are unidimensional, they cannot represent all the internal processes and mechanisms that establish and maintain social stratification, only identify it. Literally dozens of potential influences on purchasing behaviour have been identified, including differential market access, ethnicity, and household life cycle (Baugher and Venables 1987:33; LeeDecker et al. 1987:233-235; Miller and Hurry 1983:80; Stine 1990:42), all of which affect, but cannot be explained by, socioeconomic status. It is important, too, that documentary data be collected on all known members of the household under analysis, if possible, including family, boarders, and servants, rather than simply on the head of the household as has often been the practice, as all of these individuals likely

contributed to the artifactual assemblage under scrutiny (LeeDecker et al. 1987:233; Peña and Denmon 2000:79; Spencer-Wood 1987). In addition, material goods may incorporate a multitude of meanings aside from the ostentatious display of wealth and status. For example, Wall's (1999:114) study evaluating differences between working and middle class assemblages suggests the possibility that lower class households avoided purchasing sets of ceramics in order to emphasize individuality at the dinner table. Burley (1989:103) similarly proposes that the use of fine transfer-printed ceramics by non Anglo-American peoples meant something entirely different; rather than a display of status, ceramics were a means by which to communicate a social code for the *hivernant* Métis, in effect functioning to educate younger generations. These alternatives suggest that the very concept of socioeconomic status measurement may be applicable only to middle and upper status Anglo-Americans (Bragdon 1981:27; Spencer-Wood and Heberling 1984:33).

The documentary biases that archaeological analyses are meant to help alleviate similarly exist in material assemblages. Questions have been raised regarding which materials are discarded in a manner that the willing archaeologist may discover them – that is, of course, if they survive to be found (Spencer-Wood and Heberling 1984:46; Wheeler 1999:43). Regarding what is recovered, Monks (1999) suggests that we consider two different classes of portable material remains based on their historic use. Durables are those goods that serve a dual utilitarian/display function and are meant to be used over a longer period in the household, like ceramics, glasses, and utensils. Consumables, on the other hand, are most simply conceived of as commodities meant for use in a comparatively short time frame, like meats, medicines, jams, etc. Thus,

"consumables...are more likely to indicate strictly utilitarian economic considerations than are durables" simply because of their more functional purpose (Monks 1999:213). In this way, then, "durables" have the power to illuminate both social and economic factors influencing purchasing patterns, which would in fact give equal weight to both utilitarian and non-utilitarian economic considerations (i.e., ostentatious display/communication of social status). As a result of these critiques, socioeconomic status studies have become increasingly interested in the social and ideological functions of material culture, which Monks (1999:213) links primarily with durables. This neglects, however, the very real power of certain forms of consumables, namely food, to incorporate non-utilitarian social functions as a form of cultural capital (Counihan 1999:6; Wilk 1999:252). While most work has viewed food in terms of feasting, a process by which it is converted into prestige (Dietler and Herbich 2001:257; Perodie 2001:187), a quantitative approach, others have focused on how certain qualities of food signify and reinforce social positions (Counihan 1999:8; Goody 1982:99; Keating 2000:310). Thus consumables can equally represent non-utilitarian functions, often through the imposition of either social or economic restrictions on accessibility.

Data Sources Used in Socioeconomic Analysis

Nearly every conceivable data source has been consulted in one study or another in the inference of socioeconomic status, with the ultimate goal of identifying social stratification. The underlying assumption behind most of these is that the wealthier social strata will purchase more expensive goods and commodities in order to display their social or economic superiority (Monks 1999:206). Where available, documentary analyses have been considered to be the most comprehensive measure of wealth – or the

economic means of acquiring wealth at the very least – including articles not frequently found in archaeological contexts, like furnishings, servants, land, horses and cattle owned, and clothing (Ackerman 1991). The importance of documents such as probate inventories and census records is emphasized in studies that suggest that consumer goods historically accounted for only a very small proportion of an individual's physical wealth (McBride and McBride 1987:144; Spencer-Wood and Heberling 1984:36). Consumables, including faunal (Brown and Bowen 1998; Ewen 1986; Milne and Crabtree 2001; Morrison 1991; Scott 2001) and floral (Gremillion 2002; Holt 1991) assemblages have been consulted as well, to varying degrees of success. The majority of studies, however, have been concerned with the more durable forms of material culture, including ceramics, glassware, personal items (including buttons, tobacco pipes, clothing, toys, etc.), the organization of standing structures (or their archaeological footprints), and landscape analyses. The most rigorous studies will, of course, combine a wide variety of approaches and data sets – though it should be noted these often produce the most ambiguous results (Brenner and Monks 2002; Drucker 1981; Fairbanks 1984; Garrow 1987).

Introduction to Methodology

The primary goal of this research project is to describe in detail Operation 1FY3's ceramic and glass assemblage, and then to evaluate four means by which historical archaeologists commonly measure and infer socioeconomic status from these sorts of remains. Three of the four techniques used apply to portable material remains, including, in order of complexity if not accuracy: a quantitative comparison of ratios of significant artifact types, like tableware to teaware in ceramics (Ferris and Kenyon 1983; Kenyon

1992; Spencer-Wood and Heberling 1987), or stemware to tumblers in glass (Jones and Smith 1985); an ordinal level expense ranking (O'Brien and Majewski 1989; Vaccarelli 1996); and the most rigorous – and arguably the most controversial – approach, an emic measure of expenditure on ceramics (Miller 1980, 1991). The final approach, which assesses historic documents, compares the Officers' Barracks with the living quarters of the rank and file soldiers to examine status as depicted in the relative living space assigned to each group (Cary 2003; Stine 1990:44-45; Triggs 2005:124-126), and the comparative amount of window glass in the facade of each structure. These methods all fit well with the available data, and are varied enough to allow comparison between them.

Requirements of Material Culture Analysis

The database and analytical requirements for each of the methods used for the analysis of the ceramic and glass assemblages are strikingly similar. Minimum vessel counts, comprising both vessel form and uncommon ware types (like porcelain and basalt), and decorative technique and motif, together ought to be sufficient for the proposed analysis. Unfortunately, the existing database – generously provided along with the collection by Heritage Toronto – does not contain all the required information, and catalogues only about a third of the entire collection. Thus, a new analysis focussing on those data useful for eliciting socioeconomic inferences through the means described below is undertaken.

Majewski and O'Brien (1989:87-89) describe two methods for determining minimum vessel counts, the “vessel-equivalents method,” and the “subjective-assessment method.” The vessel-equivalents method requires the measurement of the rim length of sherds as a representation of the completeness of the original vessel, which once grouped

into “types” can be summed and divided by the expected vessel circumference (Majewski and O'Brien 1989:88; Orton et al. 1993:171-173). This approach tends to be less useful in the analysis of British-produced ceramics post-dating the end of the eighteenth century, because one of the requirements of the method is that rim sherds be definitive of a singular form (Orton et al. 1993:171). Nineteenth century British ceramics tend to be of standardized forms, so rim sherds from several vessel forms can be identical. The subjective-assessment method, considered by others to be more accurate and rigorous (Vaccarelli 1996:58-59), relies on large-scale cross mending of sherds across levels and units, and is widely used "because it provides a key set of data for use in higher-level analyses" (Majewski and O'Brien 1989:88). Unfortunately, I did not have permission to glue or tape conjoining sherds together, and so I had to consider alternative methods.

Instead, in order to acquire a minimum vessel count, an alternative approach was chosen, following Gusset (1980) and Springate (1997:62), whereby sherds are assigned to vessels based on shared characteristics, including vessel wall and base thickness, footring depth and form, rim profile and diameter, decorative technique and motif, and fabric (Appendix I). Glass tableware sherds are similarly counted by distinguishing characteristics, including foot or base formation, production technology, colour of metal, and decorative technique and motif (Appendix I). Artifact descriptions were input into a Microsoft Access 2000 database in order to allow analysis with minimal handling of the artifacts. Manipulation and interpretation of the data using the computerized database resulted in the identification of 226 vessels out of the 7505 ceramic sherds in the collection, and 37 drinking vessels of the 179 identified glass tableware fragments. An acceptable error is introduced here due to the highly fragmented nature of the collection,

which means that occasionally a single life-vessel may have been counted as two based on sherd characteristics. This tends to result in somewhat of a maximum vessel count as a result, and so the crossmending approach is obviously preferable. In order to alleviate this issue as much as possible when this error was suspected, a visual confirmation of the sherds normally permitted me to assess the number of life-vessels actually represented. In addition, when conjoining sherds were identified they were noted in the computer database, which further refined the minimum vessel counts. Although this does not produce as accurate an estimate as the method above, it is a viable alternative useful for when crossmending is not possible. Below is an explanation of how that data is used in accordance with the methods outlined above.

Ratio Comparisons

Many studies have suggested that the ratios between different forms and functions are indicative of status, and that such an analysis of proportional composition is more enlightening than simple frequency counts (Drucker 1981:64; Turnbaugh and Turnbaugh 1977:100; Yentsch 1990:24). These have been especially common in plantation studies, where the ratios of plates to bowls – a reflection of differences in diet – has been taken to indicate whether a deposit was created by slaves and overseers, or planters (Drucker 1981:59; Orser 1996:120). In mid to late nineteenth century sites, Ferris and Kenyon (1983:11) have noted that "wealthier households tend to have [a] higher ratio of plates-to-teas than poorer ones," because "as wealth increases, plates are acquired at a more rapid rate than 'teas'." This is probably related to the bias inherent in disposal patterns, whereby items more frequently used are more commonly disposed of due to breakage. This would suggest that dinner parties were the more common means of entertaining guests than

were the tea services noted by Spencer-Wood (1987). In addition, the increased frequency with which all parts of society imbibed tea and coffee means that quantity became less valued than quality in the purchase of tea sets (O'Brien and Majewski 1989:86). The source of variation in ratios, however, has been the cause of some debate. Some have argued, for example, that diverse preferences of vessel forms are related more to differences in foodways caused by ethnic, rather than economic, adaptations (Bragdon 1981:27). It should be noted, however, that in many historical contexts, certain ethnic groups and even genders have had definite socioeconomic statuses, and are thus theoretically inseparable (Hall and Silliman 2006:12-13; Wurst 2006:197).

Glass artifacts have been utilized far less frequently in socioeconomic analyses. With the sole exception of an abortive attempt by Heberling (1987:212), there have been no sustained efforts to analyze glass in a methodical manner like the price indices for ceramics discussed below. Rather, the bulk of glass studies have focused on the comparative frequency of different forms of bottles (Bittman and Alcaide 1984:70; Heitzman 2000:307; Peña and Denmon 2000:92), or tableware (Bragdon 1981:34-35; Brown 1999:161; Jones and Smith 1985:34; O'Donovan and Wurst 2001-2002:78). In the case of the former, a high number of imported fine liquor bottles, as opposed to the more common local beer bottle, is thought to indicate higher status (Bittman and Alcaide 1984:70; Heitzman 2000:307). Higher frequencies of stemmed "wine" glasses, as opposed to tumblers, meanwhile, are thought to correlate with high status occupants (Jones and Smith 1985:38, 52).

The analysis of ratios here, then, focuses on the differential frequencies of tableware to teaware, and glass stemware to tumblers. Where Ferris and Kenyon

(1983:10) test the ratio of tableware to teaware in terms of plates to saucers, the comparative difficulty of identifying the latter from sherds in this period, due to the ease with which the thinly potted vessels fracture, means that a ratio of plates to cups is also derived. This is done both to improve accuracy, and to increase the range of the test. Glass tableware is chosen over the analysis of bottles, primarily because those bottles identified in the collection generally cannot be attributed to particular uses without some residue analysis. In addition, bottles were frequently reused in the early nineteenth century (Busch 1987), with liquids shipped overseas and decanted from barrels, and so, without knowledge of what they contained a relative value cannot be ascribed to individual examples.

Weighted Expense Ranking

The weighted expense ranked values approach has been only rarely utilized (cf., O'Brien and Majewski 1989; Vaccarelli 1996), but functions under the same assumptions as Miller's index values, discussed below, in that specific decorative techniques had definite values correlated with them. Decorative techniques can be ranked in a hierarchy whereby more costly types are given a higher value, such that the most expensive, transfer printed vessels, are given a value of 4, handpainted vessels a value of 3, minimally decorated vessels a value of 2, and undecorated vessels a value of 1 (O'Brien and Majewski 1989:86). The percentage of each type present in a collection is similarly ranked, such that the most commonly represented is given a higher value. These rank values are multiplied by their corresponding type rank, and the results are summed, producing a numerical estimate of the socioeconomic status of a group, which falls within a specific range depending on the number of types identified.

For example, should transfer printed vessels (value 4) be the least common (rank 1), handpainted (value 3) the most common (rank 4), minimally decorated (value 2) the second least common (rank 2), and undecorated (value 1) the second most common (rank 3), then the following calculation: $(4 \times 1) + (3 \times 4) + (2 \times 2) + (1 \times 3)$, would produce a value of 23. With a range of between 20 and 30, this hypothetical collection scores on the lower end of the scale (O'Brien and Majewski 1989:86; Vaccarelli 1996:68-69).

Miller (1991:11) has placed porcelain and other rare ware types, like basalt, because it was comparatively rare, on a level above the other four types, and so it would be reasonable to suggest its inclusion as a fifth rank (Vaccarelli 1996:68). Again, both possibilities are utilized, as a test of whether the addition of porcelain has any significant effect on the outcome.

Although minimum vessel counts are always preferable to sherd counts in the analysis of ceramic collections, I also calculate weighted rank values using sherd counts for the various decorative types. While Miller (1991:4-5) has insisted against the use of sherd counts in using his price indices (below), Spencer-Wood and Heberling (1987:68) and McBride and McBride (1987:156) have demonstrated that sherd counts produce valid results, but only if they are compared only to other sherd count results. As sherd count values for the weighted rank analysis have not been done elsewhere, I perform the calculation here to determine if it is feasible to do so using this method.

Price Indices

The development of the most formulaic approach to ceramic interpretation, a scale of price index values, by Miller (1980, 1991), represents something of a watershed

moment in the history of ceramic analysis in historical archaeology. Studies numbering probably into the hundreds have made use of his index lists and technique (Adams and Boling 1989; Brenner and Monks 2002; Brighton 2001; LeeDecker et al. 1987; McBride and McBride 1987; Miller and Hurry 1983; O'Brien and Majewski 1989; Peña and Denmon 2000; Spencer-Wood and Heberling 1984, 1987; Wall 1991). Though it was initially intended and viewed as an objective measure of status and social stratification (Spencer-Wood and Heberling 1987:66; Wurst and Fitts 1999:2), it has come to be utilized more as a comparative tool in the elaboration of social relations and relative investment (Adams and Boling 1989:80; Brighton 2001:19; Wurst 2006:192). This method works, as do many others, on the premise that higher cost ceramics in the nineteenth century can be correlated to higher socioeconomic status (Miller 1980:3; Monks 1999:206), although some suggest this model is too simplistic (LeeDecker 1991:31). Where other techniques can examine ware type (though by no means is it a requirement), Miller's index values were derived to make use of differences in decorative technology. Because contemporary documents list ceramics by decoration, it is deemed more accurate to create and rely on categories of decorative techniques instead of fictive ware types based on modern assumptions (Miller 1980:2). Miller (1980:3, 7) found that undecorated cream coloured ware (CC ware) was listed in the vast majority of price lists, and that its cost remained relatively constant over the years between 1787 and 1880. He used it, then, as a baseline against which to derive values for other decorative styles based on how many of each type could be purchased for the cost of a set of the undecorated cream coloured ware. In his 1991 update and expansion, Miller incorporated additional

vessel forms, sizes, and index years – including the years 1823 and 1825 – by consulting additional sources, which clarified "the price structure for English ceramics and the relationship between the *list* prices in the price-fixing lists and the *net* prices being charged" (Miller 1991:1, emphasis in original). Archaeological assemblages are given an index value using a simple mathematical equation from minimum vessel counts (Miller 1980:11, 1991:4-5). The advantage of Miller's price index values is that they establish a degree of standardization and an interval scale for comparative analysis, regardless of whether or not they are fully objective. His index is not without its limitations and problems in use, however.

Some attempts to make use of Miller's index in inter-site comparative analyses have noted that there occasionally appears to be a greater correlation with time than with status (Klein 1991:77; Spencer-Wood and Heberling 1987:81). This deficiency was largely addressed by Miller's (1991:3-4) update, which accounts for "declining prices and changing tariff rates" through the establishment of a set of four relatively homogeneous time periods. He suggests that assemblages are comparable within these time periods, but makes no mention of regional limitations. As a result, price-scaling index studies have also been criticized for holding access as a constant, especially in the context of rural areas where market access and transportation is thought to have been inconsistent at best (McBride and McBride 1987:145; Miller and Hurry 1983:80; O'Brien and Majewski 1989:73). This would seem to indicate that only regions with similar market access can be compared. However, some scholars suggest that market access "had less to do with spatial circumstances than with economic and political situations" because nineteenth

century trade and transportation systems were sufficiently advanced for all parts of the continent to be supplied with the most recent innovations imported from Britain (Baugher and Venables 1987:33). Perhaps the most poignant critique of price index studies, however, is that they obscure the processes that create differences, resulting in the possibility that diverse collections with observable variation are given the same average value (Monks 1999:208). This is really more of a shortcoming in the interpretative potential of the analysis, and the standard means of publication, as the attack is only valid if the researcher attempts to attribute socioeconomic standing based solely on the results. If they are taken simply as indicative of the relative expenditure by varying groups on ceramics (Brighton 2001:19), the critique loses strength.

In elaborating his technique, Miller (1980:11, 1991:4-5) is quite explicit in stating the requirement for the use of minimum vessel counts, as opposed to sherd counts. In testing this condition, Spencer-Wood and Heberling (1987:75) have reinforced its importance by demonstrating how sherds from the undecorated parts of otherwise decorated ceramics (especially common with edge decorated plates and bowls) tend to skew and homogenize the derived value, denying the importance of vessel form in foodway analysis (Yentsch 1990:25). Nevertheless, it is still possible provided that the results are not compared to those for which vessel counts are used (McBride and McBride 1987:156; Spencer-Wood and Heberling 1987:75). The sherd count approach is usually necessitated by highly fragmented collections, where minimum vessel counts are deemed unattainable. An additional limitation of the utility of Miller's price index for ceramics is thus related to the degree of assemblage fragmentation. Highly fragmented

ceramic assemblages usually cannot be quantified in terms of vessel form (O'Donovan and Wurst 2001-2002:77). Others have found it useful when confronted with this issue to average potential index values across decorative styles when size or form are impossible to determine, but a minimum vessel count is still available (Spencer-Wood and Heberling 1987:68). A final problem that can be identified is that of overly small sample sizes, which also tend to skew results (Spencer-Wood and Heberling 1987:70). However, none of these limitations seem to outweigh the potential for comparing vessels, which are, after all, functionally identical (LeeDecker 1991:32).

Minimum vessel counts are used here, as opposed to a sherd count, with the explicit recognition that the technique chosen to identify minimum vessels, like any other such technique, is not bias-free. That is, an undecorated base sherd may, in life, have originated from the same vessel as an edge decorated rim sherd, yet in the analysis they are counted as two unique specimens. This is an unfortunate side effect of the degree of fragmentation of the assemblage, but the degree of skew should be less than if a sherd count were chosen. For a similar reason, the form groupings listed by Miller (1980, 1991) are merged and their values averaged, because a highly refined identification of the forms represented by many of the sherds is simply not possible without extensive and time-consuming cross-mending. For example, Miller (1991) differentiates between plates, twifflers, and muffins (all forms of plate) based on rim diameter and vessel form. However, in the Operation 1FY3 collection, several sherds identifiable as flatware are not substantial enough to measure rim diameter, and were thus generically categorized as plates. The five index values given by Miller (1991:11-15) for these forms were then averaged, providing an approximate index value for the entire form category rather than

the specific forms. Spencer-Wood and Heberling (1987:67) were successful using this technique, when confronted with the same problem, though presumably the results again should not be compared with sites following a different methodology, as the values will be slightly homogenized.

As the vast majority of the collection falls within the period 1815 to 1829 (Brown 1988:61, Appendix), the values associated with the dates 1823 and 1825, listed by Miller (1991) are chosen wherever available for the calculation of the index values; when both are available, the values are averaged. As a result of time-lag issues affecting the date of deposit, this likely postdates the period in which most of the ceramics would have been produced and purchased; and yet as the vast majority of the collection dates to the 1820s (Brown 1988:61), it encompasses two of the years for which the most data is available. While these two dates do not represent an approximation of the mid-point of the Operation 1FY3 deposit, they are thought to be representative of the fill event and the totality of the assemblage. Because the dates chosen are a median date for the assemblage, the values represent more of a replacement cost than a purchase cost. This approach was chosen because it cannot be determined when the majority of the ceramics were purchased, and whether their purchase predates the occupation.

Document-Based Plan Analysis

Though by no means a novel approach, landscape studies have been gaining popularity in historical archaeology over the past decade. Proponents of landscape analyses suggest that the culturally constructed landscape, defined as the engagement of the built environment with the natural world, was (indeed still is) manipulated to communicate, reinforce, and even alter social relationships and differences (Davies

2005:59; Delle 1999:136; Glassie 1975:116; Meyers 2005:125; Monks 1992:37; Nickolai 2003:69; Rotman and Nassaney 1997:42-43). Historical archaeologists are able to reconstruct some of these actions and motives, conscious or otherwise, through studies of the design and elaboration of vernacular architecture (e.g., Delle 1999; Meyers 2005; Rotman and Nassaney 1997) and the surrounding humanly-modified landscape (e.g., Deetz 1990; Leone 1987; Triggs and Booth 1994).

On the whole, the landscape approach generally requires a relational definition of status, wherein material culture is used as a means by which to communicate between social groups. Vaccarelli (1997:104-105) has already done some work analysing settlement organization at Fort York and changes to the landscape, demonstrating that the Officers' Barracks and Mess was situated on higher ground than the soldiers' barracks at the time of their construction, giving the former a symbolic superiority in terms of visual dominance, along with the advantages of the relatively dryer terrain. The following project, then, examines two additional elements of landscape studies: a comparison of the per capita living space assigned respectively to officers and to rank and file soldiers; and a comparison of the size of windows in the front façade of the respective domiciles.

The relative size of the living quarters of different socioeconomic groups has been shown to correlate with rank in military settings (Parrington et al. 1984:129; Triggs 2005:124-126), domestic rural sites (Stine 1990:44-45), and on plantations (Otto 1984:161-163). In a similar vein, it has been suggested that building materials and structural configurations can be related to the elaboration of social differences (Davies 2005:65; Otto 1984:161-163; Rotman and Nassaney 1997:51). Window glass in this

period serves as an indicator of status because it was costly – imported from Britain, as the earliest glass manufactories in Canada date to the 1830s and 1840s, and highly fragile (King 1987:34, 202-203, 208-209; Kowal 1960:86; Pacey 1981:33-34; Vincent 1993:165) – and because it demonstrated superiority by allowing more light into the interior.

In order to determine how much space was made available at Fort York for the officers and soldiers, and how much glass was required for the windows, digitised copies of the plans of their respective residences, drawn by Lieutenant-Colonel Elias Walker Durnford of the Royal Engineers in 1823, have been consulted. As the plans for each lack a scale, the images were manipulated using GIMP 2.2, and the measurements made in screen pixels. The intended and real capacity of the barracks is indicated both on the plans and in historic documents referencing actual occupation statistics at different points in time. Maximum intended capacity is more useful for this study, as it provides an indication of what was considered desirable by the designers and engineers. Comparisons between the structures were then made using the known dimensions of the still extant buildings. Similarly, to explore differences in the use of flat window glass, Durnford's same structural drawings were used to derive the proportion of the façade of each barracks that was composed of glass.

Summary

The archaeology of historic populations is capable of consulting both archaeological and historical data sets in order to design and answer valuable research

questions. One commonly explored theme in historical archaeology, for at least the past thirty years, has been the study of socioeconomic status. Drawing on both types of information, archaeologists have developed several means of inferring social and/or economic status from material indicators and purchasing patterns. Debate over which method(s) are the most appropriate, compounded by issues such as additional factors influencing consumer behaviour and an inappropriate use of the concept of socioeconomic status, has recently called into question the validity of its use in historical archaeology. This is due in large part to its misapplication as a means by which to infer social status, instead of as a means of measuring and identifying stratification.

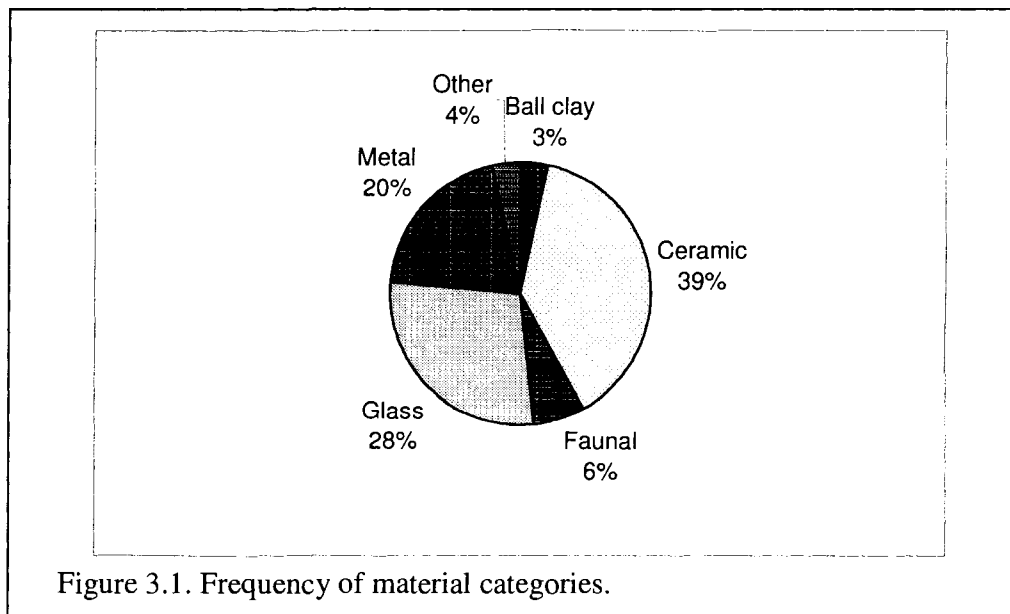
In order to explore the methodological component of this dispute, four distinct approaches have been chosen, outlined in detail above. Making use of an archaeological collection from Fort York, Toronto, largely dating to the period A.D. 1815 to 1829, and directly associated with the Officers' Barracks and Mess, these methods are tested against each other. Due to the requirements of the three analytical techniques used on ceramics and glass tableware, it was necessary to catalogue the assemblage such that an approximate minimum vessel count could be acquired (Chapter 3 and Appendix I). Calculations of ratios, weighted expense rank values, and ceramic cost index values, are thus made possible (Chapter 4). For the fourth method, historically drawn architectural plans are consulted, comparing the amount of floorspace given to officers and soldiers, and the percentage of each barrack's façade comprised of window glass (Chapter 4). By relating these results to each other, to historically drawn inferences of behaviour and status, and to the results of similar sites in the West Indies and Ontario, it is possible to compare the utility of each method in the derivation of status (Chapter 4). Ultimately, this

research serves to address questions of the validity of the archaeological inference of socioeconomic status in early nineteenth century British military populations, and could allow the garrison community to act as a microcosm for Anglo-Canadian society as a whole.

Chapter 3 – Artifact Summary

One of the primary aims of this thesis is to describe, in detail, the ceramic and glass tableware components of the Operation 1FY3 artifact assemblage from the Officers Barracks at Fort York. The following, then, outlines the composition of the collection, in terms of a minimum vessel count, used for the socioeconomic status analysis presented in Chapter 4, and describes both the forms and the techniques used to decorate those artifacts.

A total of 19,492 artifacts were analyzed and catalogued through the course of this project, representing a subsample of the Operation 1FY3 assemblage from the Officers' Barracks and Mess. Missing from this analysis is an unknown number of metal and faunal artifacts, small finds (buttons, coins, military accoutrements), and a few ceramic and glass tableware items, which are on permanent display at Fort York. The percentage of each class of material catalogued is depicted in Figure 3.1, with the understanding that the inclusion of the remainder of the collection from Operation



1FY3 would alter these frequencies. Only the ceramic and glass tablewares used in this analysis are discussed in more detail below, while the other material types are addressed in Appendix II.

Ceramics

Ceramic sherds are the most abundant type of material identified in this artifact assemblage by a substantial margin. This is partially attributable to the number of remains not included, as explained above, but the highly fragmented nature of the collection must also be considered a contributing factor.

Description

A total of 7,505 ceramic sherds representing a minimum of 226 reasonably identifiable vessels were counted. Table 3.1 presents these results in a traditional manner, with sherd and vessel counts displayed according to categories defined by how the paste of the ceramic can be described. These categories are comparable to the ware types frequently used by ceramicists to describe historic pottery, but are not identical. Following the rejection of a ware-based typology by several prominent historical archaeologists (Majewski and O'Brien 1987; Miller 1980), the categories described in Table 3.1 are meant as descriptors, in which are encoded data concerning the colour and degree of vitrification evident on the sherd, with differentiation by glaze colour only when necessary, as to separate cream-coloured earthenware from white earthenware. So, for example, "black basalt" represents a black-bodied semi-vitrified ceramic, while refined white earthenware represents a light or white-bodied non-vitrified ceramic lacking any significant traces of inclusions, and refined cream-coloured earthenware

represents a light bodied ceramic with a yellowish tinged glaze. The other descriptions are explained in greater detail in Appendix IV. The two exceptions to this definition are the ware categories “Unidentified” and “Other.” The former simply refers to those sherds for which either the degree of vitrification or the colour of the paste could not be ascertained, usually due to the state of decay, rendering it impossible to assign the sherd to one of the other categories. The “Other” designation, meanwhile, indicates that a sherd belongs to a descriptive category that has few examples in the collection and is of negligible interpretive value in the context of this analysis, such as buff-coloured coarse earthenware.

With the exception of the categories “Toiletware” and “Containers,” only fully identifiable forms related to use in a meal or tea setting are included. Sherds that were identified as “Tableware,” “Teaware,” or “Hollowware” are not assigned a minimum vessel count, simply because the vast majority of these lack the features used to associate them either with a specific form or with an individual vessel. That is, a rim sherd may be identified as hollowware if it is decorated on both the interior and exterior surfaces, and has steeply angled edges, yet there may not be enough of the rim present to acquire a rim diameter estimate and thus further refine identification; variations in thickness aside, there is a reasonably equal likelihood that it could have come from a cup, a mug, a bowl, or even a jug. There may similarly be nothing, save unique decorative patterns, to differentiate it from a similar sherd. It would undoubtedly be possible to include more of these sherds through the use of an alternative means of quantification (i.e., one based on visual differentiation rather than through the use of a database that catalogues unique characteristics), or with greater familiarity with nineteenth century ceramic forms. The

value of such a process, however, would be minimal, if only because the categories are generally not used in the derivation of socioeconomic status.

At the same time, this approach creates categories for which sherds are quantified, while no minimum vessels are identified (e.g., refined red earthenware, see Table 3.1). Most of these unglazed fine red earthenware sherds probably represent planters, a form not investigated herein for potential indications of socioeconomic status, as they are not used in the methods chosen for investigation. They also tended to be too highly fragmented to allow differentiation between the sherds, rendering a minimum vessel count impossible. Though it is obvious that at least one vessel was present, none could be positively identified as a planter, and as a result there cannot be a minimum vessel count.

The rejection of classification typologies that are based on the imposition of fictive ware types necessitates a choice of an alternative means of grouping similar vessels together. Following Miller (1980, 1991), an emphasis has been placed on the means by which ceramics were decorated, mainly because this is how they were marketed in the nineteenth century (Majewski and O'Brien 1987:105). Table 3.2 presents a minimum vessel count for those forms used in the evaluation of socioeconomic status by decorative types, including plates, saucers, two size groupings of cups, bowls, and platter/dishes, representing 192 of the minimum 226 vessels identified. The vast majority of these occur in refined cream-coloured or white earthenware, with smaller numbers present of porcelain, stone china, refined yellow earthenware, and coarse red earthenware (Table 3.1).

Ware Category	Sherds	Vessels	Bowls	Chamberpots	Containers	Cup/ mug	Figurine	Jug/ ewer	Plate	Platter/ dish	Saucer	teabowl	Teapot	Toiletware
Black basalt	17	1	-	-	-	-	-	-	-	-	-	-	1	-
Blue stoneware	7	0	-	-	-	-	-	-	-	-	-	-	-	-
Coarse red earthenware	199	6	1	-	5	-	-	-	-	-	-	-	-	-
Grey stoneware	95	7	-	-	6	-	1	-	-	-	-	-	-	-
Parian	1	1	-	-	-	-	1	-	-	-	-	-	-	-
Porcelain	92	8	1	-	-	5	-	-	-	1	-	-	-	-
Refined CC earthenware	1440	51	8	2	-	14	-	1	19	3	2	1	1	-
Refined red earthenware	26	0	-	-	-	-	-	-	-	-	-	-	-	-
Refined white earthenware	5451	147	15	3	2	39	-	5	36	12	20	12	2	1
Stone china	16	1	1	-	-	-	-	-	-	-	-	-	-	-
White granite	6	0	-	-	-	-	-	-	-	-	-	-	-	-
White stoneware	69	2	-	-	-	-	-	1	-	-	1	-	-	-
Yellowware	56	2	-	-	1	1	-	-	-	-	-	-	-	-
Unidentified	4	0	-	-	-	-	-	-	-	-	-	-	-	-
Other	26	0	-	-	-	-	-	-	-	-	-	-	-	-
Totals	7505	226	26	5	14	59	1	8	55	16	23	14	4	1

Table 3.1. Sherd and vessel counts by descriptive categories.

Vessel Form Categories

Below is an explanation of the terminology used in defining the various forms, followed by a detailed discussion of each decorative category, describing both the decorative technique and the forms identified.

Decorative Category	Plates	Saucers	Cups/mugs	Teacups/teabowls	Bowls	Platter/dish
Edge lined	-	3	4	-	-	-
Enamelled	-	1	2	1	-	1
Gilt and moulded	-	-	2	-	-	1
Handpainted	-	10	9	3	5	1
Imari	-	-	-	-	1	-
Moulded (unpainted)	-	-	5	1	-	-
Shell edge - unpainted	1	-	-	-	-	-
Shell edge – blue	6	-	-	-	2	1
Shell edge – green	4	-	-	-	1	1
Slip decorated	-	-	-	1	3	-
Transfer printed (blue)	10	7	23	7	4	5
Transfer printed (other)	3	-	-	-	-	-
Undecorated	21	2	12	1	10	3
Underglaze lined	1	-	-	-	-	-
Willow (or type)	9	-	2	-	-	3
Total	55	23	59	14	26	16

Table 3.2. Minimum vessel count by decorative category.

Plates. A wide variety of names have been assigned and used, both historically and by modern collectors, to refer to different sizes of what can generally be considered to be plates. For the most part, these naming conventions have associated various sizes with their function in a meal setting, as with dinner plates, luncheon plates, and pie plates (Gaignault 2006:10), though more arcane historic terms have also been used, such as muffins and twifflers (c.f. Miller 1980). While this approach may work well for collectors, or even archaeologists with well preserved ceramic assemblages, it would be impractical and needlessly complex with a highly fragmented collection that has not been cross mended. Thus, plates of varying sizes, with rim diameters ranging from 10 cm. to

26 cm., are grouped together into this category to permit the inclusion of distinctive sherds from which a rim diameter could not be obtained. This also allows the quantification of vessels which had moulded rim edges, such as shell edge decorated (below), where sherds are required to be significantly larger than a plain rimmed piece in order to acquire a rim diameter. All flat vessels with both a bilge and a marly (Appendix I) are described and analyzed as plates, and are given with size ranges rather than individually.

Saucers. Saucers are one crucial component of a tea service, and were often used as a vessel from which tea was consumed, rather than as a holding place for a teacup, in the early part of the nineteenth century, following the Chinese custom (Coysh and Henrywood 1982:359). Before the flatter, plate-like saucers with a central depression were developed, saucers in this period were larger (10 cm. to 15 cm. rim diameter) and deeper (up to 2.5 cm. deep) than what might be found today, and generally lacked a marly (Appendix 1; Coysh and Henrywood 1982:322, 359). Variation in sizes of saucer, in the context of the Operation 1FY3 collection, does not appear to have any significance.

Cups, Mugs, and Teacups. Early nineteenth century ceramic drinking vessels can be grouped into three broad categories based on their characteristics, London size cups, Irish or Breakfast size cups, and mugs. London and Irish cups, corresponding with the cup/mug and teacup/teabowl categories displayed in Table 3.2, respectively, are differentiated mainly by size, measured here by rim diameter. The use of the label 'London Shape' to describe a carinated, inverted cone shaped cup popular at the same time (Kenyon 1987a; Miller 1991:15) confuses identification further, especially in the case of highly fragmented collections. Separating sherds between the two size

classifications, then, based on rim diameter measurements, affects only the choice of values used in the calculation of cost indices, and as such the vagaries of the terms are generally avoided. Primarily because Miller's (1991) index values do not include a separate category for mugs, which have straight vertical walls and handles, they are lumped together in the cup/mug category (London size cups for price index purposes) based on similar rim diameters (≤ 10 cm.). All the larger sized teacup/teabowl category sherds (> 10 cm.) are assigned values associated with the Irish size cups reported by Miller (1991).

Bowls. As with plates, bowls can be categorized based on their size, which can be measured by rim diameter. Unlike plates, however, bowls were marketed by size categories defined by how many thrown vessels could fit on a 6-ft. drying board, the potters' dozen, which can be directly associated with the vessel's capacity (Miller 1991:21). Due to the paucity of data on the cost of various sizes of bowls, the values are lumped together and an average value assigned. Hence, as with the plates, bowls are not refined by size for the purposes of this project.

Platter/dishes. Similar to plates, platters and dishes have been given a wide variety of names based on differences in size and form. Most of these assignments are based on how the vessels are assumed to have functioned, such as meat platters, soup tureens, sauceboats, and vegetable dishes (c.f., Coysh and Henrywood 1982). Again, the degree of fragmentation in the collection prevents highly refined identification of forms, necessitating the grouping together of these sherds into a single category for the purposes of the project. It should be noted that tentative identification was inserted into the database, pending confirmation through crossmending.

Decorative Categories

The following thirteen categories of decorative technique are intended primarily as a description of the tableware component of the Operation 1FY3 assemblage in a manner that permits the use of cost index analyses. They can generally be associated with groups defined by Miller (1980, 1991), though additional refinements are included to separate some of the more common classes in site-specific patterns (e.g., Transfer Printed in Other Colours). It is not intended as an exhaustive survey of either all the known decorative techniques used in the early nineteenth century or of all the decorative techniques represented in the collection. It is, rather, representative of those categories with which an identifiable tableware vessel could be associated for which a quantity is useful in the derivation of socioeconomic status.

Undecorated. Vessels lacking any identifiable decoration are considered undecorated, with the caveat that a sherd may not represent enough of the vessel to possess some of the original decoration. For example, a rim sherd from a plate decorated only in the centre of the well could easily be counted as an undecorated plate. Correspondingly, a central well or base sherd from an edge decorated vessel, as is common in the popular shell-edge motif, will have no evidence of that decorative pattern. For this reason, only undecorated cream coloured earthenware is included here in the quantification of minimum vessels for the derivation of socioeconomic status, because very few painted examples on this fabric type were identified in the collection, suggesting they were very rare. Cream coloured earthenwares are distinguished from others primarily by their noticeably yellowish hue in the glaze, at least among those potted prior to 1830 (Kenyon 1987b:22, 1988a:5). Undecorated vessels in refined white earthenware

(often known as pearlware when it has a bluish green tinge to the glaze), coarse red earthenware, and grey stoneware were also identified, including tableware and teaware, blacking bottles, flower pots, and other unidentified containers, which, though catalogued, were not included in this analysis due to their limited utility in the means of deriving socioeconomic status chosen for use in this project.

Undecorated vessels were fairly common in the Operation 1FY3 assemblage (Figure 3.2). A minimum of 17 plates, two saucers, eight cup/mugs, and six bowls were counted in refined cream-coloured earthenware (Table 3.2). An additional four refined white earthenware plates, three refined white earthenware cup/mugs, one refined yellow earthenware cup/mug, one refined white earthenware teacup/teabowl, one coarse red earthenware bowl, two refined white earthenware bowls, and one porcelain bowl, also lacked noticeable decoration. As mentioned, however, these last are not included in the analysis because of the lack of certainty with which it can be stated that the whole vessel was undecorated. Undecorated cream-coloured earthenwares are also the only category for which Miller (1980, 1991) presents values.

While not necessarily popular by the time the Operation 1FY3 deposit was created, undecorated cream coloured earthenware was common throughout the late eighteenth and most of the first half of the nineteenth centuries. Its cost stayed relatively constant, and it generally represented the cheapest available wares (Miller 1980; Kenyon 1988a:5). It therefore has been used as a baseline against which the frequencies of other decorative categories can be measured.

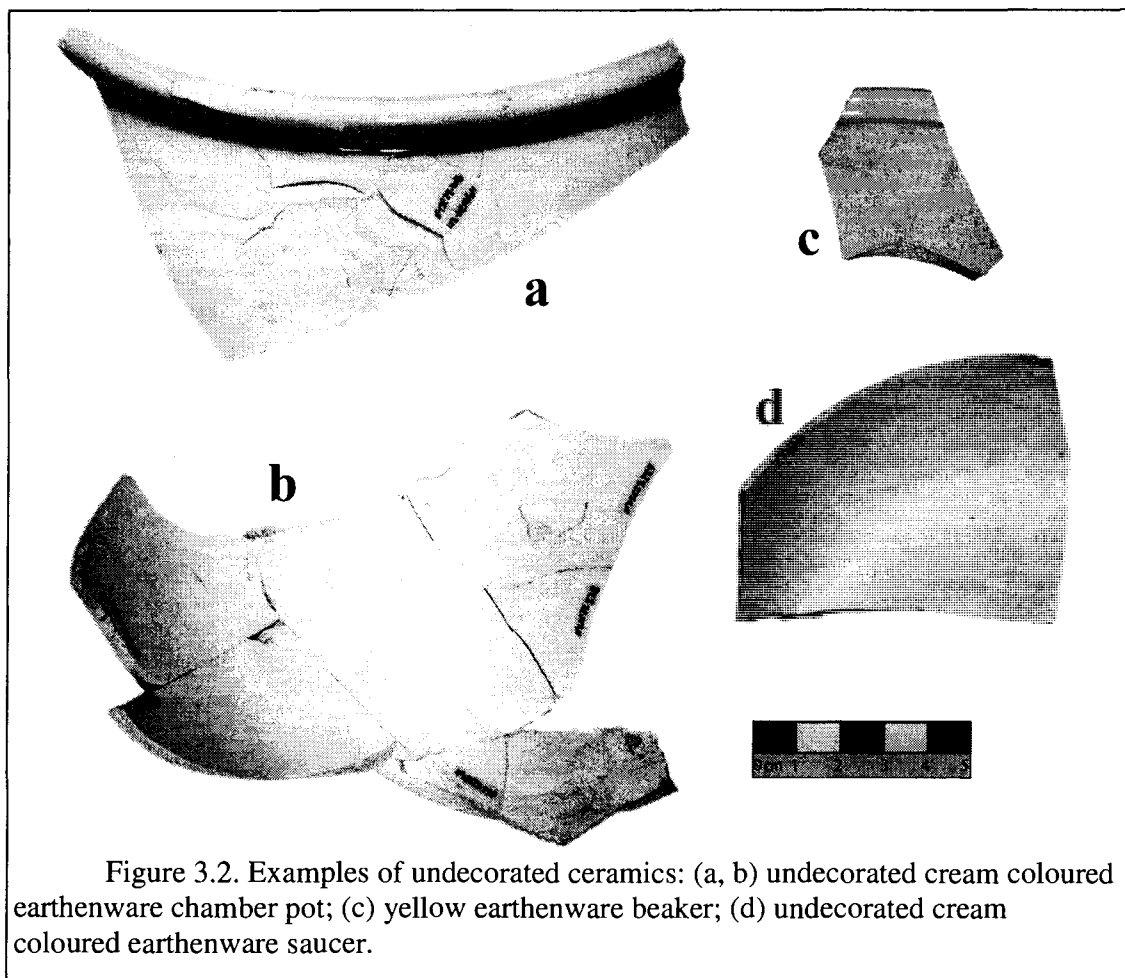


Figure 3.2. Examples of undecorated ceramics: (a, b) undecorated cream coloured earthenware chamber pot; (c) yellow earthenware beaker; (d) undecorated cream coloured earthenware saucer.

Plates vary in size from 15 to 27 cm., the two saucers are about 14 to 15 cm., the cup/mugs all have a rim diameter around 9 cm. and are differentiated by footring form and body thickness, and the bowls range from 14 to 28 cm. at the rim. In addition to these, at least three platter/dishes, two chamber pots, and one jug/ewer of cream coloured earthenware were identified, but again, these forms have not been assigned values and are thus not used in the analysis.

Moulded. Some ceramics, especially porcelain and the “Ironstone China” popular after the 1840s, were decorated with either positive or negative relief that was not embellished in any way with colourful paints (Majewski and O’Brien 1987:153-154).

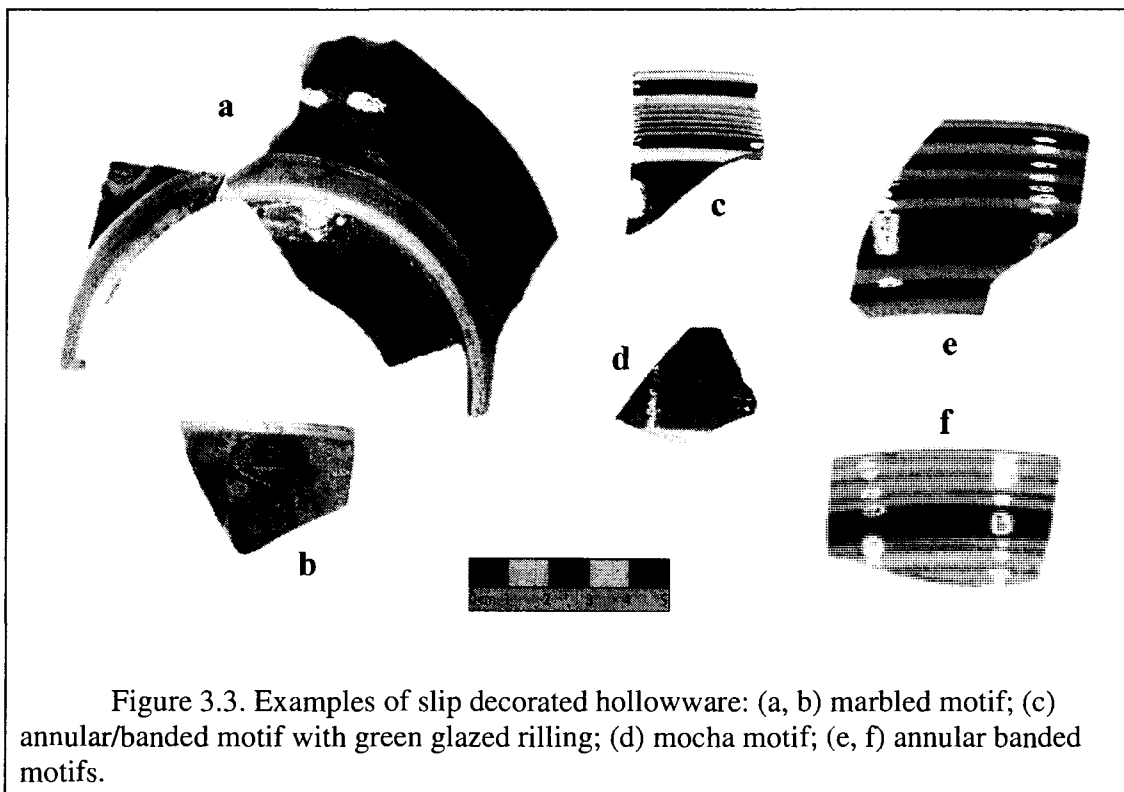
The technique of press moulding was occasionally used before this time on refined earthenwares, usually in the production of shell or feather edge, and the popular Queen's Pattern. As used here, moulded refers to any vessel which has had its surface modified but is not decorated in any other way. Before the development of white granite or ironstone pottery in the 1840s, this decorative style was neither popular, nor particularly expensive, except when on porcelain.

A minimum of four refined cream-coloured earthenware cup/mugs, one porcelain cup/mug, and one refined white earthenware teacup/teabowl were identified (Table 3.2). Of these, only the porcelain cup/mug had a distinctive pattern, with a positive relief floral motif in a band below the rim. The others are simply decorated with horizontal positive relief ridges or negative relief banding parallel to the rim.

Slip Decorated. Often known both historically and in archaeological and antique collectors' literature by a wide variety of names, including dipped, dipt, mocha, marbled, cat's eye, annular, banded, and others, the slip decorated category includes any vessel that has been decorated primarily through the application of wet clay and various chemicals (Miller 1991:6; Sussman 1997:1; van Rensselaer 1966). Most of these terms refer to variations in motif and slight differences in technique, rather than technology. This form of decoration required minimal skill to produce, and was used primarily for utilitarian wares, and were thus generally among the cheapest decorated wares available, often manufactured along assembly lines (Miller 1991:6; Sussman 1997:1, 50-54). It was usually done in earth tones, like various shades of brown, rust, green, and yellow. Production and popularity dropped off significantly following the

1840s, though many were still in use into the twentieth century (Miller 1991:6-7; Sussman 1997:50).

Four examples of slip decorated vessels were identified, including one teacup/teabowl and three bowls (Figure 3.3). The teacup/teabowl and one of the bowls are refined cream coloured earthenware, while the other two bowls are refined white earthenware. The teacup/teabowl is decorated with an annular/banded motif and has some light green glazed rilling – small parallel impressed grooves in a half-inch band (Sussman 1997:42-43) – on the exterior below the rim. Two of the bowls have a similar annular/banded motif, though lacking the rilling, and are differentiated by rim diameter

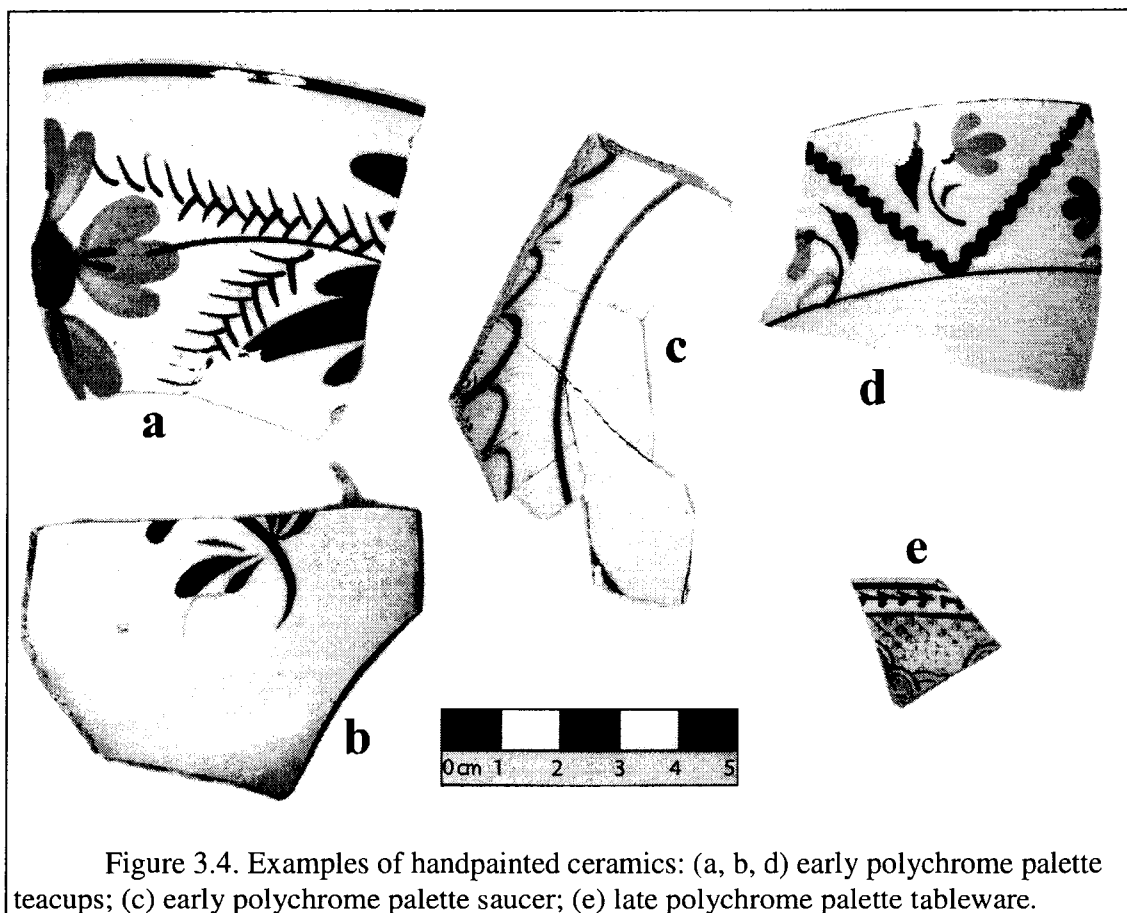


and thickness. The motif of the last bowl is undiagnostic, but the colour is suggestive of a mocha pattern, as is also evident on other sherds in the collection. Yellow, black, blue, brown, and the light green glaze of the rilling are present on these dishes.

Handpainted. Underglaze handpainted decoration, unlike the related process of enamelling, was applied prior to the glazing and firing process, though in this case too, floral and lined patterns were dominant (Majewski and O'Brien 1987:157-160; Miller 1991:7-8). This approach grew in popularity starting in the 1780s in spite of limitations on the available colour palette and a slight blurring of the image caused by the application of a liquid glaze. The subsequent rise in popularity was related to technological advances in the manufacture of cobalt paints and inks in the British ceramic industry, and as such the majority of the earliest vessels were decorated in blue on refined cream-coloured earthenware (Miller 1991:7). Before the turn of the century, browns, yellows, and greens were introduced, forming the early polychrome palette, which continued to be used in the creation of floral motifs, along with a whiter bodied earthenware. In the 1830s, a new range of colours was developed, including red, black, and various lighter shades of blue and green, called the late polychrome palette (Kenyon 1985:50; Majewski and O'Brien 1987:157; Miller 1991:8).

Handpainted ceramics required a moderate skill level to produce in large enough quantities to constitute a set, and thus were highly prized before the introduction of transfer printing. Most handpainted decoration, especially the more complicated patterns described here, were applied to teaware following the introduction of alternative modes of decoration, and were rare on tableware (Kenyon 1988b:7).

Handpainted decorated vessels were one of the most frequently identified in the Operation 1FY3 collection (Figure 3.4). A minimum of ten saucers, nine cup/mugs, three teacup/teabowls, five bowls, and one platter/dish were counted, and all but one of the saucers were made of refined white earthenware (Table 3.2). The remaining saucer was of white stoneware, represented by two virtually identical but non-conjoining sherds, decorated in a manner suggestive of, but not identifiable as, the Imari motif (below). A crude floral depiction is by far the most common motif, often accompanied by a thin line



circumnavigating the interior or exterior, or sometimes both, borders of the rim. In some cases, only a line is present on the identified vessel (Underglaze Lined below), but it is

uncertain whether or not the floral spray is simply missing. Wavy lines and geometric, web-like motifs are also present, though not in a complete enough form to allow for the recognition of any pattern. One additional motif, an annular/banded decorated saucer, was identified. With the exception of the stoneware saucer and a canary yellow cup/mug, every vessel was decorated with early palette colours. About one third of these are decorated only in blue, and the remainder include various combinations of green, yellow, blue, and brown. No vessels were identified decorated in late polychrome palette colours, in accordance with the terminal date of the areaway deposit.

Edge Lined. A subset of handpainted ceramics, edge lined wares were very simply decorated with a painted band covering and possibly extending away from the rim, most commonly in brown, though occasionally in blue (Miller 1991:16). Generally confined to teawares, these vessels were known historically as “edged” or “topped,” and were popular before the War of 1812 (Miller 1991:16). A crudely painted floral pattern is often associated with these, typically in early palette polychrome colours consisting of greens, blues, and browns.

A total of three saucers and four cup/mugs were identified that had been decorated in this manner, all decorated with blue edges, and all of which were potted in refined white earthenware. Floral sprays, usually in green and blue, and sometimes including brown, are evident on several of these, but were likely present on all when they were complete.

Underglaze Lined. A specialized handpainted decorative motif that required very little skill, underglaze lined vessels usually had one or more lines circumnavigating the rim or marly of the dish, and was often used on institutional service wares (Miller 1991:7;

Sussman 1978:98). Frequently present on cream coloured earthenware in brown, green, or blue, these plates “are common on British military sites . . . excavated by Parks Canada from the period of the War of 1812” (Miller 1991:7). They probably predate ca. 1840, primarily because cream coloured earthenware was less frequently used after that time.

Only one underglaze lined vessel, represented by three conjoining sherds, was identified (Table 3.2). At least two dark brown lines extend around the interior border of the marly on this refined cream coloured earthenware 25 cm. plate. Dozens of additional sherds have handpainted lines surrounding either the interior, or exterior, or both borders, but most of these were accompanied by floral sprays and other additional motifs, and thus were counted as separate handpainted patterns (above).

Shell Edge. A distinct pattern typically combining both moulding and a handpainted band covering the interior of the rim, shell edge decoration was popular from the 1770s until at least 1840, and continued to be used commonly until at least the 1870s (Kenyon 1982:7, 1988a:5; Miller 1991:5-6). Most were moulded with a negative relief succession of parallel lines, which could be either straight and plain or intricately curved, perpendicular to the rim, and enveloped in either blue or green paint, in either a plain band or delicately feathered away from the edge. Rim edges are typically wavy or scalloped, in either regular or irregular patterns. On rare occasions, shell edge vessels may lack significant impressions, though it is uncertain whether this was meant as a unique stylistic variation, or was the result of badly worn moulds. In addition, some shell edge impressed vessels lacked painting.

Attempts have been made to subdivide the period in which shell edge pottery was manufactured based on ware type, the sharpness of detail in moulding, and the colour of

paint chosen. None of these, according to Majewski and O'Brien (1987:151-152), are as reliable as the technique used to paint the band around the rim, where more decorative painting styles, feathered away from the rim, are indicative of earlier (pre-ca. 1830s) wares. Nevertheless, colour choice does seem to have some indication of date, as green was virtually absent after the mid-1830s in Ontario (Kenyon 1982:7). Shell edged ceramics, of both colours, took little skill to manufacture once the mould was carved, and hence were among the least expensive, and most abundant, decorated ceramics available in the early nineteenth century (Miller 1980:4).

Aside from transfer printing and handpainting, shell edge decoration was the most common decorative category identified in the Operation 1FY3 assemblage analyzed (Figure 3.5). The majority of these, eleven, were counted as plates, and the other three were bowls (Table 3.2). All of these were potted of refined white earthenware, except for the one example of an unpainted shell edge plate, composed of refined cream-coloured earthenware. There is a slight dominance of blue painted shell edge over green, though the significance of this beyond personal preference has been questioned (Majewski and O'Brien 1987:150-151). Two of the bowls, one each painted in blue and green, possessed the "intricate ruffle" style of moulding, along with three of the plates, two in blue and the other in green. All other shell edge decorated vessels were moulded with the more simplistic series of closely spaced parallel lines. All identifiable vessels had scalloped, rather than plain, rims with diameters ranging from 14 cm. to 24 cm. All had flat, as opposed to concave, marlies, which are thought to be typical of the nineteenth century (Sussman 1977:109). In addition to these, one green shell edge decorated hollowware vessel, tentatively identified as a tureen, and one blue shell edge platter/dish were also

counted.

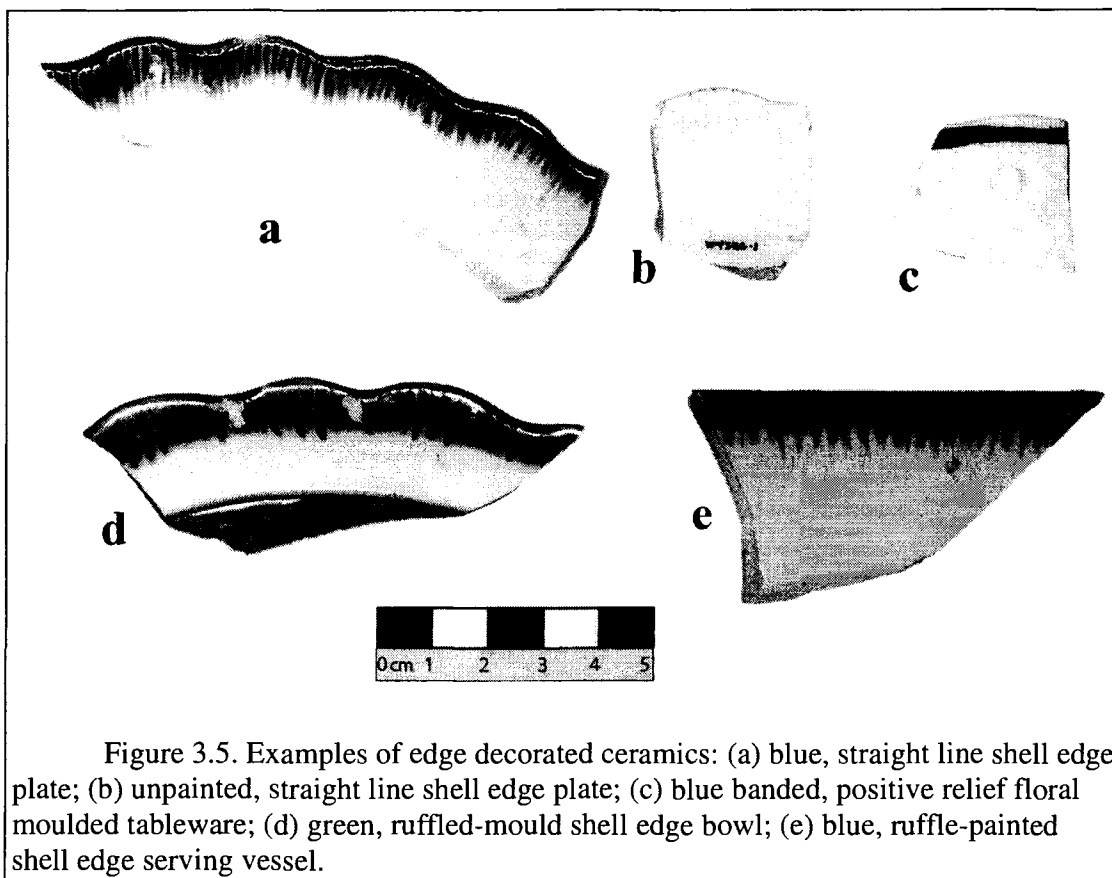


Figure 3.5. Examples of edge decorated ceramics: (a) blue, straight line shell edge plate; (b) unpainted, straight line shell edge plate; (c) blue banded, positive relief floral moulded tableware; (d) green, ruffled-mould shell edge bowl; (e) blue, ruffle-painted shell edge serving vessel.

It should be noted that by requiring rim sherds of significant size in order to identify vessel form, the number of shell edge decorated dishes has likely been vastly underrepresented. Scalloped rims are not as conducive to measurement using a rim diameter measurement chart. While a plain rim sherd of about 3 cm. in length can be measured to the nearest concentric ring quite easily, the uneven shape and curvature of a scalloped or wavy rim necessitates a sherd of at least 6 cm. in length. This can be highly problematic in the analysis of a highly fragmented collection, a consideration discussed in Chapter 4.

Enamelled. The terminology for enamelled wares has been somewhat confused over what exactly the technique represents. Historically, it seems the term was applied to all multicoloured painted ceramics (Kenyon 1985:42, 52, 1987b:25). The definition adopted here, however, is that enamelling describes the process involving painted decoration on top of the glaze only, following an initial glost firing. A second, lower temperature firing was used to secure the painted decoration in place by fusing it to the glaze (Miller 1991:7). Though it was necessary initially to apply all colours other than blue over top of the glaze, it was not required for long, so the categories of enamelled and polychrome handpainted ceramics should be considered separately by technique rather than by colours.

Otherwise similar in both style and practice to underglaze handpainted decorations, enamelled wares were available in a wider array of colours which were less likely to be destroyed due to firing because of the lower temperature requirements. The main disadvantage was that enamelled decoration was subject to wear, and it was thus only truly popular until colours were developed which could withstand the high temperature glaze firing process, suggesting that most of these wares predate ca. 1830 (Miller 1991:7). Some specialized forms of decoration used the enamelling process, namely gilding and the Imari motif, and are discussed in greater detail below. The greater range of colours available on enamelled ceramics often meant that they were considerably more expensive and rare as compared to handpainted underglaze vessels.

Very few enamelled vessels were identified in the portion of the Operation 1FY3 collection that was catalogued (Table 3.2). Only one refined white earthenware saucer, two porcelain cup/mugs, and a porcelain teacup/teabowl were identified. All involved

basic floral and lined or annular motifs, similar to the underglaze handpainted technique, but including brighter colours like purple and orange. This paucity is probably related as much to the difficulty of identifying enamelled wares as to their decline in popularity or cost, simply because the decoration has frequently been worn off through use or post-depositional taphonomic processes.

Imari. The term Imari has been chosen to represent the category of decorated ceramics usually called Imari, Japan Pattern, and decorated stone china. In attempting to imitate Chinese porcelain, English potters in the early nineteenth century developed a thickly potted, semi-vitrified, white stoneware. Glazed with a blue-tinted medium, these vessels were typically “heavily decorated, commonly combining painting or enamelling with printing” (Miller 1991:10). Heavy taxation on the import of Chinese porcelain starting in the 1790s led to the development of this stone china, but it was never as successful as would be the later “Patent Ironstone China” created by Mason’s pottery, as its success was tempered by the development of transfer printing (Miller 1991:11; Samford 1997:8). Its presence can be suggestive of both an early nineteenth century occupation and a comparatively high level of expenditure.

Although ten sherds were identified with what can be called an Imari motif, only one minimum vessel could be counted, a bowl. The two sherds representing this bowl were collected from closely related contexts, and were grouped together based on similarities in rim diameter and thickness. Only one of these two had evidence of gilding, however, suggesting that two bowls may have been represented. An additional rim sherd was tentatively identified as originating from a cup/mug, but its rim diameter could not be

measured either to confirm or to reject the assertion. Blue, orange, red, and gold are the dominant colours present.

Gilt and Moulded. The gilt and moulded category combines two discrete decorative techniques, namely gilding and moulding. This class involves a specialized form of enamelling making use of liquid or powdered gold paint, often applied as an accent to positive relief components on moulded vessels, though bands and lines were common as well (Majewski and O'Brien 1987:152-153; Miller 1991:10). Gilt decoration was typically confined to use on porcelain due to its obvious expense (Miller 1991:10). Developed as a distinct decorative technology by the late eighteenth century, gilding went through its own series of developmental stages, from pluck and dust application, to liquid gold methods (Drakard and Holdway 2002:77-79).

Only two porcelain cup/mugs and one porcelain platter/dish were identified with both gilding and positive relief decoration. On one of the cup/mugs, a gilt band circles the inside rim of the cup, with moulded and gilt highlighted flowers around the exterior body. On the other, a gilt band around the rim is complemented by a moulded basket weave pattern on the exterior body of the vessel. There is no indication of a handle present on either cup. The platter/dish may represent two separate vessels, as one piece is a moulded ribbed body sherd, while the other is a gilt banded lid sherd. It is possible, however, that these two are from the same vegetable dish, hence they were counted as one vessel.

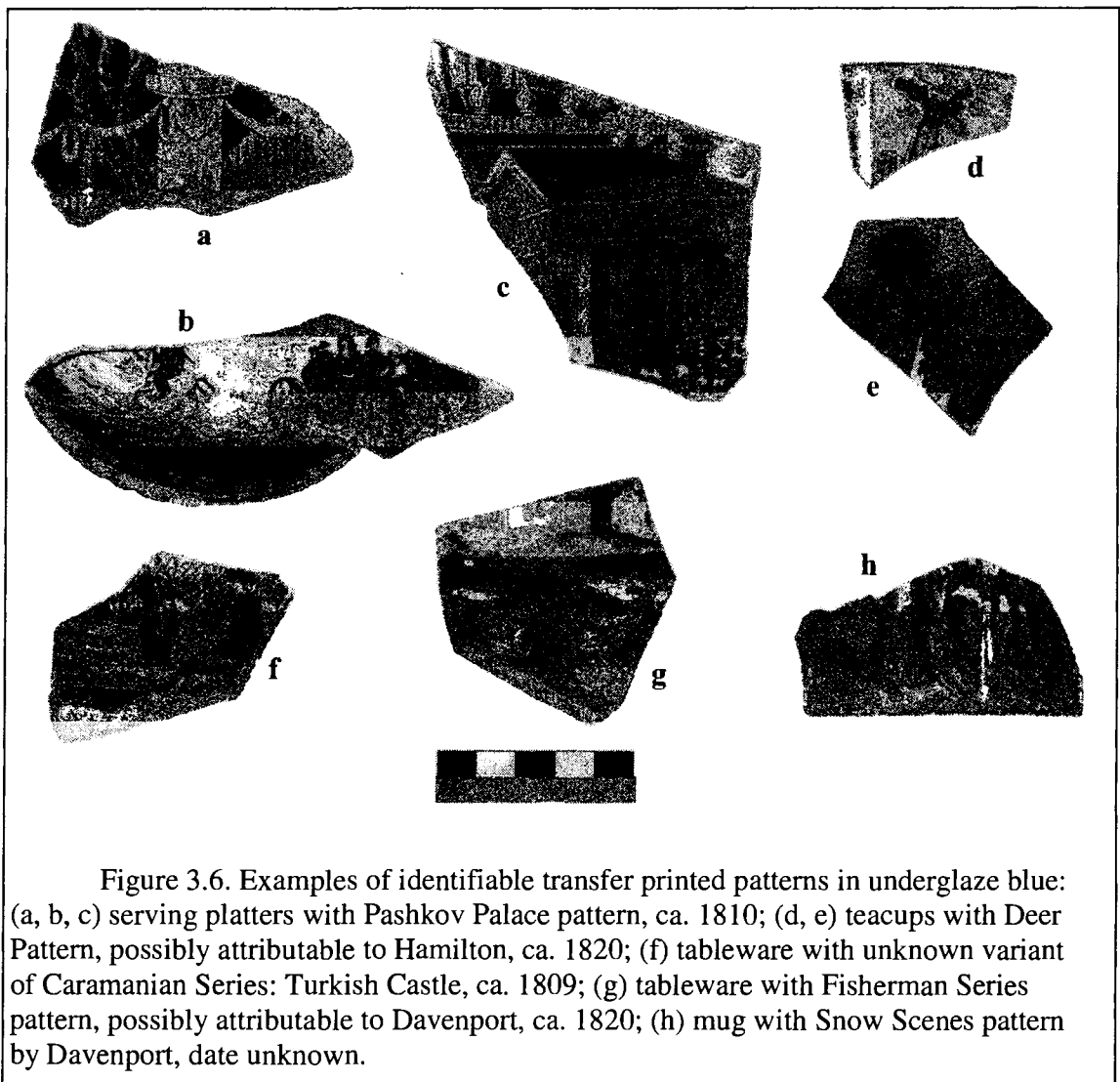
Blue Transfer Printed. The transfer printing process revolutionized the pottery decoration industry (Samford 1997:1). Developed in the mid to late eighteenth century, the technique involves the use of engraved copper plates to which were applied a pigment mixed with oil. Cobalt was used to produce the most common blue colour. The pattern

was subsequently transferred onto a piece of light paper or fabric, which could then be applied directly to the vessel after its initial bisque firing (Drakard and Holdway 2002:35-40). Blue printed wares were almost exclusively decorated before the application of glaze, and it was the strength of the metallic oxide cobalt to withstand glaze firing that led to its dominance in the market (Drakard and Holdway 2002:40). Variations in the intensity of the blue colour used and quality of the image have been put forth as possible sources for relatively dating transfer printed pieces, though it seems that the pattern itself is a much more reliable indicator (Miller 1991:9; Samford 1997:1-2). The depth of the colour, rather, was typically related to how deeply engraved was the copper plate (Samford 1997:3).

Though the transfer printing process had been developed somewhat earlier, there is some indication that it did not become prominent on North American tables until after 1810 (Kenyon 1985:46; Samford 1997:3). Although blue transfer printed pottery quickly became the most popular form of decoration for tableware and teaware after the War of 1812, it managed to maintain a comparatively high price point before ultimately declining after about 1850, following the introduction of white granite or ironstone (Kenyon 1988a:5).

With the exception of Willow and Willow type patterns (below), there seems not to have been more than regional or temporal preference for particular motifs or patterns, suggesting that the various prints do not have socioeconomic significance. While “storekeepers ordered most printed wares generically without regard to specific patterns” (Kenyon 1985:50), it cannot be said whether the military placed their orders with the same lack of preference, or whether consumers felt the same sense of apathy. In fact, it

has been suggested that army agents went out of their way to order common patterns that could be easily replaced to maintain a set (Sussman 1978:101-102). Patterns are, however, an excellent indicator of date of manufacture and purchase, if not necessarily use (Figure 3.6). Most were in production for only a short period, and even when specific dates are not available in historic documents, broader changes in decorative motif can provide an approximate time frame based on contemporary developments in social and decorative attitudes (Samford 1997). While all but the initial engraving process were reasonably simple and required fairly low-skilled workers, the ceramics created by this



process were typically one of the most expensive available before ca. 1850, chiefly as a result of their popularity (Samford 1997:3).

By far the most abundant decorative category in the Operation 1FY3 assemblage, there are at least ten plates, seven saucers, twenty-three cup/mugs, seven teacup/teabowls, four bowls, and five platter/dishes with blue transfer printed patterns (Table 3.2). Two cup/mugs are made of refined cream coloured earthenware, while all the rest of the vessels are refined white earthenware. A moderate blue colour is dominant, with only a few instances of either lighter or darker blues. A wide variety of themes are present in the collection, including scenic motifs, floral and botanical patterns, chinoiserie patterns, Indian and Oriental themes, romantic themes, and some undiagnostic geometric motifs. In an attempt to identify some of these patterns with greater precision, and thus to provide a *terminus post quem* for the collection, a number of antique collector's texts were consulted, including Coysh (1974), Coysh and Henrywood (1982, 1989), Drakard and Holdway (2002), Little (1969), Lockett (1972), Williams and Weber (1986), and the online database of the Transferware Collectors Club (<http://www.transcollectorsclub.org/>). In addition to the popular Willow pattern and its many variants (below), eighteen unique patterns were identified in these sources occurring on at least one sherd, though not necessarily as part of a minimum vessel (Table 3.3). The most common patterns identified in the Operation 1FY3 assemblage, excepting Willow and its derivatives (below), included; an unknown variant of the "Turkish Castle" pattern (one 13 cm. teacup/teabowl, one 9 cm. cup/mug, and one unidentified vessel); the "Pashkov Palace" pattern (at least three separate platter/dishes, one 25 cm. plate, and one large jug/ewer); and the "Chinoiserie High Bridge" pattern (at

Pattern Name	Manufacturer	TPQ	Source
Basket and Vase Floral Pattern	unknown variant	??	Coysh 1974:24-25
Botanical Pattern Series	Wedgwood	ca. 1810	Coysh and Henrywood (C&H) 1982:50-51
Boy Piping	unknown	??	C&H 1982:53
Caramanian Series: Sarcophagi and Sepulchres	unknown variant	ca. 1809	Drakard and Holdway (D&H) 2002:245
Caramanian Series: Triumphal Arch at Tripoli in Barbary	Spode?	ca. 1809	Coysh 1974:74-75; C&H 1982:70, 227, 370
Caramanian Series: Turkish Castle	unknown variant	ca. 1809	C&H 1982:369, 1989:200; D&H 1983:140, 161
Castle and Bridge	Henshall and Co.	ca. 1810	Coysh 1974:102-103
Chinoiserie High Bridge	Davenport	ca. 1810	Coysh 1974:30-31
Deer Pattern	Hamilton?	ca. 1820	Coysh 1974:106-107
Fisherman Series: Fisherman and Fence	Davenport?	ca. 1820	C&H 1982:137-138; Lockett 1972:50-51
Heavenly Charioteer variant?	Spode?	ca. 1814	D&H 1983:78, 84 John and Simcox 1963:Illustration 8
Nautilus	Wedgwood?	??	1963:Illustration 8
Palladian Temple	unknown	ca. 1820	Coysh and Henrywood 1982:273 Coysh 1974:108-109; C&H 1982:276)
Pashkov Palace	unknown	ca. 1810	1982:276)
Snow Scenes	Davenport?	??	C&H 1982:125, 340, 1989:186
Sporting Series	Enoch Wood and Sons	ca. 1820	Coysh 1974:94-5; C&H 1982:126, 344, 1989:188
Tudor Mansion	Davenport	ca. 1810	Coysh 1974:30-31
Unnamed geometric and floral pattern	Enoch Wood and Sons	ca. 1818	Little 1969:106, Plate 79
Unnamed scenic pattern	unknown	??	Williams and Weber 1986:418
Willow	Many known makers	ca. 1810	Coysh 1974:18; C&H 1982:402

Table 3.3. Identified patterns and their makers, also showing approximate earliest date of manufacture and source of identification.

least two plates, size unknown, and two additional pieces of tableware). Of those for which a minimum date is available, none postdate ca. 1820, indicating that the collection's assigned date is valid (see Chapter 4 – On Dates). The frequency with which

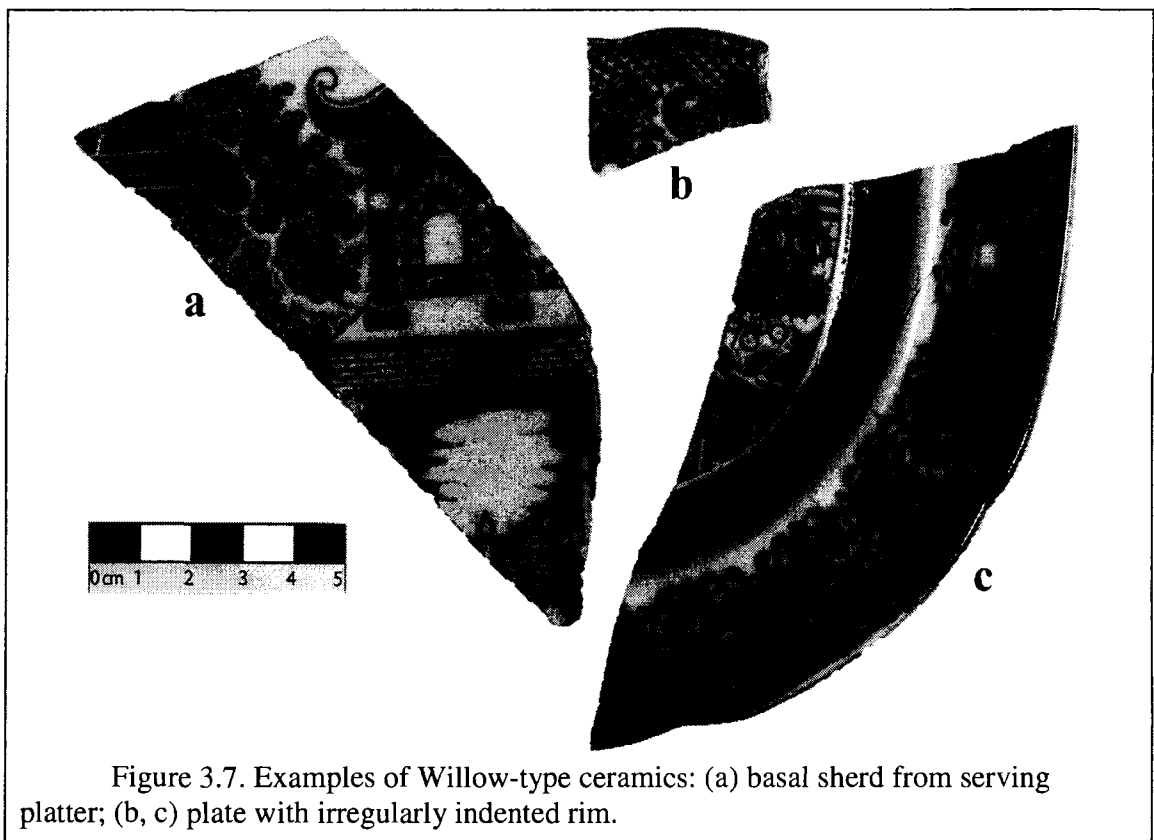
specific patterns occur is suggestive of preferential purchases of sets of wares, as opposed to an indication of preferences in socioeconomic rank or variations in cost. Rather, it is the quality of the print, where mistakes and poorly manufactured ceramics are sold at a reduced rate as 'seconds' (Sussman 1978:101), that may imply socioeconomic standing through differential expense.

Willow-type Patterns. By far the most common and most recognizable transfer printed pattern, Willow, was widely copied and manufactured. Because there are a vast number of derivatives created by numerous producers and artists, it can be difficult to identify standard Willow, which is a specific pattern produced by Spode around 1790 (Coysh 1970:80; Kenyon 1987b:22). The varied copies and alternate patterns should thus be called either chinoiserie, or Willow type, in order to differentiate between the variants and the original. Coysh (1970:80-82) has argued that only patterns meeting a specific set of criteria be labelled Willow, including prominence of a willow tree, a three-arched bridge with three figures on it, a fence, a pagoda, and a geometric and dot and diamond border motif with scrolls and insects. Samford (1997:7-9), on the other hand, has argued for the division of Chinese designs and original European interpretations of oriental motifs, preferring chinoiserie for the latter. One similar variant of a Chinese pattern, given the name Brosley or Broseley, which is typically confined to teawares (Miller 1991:9; Samford 1997:8), has been identified in substantial numbers at Fort York (Brown 1988).

The earliest Willow type pattern probably dates to 1780, and the pattern was standardized by 1790 (Coysh 1970:10; Miller 1991:8). Unlike other patterns, countless potters have produced it continuously into the present. Its consistent popularity

throughout the nineteenth century led it to cost marginally less than most other transfer printed patterns, and it is hence quantified separately and given a unique value wherever possible (Miller 1991:8). It is worth noting that Kenyon (1987b:22) has given the earliest archival occurrence of Willow in Ontario as 1833. He does not investigate military settings, however, where ceramics were procured through means not open to the regular citizens of Upper Canada (Sussman 1978:94-96).

Willow and Willow-type patterns, including Spode's "Brosley" or "Broseley" (Figure 3.7), are the most common transfer printed pattern in the Operation 1FY3 assemblage (cf. Brown 1988). A minimum of nine plates, ranging from 19 to 26 cm., were identified along with two cup/mugs, with rim diameters of 9 and 10 cm., and three

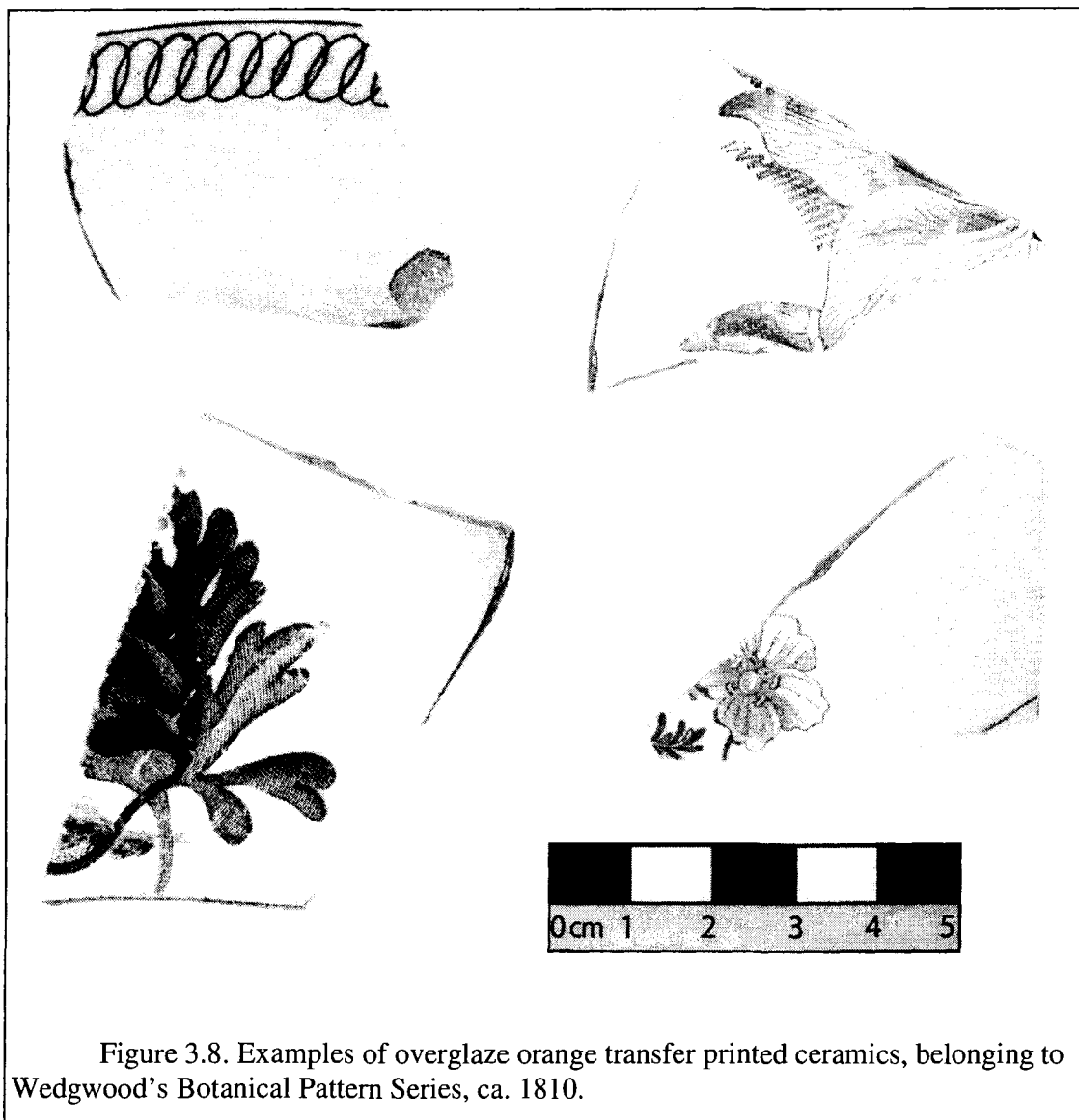


platter/dishes, differentiated by rim thickness, all in a roughly oval platter form. All of these vessels were potted in refined white earthenware, as were all sherds not assigned to a minimum vessel.

Transfer Printed in Other Colours. In order to produce transfer printed ceramics decorated in colours other than blue, which would otherwise be destroyed in the high temperature glost ovens, some potters applied their decoration over top of the glaze, at least until new inks were developed that could withstand the heat, ca. 1829 (Kenyon 1987b:22). This method, known chiefly as bat printing, predates underglaze prints, and was first used probably in the 1750s (Coysh and Henrywood 1982:8; Drakard and Holdway 2002:41-42). Similar to the enamelling process (above), this permitted a wider array of colours to be used in decorating ceramics. Different underglaze colours, such as red, green, black, and brown, were developed as early as 1828, and each went through varying phases of popularity and decline (Majewski and O'Brien 1987:145). No colour was ever able to supersede the popularity of blue, however, and so for the purposes of cost and socioeconomic status, it is considered together with other printed vessels, though it may eventually be possible to separate blue printed wares from others in terms of relative cost.

Although green, black, brown, pink, and purple printed patterns were present on at least one sherd in the collection, none of these were substantial enough to identify a minimum vessel. Only orange overglaze transfer printing is present in significant numbers, and on sherds large enough to be associated with a vessel, occurring on a minimum of three plates. All of these are done on refined white earthenware, though there is some indication of a very small degree of vitrification of some of the sherds – indeed several of

the other sherds on which the same pattern was identified were catalogued as white stoneware. All three of the minimum vessels identified with orange overglaze transfer printed decoration belong to Wedgwood's "Botanical" series (Figure 3.8), dating to ca. 1810 (Coysh and Henrywood 1982:50-51). This series of

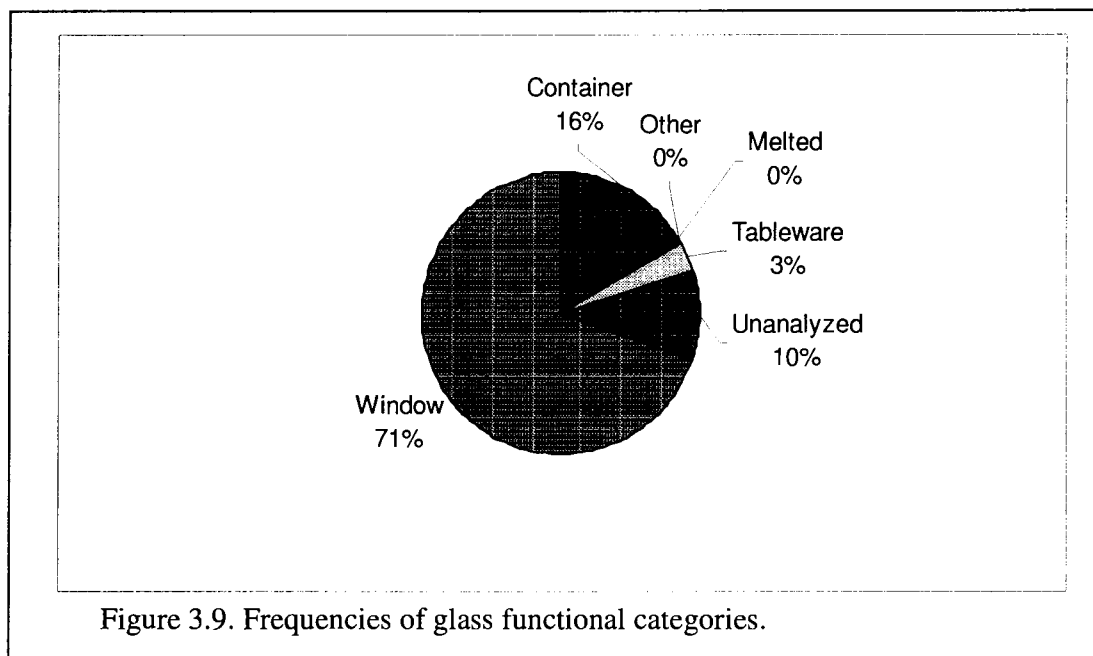


patterns features an accurate floral print in the central well of the vessel, with a sequence of interconnected circles surrounding the rim, and gilding covering the rim's edge. All

three plates have rim diameters of about 25 cm., and are differentiated from each other by rim thickness. The true number of vessels represented in the collection is undoubtedly much higher, however, as it is one of the most ubiquitous patterns found at Fort York, and because the well sherds identified with the pattern cannot confidently be assigned to a specific vessel form without a corresponding rim.

Glass

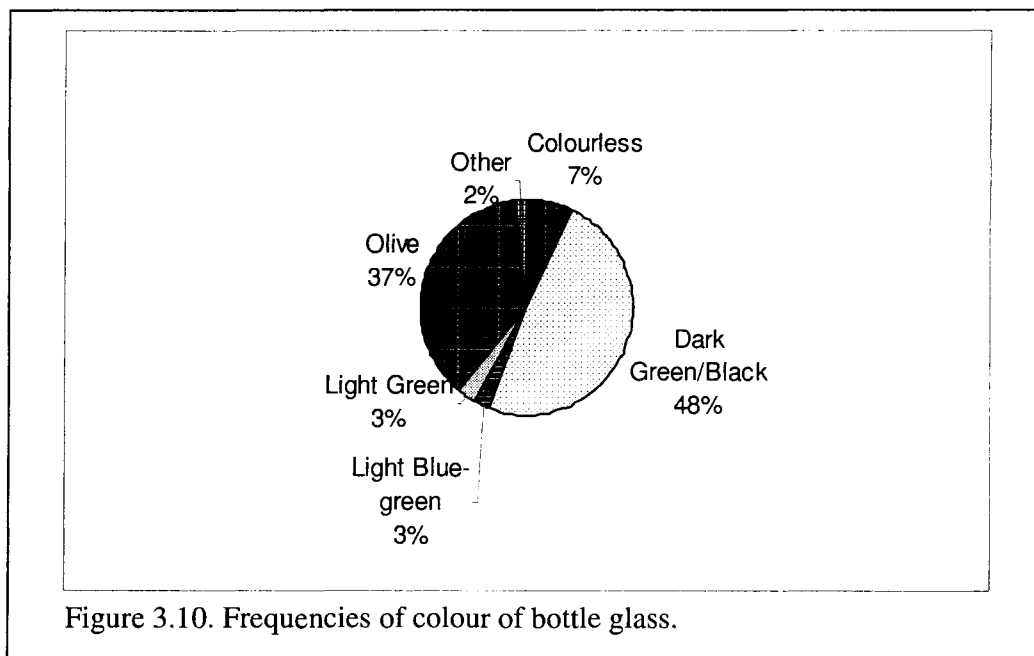
Glass artifacts are the second most common class analyzed from the Operation 1FY3 collection. This, again, is related to two separate factors, including the incomplete inclusion of metal and faunal remains. The abundance of flat glass, typically window glass, also contributes to this, as it was particularly fragile and susceptible to a high degree of fragmentation. The composition of the glass assemblage by classes of artifacts is depicted in Figure 3.9. Container, or bottle, glass is the second most common, but neither these nor the window glass sherds are used in the derivation of socioeconomic



status in this project, which focuses instead on the small percentage identified as tableware.

Description

A total of 5,467 glass fragments were analyzed and catalogued, representing a total of 37 glass tableware vessels. Due to time and space constraints, a minimum vessel count could not be performed on the glass bottles in the assemblage, though this is not to reject their analytical potential. The vast majority of these 882 sherds are dark green or olive in colour (Figure 3.10), suggesting that they belonged to wine or liquor bottles.



Jones and Sullivan (1989:14) have suggested that this colour of glass was used almost exclusively in the production of these forms. Only a few fragments of case bottles or small vials were identified. Further analysis of the glass containers identified in the collection could in future lead to inferences about the sorts of liquids consumed at Fort

York, similar to the work of Bittman and Alcaide (1984) and Heitzman (2000), but only the glass tableware is considered here.

Glass Tableware

A total of 184 fragments of glass tableware vessels were positively identified to represent some 37 vessels, including an unidentified dish, a decanter, stemware, and tumblers (Table 3.4). With the understanding that future research could indicate otherwise, decorative technique in glass is here taken to be far less indicative of socioeconomic status on glass as compared to ceramic artifacts. Rather, form is thought to relate to status based on the beverages appropriately consumed from either stemware or tumblers (Jones and Smith 1985:38, 52). These two are thus discussed in greater detail below.

Form	Sherds	Vessels
Decanter	5	1
Dish	2	1
Stemware	42	19
Tumbler	74	16
Unanalyzed	61	-
Total	184	37

Table 3.4. Sherd and vessel counts of glass tableware forms.

Stemware. The term stemware is used as an all-encompassing category for glass tableware vessels with three components: a foot, a stem, and a bowl (Jones and Sullivan 1989:138). This can include goblets, wine glasses, firing glasses, and non-drinking vessels like vases, salts, and more. Decoration is typically in the form of variously shaped stem knobs, or etched, engraved, or moulded bowls.

Out of 42 sherds assigned to the stemware category, a minimum of 19 stemware vessels were identified in the collection from Operation 1FY3, all drinking glasses (Table 3.3).

As the bowls of these are generally thin, and thus susceptible to a high degree of fracture,

quantification was done using feet and stems. Any foot for which it was possible to measure the foot diameter was counted as a vessel, unless sherds conjoined. Sixteen vessels were counted in this manner, fourteen of which had conical feet, commonly used for wine glasses. There was also one firing glass foot, and one ring foot, belonging to an unidentified form. Three additional vessels were counted by their stems, differentiated by the form of their knops, where one is plain, one a ball knop, and one unidentified.

Tumblers. Tumblers tend to be the most commonly identified glass tableware vessel found on archaeological sites, and are recognized primarily by their form. They typically have a flat or slightly concave base, a tall thin-walled body, and a generally circular cross-section (Jones and Sullivan 1989:143). Most modern glasses are recognizable as descendants of these tumblers, making the form very familiar. Their size and form varied widely. Moulding, etching, engraving, and cutting, were used to decorate tumbler bodies.

Of the 74 sherds of glass identified as having come from tumblers, a minimum of sixteen vessels were counted. As with stemware, bases were primarily used for quantification, as the bodies of tumblers are thin and fracture easily, thus preserving poorly. Twelve were identified using bases where a foot diameter could be measured, with a range of between 4.8 and 8 cm. Four additional vessels were counted based on the presence of rim sherds where a rim diameter could be measured, ranging from 7 to 10 cm. Ribs, flutes, and panels are the most common decorative motifs present on the tumblers identified, although diamonds and hobnails were also identified on two body sherds each.

Summary

For this thesis, the ceramic and glass tableware components of the Operation 1FY3 archaeological collection are used in the evaluation of a number of means of deriving socioeconomic status from the remains of consumer goods, along with an analysis of historic maps and plans. In order to accomplish the analysis of portable material goods, it is necessary to describe the assemblage in terms of a minimum vessel count, as is done in the preceding discussion. From the 19,492 artifacts evaluated in the course of this analysis, it was possible to count a minimum of 226 ceramic vessels, and 37 glass tableware drinking vessels. These are described in terms of composition, form, and decoration, to permit their use in the methods described in Chapter 2 and used in Chapter 4.

Chapter 4 – Artifact Analysis and Discussion

Two of the primary goals of this thesis – the evaluation of several means of assessing socioeconomic status from historical archaeological artifacts by deriving values often equated with higher status, and the comparison of the data from Fort York's Operation 1FY3 to findings at similar British military posts elsewhere – are addressed in this chapter. In addition, a number of problematic factors in the interpretation of the material from this context are discussed, including issues related to the use of historic documents, the question of assigning a single date range to the collection rather than breaking it down into stratigraphic levels, and the degree of fragmentation and mixture of the assemblage.

Archaeological Means of Deriving Socioeconomic Status

Three distinct methods for the inference of socioeconomic status from archaeological materials are used in this project to interpret ceramics and glass drinking vessels. These include a quantitative comparison of the ratio of tableware to teaware and stemware to tumblers, and two qualitative approaches, weighted expense rankings of ceramics, and cost index analysis, also of ceramics. Representing some of the most common or most useful techniques, they were chosen for their similar requirements in terms of interpreting data, where all three either require or function with greatest accuracy when used in conjunction with minimum vessel counts (Chapter 2). In addition, all three can be used with only a very basic identification of vessel form, where more refined cataloguing is not possible with a highly fragmented collection.

Ratio Comparison Analysis

Ferris and Kenyon (1983) have proposed that a simple calculation of the ratio between tableware and teaware, represented by plates and saucers, can provide an indication of socioeconomic status. Teaware, including both saucers and teacups, is often perceived to have been more representative of the socioeconomic standing of its users, however, when evaluated in terms of quality, or decorative technique, because of its more frequent use in social situations involving visitors. At these times, it would be valuable to have a great quantity of high quality teawares in order to communicate one's position to the interlopers (Spencer-Wood and Heberling 1987:70-71). Both quantity and quality of teawares have been measured (O'Brien and Majewski 1989:86), but in a comparison of ratio, it is mostly the number that is valued. Interpreting the ratio values derived is problematic, however, as it is uncertain whether a higher ratio is indicative of higher or lower status (cf., Ferris and Kenyon 1983:11; Spencer-Wood and Heberling 1987:70-71).

The entire portion of the Operation 1FY3 assemblage analyzed produces a ratio, between plates and saucers, of 2.4:1, somewhat higher than might be expected in an officers' mess establishment if quantities of teaware are supposed to be indicative of status. Only transfer printed and undecorated ceramics were identified with both plates and saucers, producing ratios of 3.1:1 and 10.5:1, respectively. The majority of saucers were painted by hand. It appears, from this example, that Ferris and Kenyon (1983:11) are correct in their assertion that, quantitatively at least, higher ratios of plates to saucers are indicative of greater wealth. This high number of plates as compared to saucers may ultimately be attributable to variable consumption and breakage patterns, however, where the officers made more frequent use of their tableware as hosts of innumerable dinner

parties, which thus broke and were disposed of more often. The remains of one such dinner party has been documented at Fort George, where a deposit dating to ca. 1810 containing a full complement of tableware for a party of seven has been unearthed (Plousos et al. 1998:3). Saucers also tend to be more thinly potted than plates, as well, and so fracture more easily. This makes them more difficult to identify, and a case could be made that they are underrepresented. Ferris and Kenyon (1983:10) use probate inventories to alleviate this, when available, but this is not possible in the present project. The variation between the ratios by decorative category, where shared, suggests a predominance of lower quality tablewares, as represented by the undecorated plates, as compared to teawares as represented by saucers.

While Ferris and Kenyon (1983:11) make use of saucers to represent the number of tea sets in an assemblage, the relative difficulty of assigning sherds to this category of vessel as a result of the degree of fragmentation in the Operation 1FY3 collection dictates the necessity for an alternative. As cups are an equally integral component of the complete tea set, and are much more readily identified from smaller sherds, they present a viable substitute for saucers. The ratio of plates to cups, including both size categories (see Chapter 3 – Cups, Mugs, and Teacups), then, for the entire assemblage, is 0.8:1, significantly lower than the ratio between plates and saucers. Plates and cups also shared the transfer printed and undecorated categories, with ratios of 0.7:1 and 1.6:1 respectively. These values are again suggestive of variation in the quality of tableware and teaware, where the latter is substantially more common in the more valuable transfer printed decorative technique than the base undecorated vessels. These results do not

accord with Ferris and Kenyon's (1983) findings, suggesting that cups are not a reliable substitute for saucers.

The officers at Fort York would also have purchased and used drinking glasses in the form of tumblers and stemmed wine glasses, from which an additional ratio can be derived. Although tumblers were generally more expensive than wine glasses in the early nineteenth century, a higher proportion of the latter is generally perceived to be indicative of higher socioeconomic status (Jones and Smith 1985:38, 52). This is probably because glasses, sold by weight, were valued not for their form, but rather for what was consumed from them, different types appropriate for various beverages (Jones and Smith 1985:34-38). The ratio between stemware and tumblers, then, for the Operation 1FY3 assemblage, is 1.2:1, indicating a slight predominance of stemmed drinking glasses. Decoration on these was largely either lacking, or basic, consisting of flutes and ribs, but it is unclear if there is any significance, other than temporal, to the type or degree of decoration on drinking glasses. The simple decorative styles and technologies on the glasses that were identified are in accordance with the date assigned to Operation 1FY3 (cf. Jones and Smith 1985:35-39).

As can be seen in the results presented above, ratio analysis has several advantages and disadvantages. It is very straightforward and simple to calculate, requiring only a minimal amount of analysis. The values generated, however, have little inferential potential without a vast comparative sample, and do not stand on their own well. With results on both the high and low ends of the spectrum, it is unclear whether saucers or cups can be considered more representative of the number of tea sets present in an archaeological collection, nor is it certain if either high or low values are indicative of

higher socioeconomic status. Ferris and Kenyon (1983:11) suggest that higher ratios of tableware to teaware are suggestive of higher status occupants, even though teaware is generally seen as more representative of socioeconomic status (Spencer-Wood and Heberling 1987:70-71). This suggests that there is a significant difference when evaluating quantity and quality, where greater quantities of tableware are indicative of higher socioeconomic status, as is higher quality teaware. The definition of each, and how they are identified, obviously plays a significant role in interpretation, as does the ease with which various forms are recognized. Comparing ratios by decorative category, when held in common between forms, has the potential to allow inferences about differences in terms of quality among the collection, where it is known that decorated vessels cost more than undecorated ones. It does not, however, incorporate decorative classes not shared between forms, resulting in the exclusion of decorative categories of different levels, such as the high quantity of handpainted saucers above. Ratio comparison is, at present, the sole means by which drinking glasses can be evaluated in terms of socioeconomic status, however, a ratio cannot reflect paucity of artifacts, and so may be inappropriate with lesser numbers of glasses.

Weighted Expense Ranking

By dividing the various means by which ceramics were decorated in the early nineteenth century into a ranked hierarchy by relative cost, as described in Chapter 2, it is possible to establish a measure of socioeconomic status, as determined by expenditure. Two scales are used here, one of which does not include rarer ware types like porcelain and basalt, and one of which does, with four and five ranks respectively (Table 4.1). This optional fifth rank also includes ware and decorative types that post-date the known end

date for the collection, signalling developments in the ceramic industry whose products are intrusive as well as costly. Both sherd counts and minimum vessel counts are used

Rank Decorative Categories	
1	Undecorated
2	Edge decorated (e.g. shell edge), lined, slip decorated, unpainted moulded, sponge decorated
3	Handpainted or enamelled with floral or landscape motifs
4	Transfer printed, Imari pattern, gilt and moulded
[5]	Porcelain, black basalt, time sensitive patterns or wares, including white granite and flow decorated

Table 4.1. Hierarchical ranking of decorative categories by relative cost. After Majewski and O'Brien (1989:85-86) and Miller (1980:3-4).

Note: Rank 5 is an optional inclusion depending on the nature of the collection.

(Tables 3.1 and 3.2), in order to assess the necessity of using the latter and the potential value of the former. These frequencies are also ranked, where the most common category is given the highest value, and the least common the lowest (Tables 4.2 and 4.3).

In order to normalize values, so that comparison between the four and five rank cost hierarchies is possible, the scores are placed over 10 (Tables 4.2 and 4.3). When using a four level cost hierarchy, sherd frequencies score a 7 out of 10, while scoring a similar 6.9 out of 10 on the five level scale. The four rank scale shows less of a similarity

Expense Rank	Sherd Count	Sherd Frequency		MVC Frequency	
		Rank	MVC	Rank	Rank
1	2789	4	53	3	
2	584	2	38	2	
3	368	1	34	1	
4	2615	3	80	4	
Expense Rank Score		21		26	
Expense Rank Score Over 10		7		8.7	

Table 4.2. Weighted expense rank values with a four level hierarchy.

Expense Rank	Sherd Count	Sherd Frequency Rank	MVC	MVC Frequency Rank
1	2789	5	53	4
2	584	3	38	3
3	368	2	34	2
4	2615	4	80	5
5	152	1	9	1
Expense Rank Score		38		41
Expense Rank Score Over 10		6.9		7.5

Table 4.3. Weighted expense rank values with a five level hierarchy.

as compared to the five rank scale when using a minimum vessel count, with scores of 8.7 and 7.5 out of 10, respectively. This disparity is likely the result of a marked paucity of artifacts, especially in terms of minimum vessels, assigned to the fifth cost rank. This level is also the least common for sherd counts. The inclusion of time sensitive decorative patterns and ware types, such as moulded white granite and flow printed earthenwares, heavily influences this, as their development postdates the terminal date of the collection. Their presence in the assemblage, then, is largely intrusive, accounting for their scarcity.

It is possible as well to compare weighted rank values of decorative categories by form, in order to assess whether there is a significant difference between, say, the tableware and teaware categories. This effectively tests the homogenizing effect of grouping vessel forms together. It has been suggested that teaware was the preferred vehicle by which to inform others of one's social and economic status (Spencer-Wood 1987; Spencer-Wood and Heberling 1987), through the purchase and use of relatively large numbers of high quality cups and saucers, so there is the potential that it ought to be a better measure of socioeconomic status than would be tableware. In order to test this assertion, the known vessel forms used in the minimum vessel count above were

separated into the two categories. Tableware includes all plates, bowls, and serving platters and dishes, while teaware includes saucers, cups of both sizes, and teapots.

On the four tier hierarchy, tableware scores 8.7 out of 10, while teaware scores 9.7 out of ten, both very high values (Table 4.4). On the five level rank scale, on the other hand, tableware scores 7.5 out of 10, and teaware 8 out of 10 (Table 4.5), substantially lower than when there are only four ranks. Again it appears that the inclusion of the highest cost rank of porcelain, basalt, and other wares developed later in the century, lowers the ultimate score as a result of its scarcity. Nonetheless, in both cases it is evident that the teaware used by the officers at Fort York was of a higher quality than their tableware.

Expense Rank	MVC Tableware	Rank	MVC Teaware	Rank
1	34	3	16	2
2	20	2	15	1
3	7	1	27	3
4	35	4	40	4
Expense Rank Score		26	29	
Expense Rank Score		8.7	9.7	
Over 10				

Table 4.4. Weighted expense rank values of Tableware and Teaware on a four level hierarchy.

Expense Rank	MVC Tableware	Rank	MVC Teaware	Rank
1	34	4	16	3
2	20	3	15	2
3	7	2	27	4
4	35	5	40	5
5	2	1	7	1
Expense Rank Score		41	44	
Expense Rank Score		7.5	8	
Over 10				

Table 4.5. Weighted expense rank values of Tableware and Teaware on a five level hierarchy.

Weighted rank value analysis would claim to produce an absolute score of the expense value of a collection (Majewski and O'Brien 1989:86; Vaccarelli 1996:68-69), yet it is still incumbent upon the researcher to ensure that comparisons be made only between appropriate sites. Factors such as differential market access, time lag, and personal preferences must be accounted for before making such evaluations. For example, while transfer printed ceramics became common in Britain soon after the development of the process, it was not until after the War of 1812 that they appeared in significant numbers among citizen holdings in North America (Kenyon 1985:46; Samford 1997:3). This means that, in terms of socioeconomic status, it would only be appropriate to compare early nineteenth century British military sites to other contemporary military sites, because the army acquired its wares through agents connected to the potteries in England, rather than through colonial distributors and wholesalers (Sussman 1978:93-95). Nevertheless, it certainly provides an excellent measure for comparing between like sites, or like contexts within the same site. There is also the possibility that the score derived through the process can be interpreted on its own, as it is a measure on a set scale. The closer the value is to the highest end of the scale, the higher the expense value of the collection, and presumably the greater the owner's socioeconomic status, or at least their means of acquiring material goods. Weighted expense rank analysis, then, is probably most useful in exploratory studies, especially where appropriate comparisons are not immediately available, as is the case with Fort York.

Price Index Analysis

The ceramic cost indices derived by Miller (1980, 1991) from historic documentary sources have allowed nineteenth century ceramicists to measure relative expenditure based on the cost of different decorative styles as compared to undecorated CC ware. Both widely used and widely criticized (Chapter 2), price index analysis is the most methodical means of inferring socioeconomic status from the archaeological record. Limitations imposed by the characteristics of specific collections, especially the highly fragmented Operation 1FY3 assemblage, constrict the use of all the values Miller provides. It was not possible, for example, to divide all plates by size categories, as would be most desirable. Rather, it was necessary to combine artifact classes, averaging Miller's (1991) index values, for this project.

When using the 1823 and 1825 ceramic price indices for forms, the highest average values are associated with the two sizes of teacup (3.15 and 2.83 for the smaller and larger cup sizes, respectively) and saucers (2.52), while plates score modestly by comparison (2.08), and bowls have the lowest average value (1.58) (Table 4.6). These values are in accordance with the assertion that teawares can be expected to rank higher, indicating a greater cost, than tablewares (Miller 1991:5; Spencer-Wood 1987:338). In spite of a general lack of the highest cost ceramics, such as porcelain and black basalt, the high scores indicate that the officers at Fort York spared little expense in acquiring their ceramics. This paucity of the finest wares and decorative types, despite the overall high quality of ceramics, is similar to Sussman's (1978:101) findings at the British military

Form	Total Frequency	Total Value	Average Value
Plates	51	105.83	2.08
London size cups	54	169.84	3.15
Irish size cups	11	31.16	2.83
Saucers	23	58.05	2.52
Bowls	18	28.40	1.58

Table 4.6. Average price index values by form, values indicate increasing cost over a base of 1.00, represented by undecorated cream coloured wares.

site at Fort Beauséjour in New Brunswick. While not strictly comparable, due to differences in time and use, the sites listed by Miller (1980:35-37) all produce values considerably below those presented here, with the exception of the high status plates at the Walker Tavern (2.44). Three inferences can be drawn from these results: 1) the officers at Fort York had substantial resources with which to purchase reasonably expensive ceramics; 2) undecorated, minimally decorated, and utilitarian wares, those that may have been provided by the military (Sussman 1978:99-100), were not used predominantly, except in the case of bowls; and, 3) teawares were the primary means by which to express superior socioeconomic position.

Several significant issues arise in the use of scalar price indices to interpret nineteenth century ceramic assemblages, demonstrated above. Foremost among these is the need to compare the results with other contemporary collections of similar context, otherwise the values exist in something of a void, without a concrete upper limit. For instance, most of the values derived from Operation 1FY3 seem fairly high, suggesting a high socioeconomic status, yet if a contemporary assemblage from the same site, and associated with the rank and file soldiers, were to have even higher values, the interpretation would have to be altered to account for the variation. Because socioeconomic status is a scalar measure, it is difficult to interpret results without some

sort of reference. Below, I attempt to compare these results with those from other British military sites.

Related to the necessity of comparing results with other sites is the difficulty of identifying appropriate contexts for evaluation. Numerous factors contributing to the eventual result, such as differential market access, ethnicity, gender, and personal choice, are obscured through the use of scalar price indices, where differences have been largely attributed to socioeconomic status (Monks 1999:208). This can be alleviated somewhat through careful consideration of the historic situation of comparative samples, and interpretation of the results as indicative of relative expenditure rather than as an objective measure of social status or class (Brighton 2001:19). For example, in the current project, it is inappropriate to compare the price index values derived above to the sites listed by Miller (1980:35-37), on a more than superficial level, because of variations in the means by which the inhabitants of each acquired ceramics. Though the officers undoubtedly owned teaware more expensive than that of the citizens at Miller's sites, it cannot be stated confidently that this is the result of Fort York's officers' superior socioeconomic standing and financial means. Rather, it is possible that the citizens did not have access to the same variety of goods as did the officers in this case, who obtained their ceramics directly from England rather than through the local North American market (Sussman 1978:102).

Nevertheless, price index values provide a measure of how much expense a group was willing and/or able to devote to their ceramics above the bare minimum of undecorated cream coloured earthenware, or even wood and metal dishes. Comparing the value within sites and to other sites certainly is possible, it merely needs to be done only

under highly controlled circumstances. The process is reasonably straightforward, and has the same quantification requirements as the two alternative methods discussed above, yet greater detail in analysis will greatly refine the results. It is, thus, probably the most intensive form of analysis used, and the argument can be made that it is therefore the most informative.

Document Based Means of Deriving Socioeconomic Status

The advantages of combining archaeological and historical sources in the analysis of historic sites have been widely discussed (Armstrong 2001; Cleland 2001; Deetz 1977; Garrow 1987; Noël Hume 1970). In the vast majority of cases, the use of documents has focused on personal records and inventories, generally applicable only to the individual, or at most the family. These individuals are known to have contributed directly to archaeological remains associated with their habitation, making their documents a valuable source. This may be impractical in a military barracks setting, however, where soldiers and officers were frequently transferred numerous times in the course of their service (Chartrand 1998:9), as a result having only minimal and anonymous impact on the archaeological deposit. Ownership of the goods in their midden is uncertain, as many officers and even some of the more affluent soldiers typically used pieces belonging both to the mess and to themselves (Sussman 1978:95). Hence, it is less appropriate to examine inventories of personal affects at military outposts.

An alternative means of deriving socioeconomic status from documentary sources is through the analysis of available floor space as indicated on historic plans. This has been particularly effective in defining differences between officers and soldiers at other

sites (Cary et al. 2005:66-67; Parrington et al. 1984:125), and can also be assessed based on archaeological structural remains when paired with population data (Last 1996:43-44; Triggs 2005:124). This vein of research has the ability to make inferences regarding social perception and communication, whereby larger, more extravagant spaces, can be read as communicating the social superiority of one group over another (Davies 2005:65; Otto 1984:161-163; Parrington et al. 1984:129; Stine 1990:44-45).

Plans of both Fort York and all its constituent buildings from the nineteenth century have survived in the documentary records and can be compared to the modern standing structures in order to derive the spatial allocation of different military orders. Numerous significant alterations to the interiors of each since their construction ca. 1815 necessitates the use of the modern exterior measurements in order to make accurate estimates of the square footage allotment. Digitized copies of Lieutenant-Colonel Elias Walker Durnford's survey work are used for this exercise (Figures 4.1 and 4.2). As they lack a usable scale, these were manipulated using computer imaging software, compared to the known lengths and widths of the structures, and the maximum intended capacity of each used to establish how much space would be given per individual.

The Officer's Barracks and Mess (Figure 4.1) is approximately 35 m. by 10 m., not including the two rear kitchens, and had space for eleven officers, though it was rarely filled to capacity (Benn 1992:9). With 143.1 m.² of living space in the barracks portion of the building, each officer averaged 13 m.² of space, albeit with some minor differences based on rank. The barracks were rarely fully occupied, however, and so the officers frequently had about twice as much space as was officially designated for them (Benn 1992:9). The North and South Soldiers' Brick Barracks have been researched in

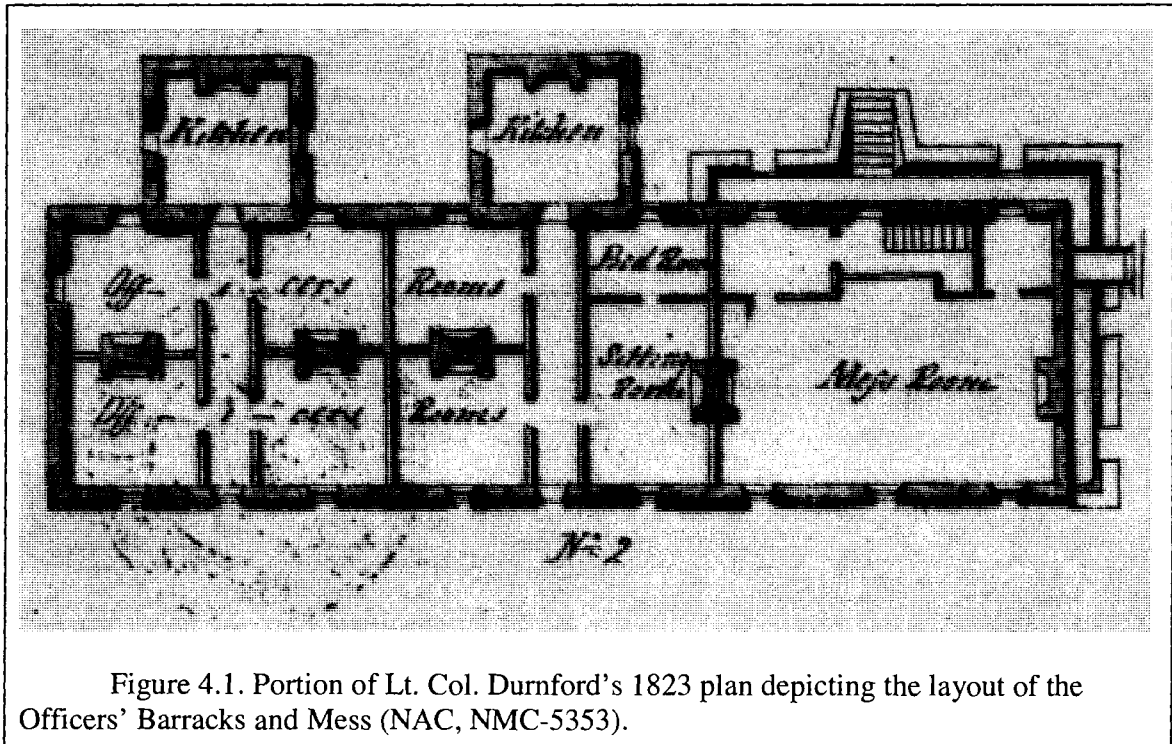
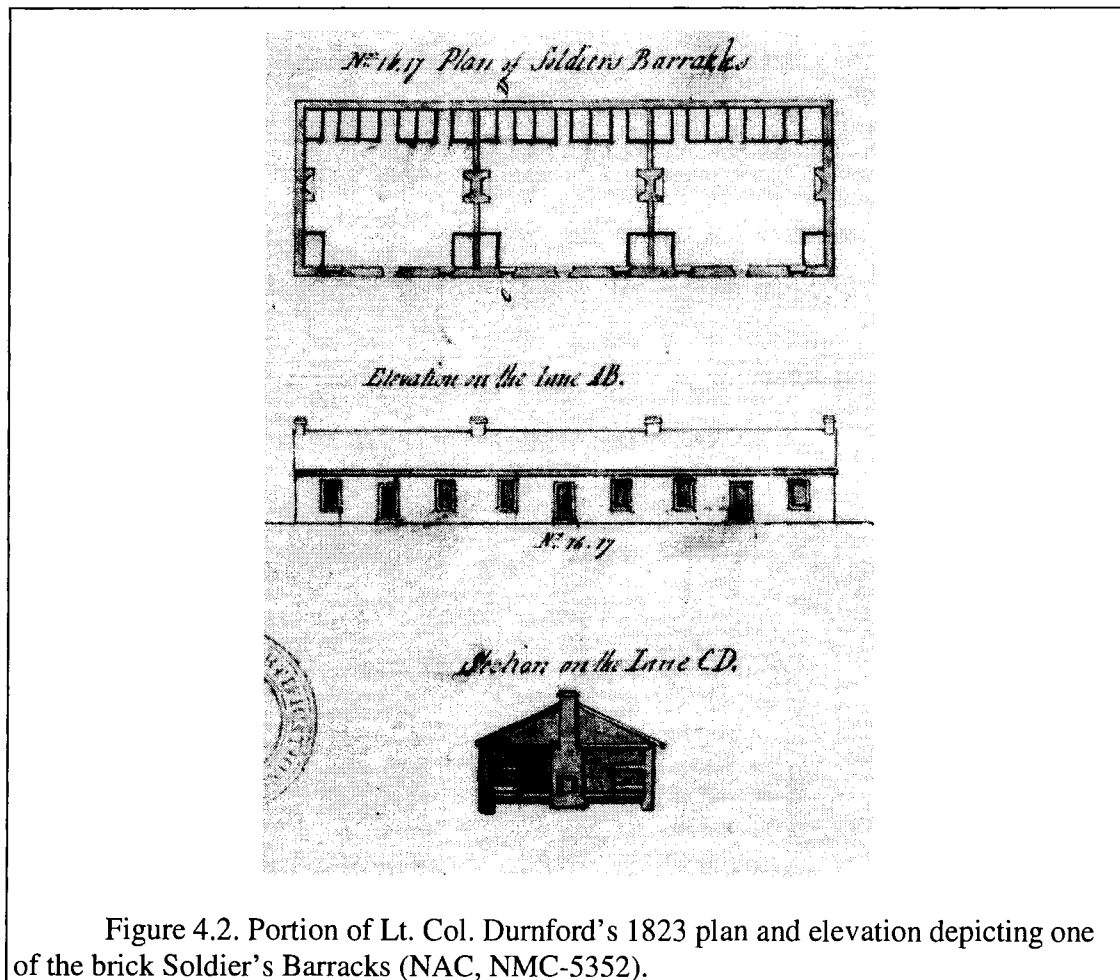


Figure 4.1. Portion of Lt. Col. Durnford's 1823 plan depicting the layout of the Officers' Barracks and Mess (NAC, NMC-5353).

substantially less detail, but it appears from Durnford's plan of the structures that they were meant to have virtually identical interiors, and were designed for a capacity of 48 rank and file each (Figure 4.2). Initially divided into three equal sized rooms of about 9 m. by 9.9 m., the brick barracks were later renovated to accommodate more readily families following the construction of the Rebellion Barracks in the northwest corner of the fort (Benn 1993:102). Before that time, each soldier was afforded approximately 5.6 m.² when at capacity, 2.3 times less space than was designated for each officer.

This sort of document-based spatial analysis has the power to provide archaeologists with an idea not merely of the existence of a social hierarchy, but with an understanding of how those differences were perceived, communicated, and reinforced (Monks 1992). The Royal Engineers who designed and either constructed, or oversaw the construction of, all such buildings acted as an agent of the upper classes in this regard.



Differential spatial allotment sizes is one means of reading the messages built into the structures, but another channel for achieving that goal is by examining differences in style, where variations in structural embellishments and decoration can be seen as indicative of socioeconomic differences (Otto 1984:161-163; Rotman and Nassaney 1997:51). Without the detailed information available concerning the structural history of the officer's barracks (Benn 1992), it is difficult to compare the soldiers' brick barracks in any meaningful way. As a result, window glass is taken to be representative of the willingness of the military to purchase more expensive fixtures for different rank groups, as flat glass was still significantly expensive in the first decades of the nineteenth century

(King 1987; Kowal 1960; Pacey 1981). At Fort York, window glass comprises approximately 8.2% of the front façade of the Officers' Barracks, and only slightly less at 7.5% of the façade of the Soldier's Brick Barracks. Based on Durnford's 1823 drawings, the seven window casings of the officer's barracks were each approximately 0.91 m. by 1.52 m., or about 3 feet by 5 feet, while the six window fixtures in the soldiers' brick barracks were each approximately 0.78 m. by 1.51 m., or about 2 ½ feet by 5 feet. The total amount of window glass required for the officer's barracks and soldiers' brick barracks was, then, about 9.68 m.² and 7.07 m.², respectively. The differences by sheer quantity of flat glass required in the initial construction and subsequent repairs, then, are more substantial than the variance in proportion of the façade comprised of windows. What is not apparent in the plans, however, is the quality of the glass used in the buildings, where the officers' barracks was typically outfitted with thicker glass (Appendix III; Benn 1992:48).

As is often the case when consulting and interpreting historic documents, it is crucial that potential inaccuracies in the sources be considered. In the case of the plans and elevations used for the above calculations, Durnford and his assistants may have inadvertently introduced errors through the use of inaccurate measurement techniques, or intentionally through a desire to present the fort's habitation conditions in a favourable light. The lack of a scale on the drawings also makes this sort of analysis difficult, though not insurmountable when the structures are still standing and measurements are obtainable. In the case of strictly regimented construction practices, as the buildings of the British Royal Engineers in Canada were ideally meant to be (Vincent 1993), spatial allotments to different rank groups is a promising means of establishing relative

socioeconomic status. Unfortunately, it requires a dialogue between archaeological and historic data sources that might not always be feasible, thus moderately limiting its utility when one or the other is lacking.

Status and Other British Military Posts

It would be inappropriate to compare the above results of the various methods of inferring socioeconomic status for the officers stationed at Fort York between 1815 and ca. 1830 to contemporary civilian sites. Different processes affected the acquisition, use, and disposal of material goods at military posts (Sussman 1978), and as such, only sites of similar context ought to be consulted. Unfortunately, there have been very few studies of socioeconomic status at British military sites of the early nineteenth century, especially in Ontario, and there have been very few instances where even a minimum vessel count has been performed. Rather, most work on these sites has focused on questions related to architectural history and stratigraphic development, with very little emphasis on cultural interpretation (cf., Last 1999, 2000, 2001).

Fortunately, there are some data that have been published, from which values similar to those above can be derived, for a deposit associated with the South Soldier's Barracks at Fort York, which was created slightly later (Webb 1992). Last's (1996) work at a Fort Wellington privy is useful in the same manner, though it dates later than the Fort York materials. Cary et al. (2005:66) have also done some work analyzing spatial organization at the first fort at Point Henry in Kingston. Finally, another Trent Anthropology graduate student, Beau Cripps (2003), assessed a collection from the

officer's quarters at Shirley Heights in Antigua, West Indies, for, among other cultural interpretations, measures of socioeconomic status.

The Soldiers of Fort York

The South Soldiers' Brick Barracks at Fort York, already introduced above in the analysis of spatial allocation and amount of window glass, was the subject of excavation in 1990 in advance of restoration and upgrade efforts. Ten suboperations around the perimeter of the building exposed the foundation, providing valuable information on the structural history, all comprising Operation 1FY27 (Webb 1992:24). Of special note is Event 45, identified in every suboperation around the building, an 1837 trench fill event associated with contemporary attempts to fortify the foundation (Webb 1992:46). A total of 5,321 artifacts were associated with this event, the majority of which predate the 1837 excavation and fill (Webb 1992:80). A minimum of 231 ceramic vessels were identified and described in terms of paste and decorative technique (Webb 1992:80-88). These have been tabulated in order to facilitate their use in comparing with the results obtained above, and can be seen in Tables 4.7 and 4.8.

Using the values derived from Webb's (1992:80-88) minimum vessel count (Table 4.7), it is possible to compare the results from the Officer's Barracks. The ratio of plates to saucers, representing tableware and teaware respectively, is 9.3:1 for the entire Event 45 assemblage, much higher than the 2.4:1 ratio at the Officer's Barracks. This is probably related to the paucity of saucers identified in Operation 1FY27 (Table 4.8). If we take teacups to be representative of teaware instead, then a ratio of 2.1:1 is derived, still much higher than the 0.8:1 ratio associated with the officers, indicating the reverse of the pattern seen by Ferris and Kenyon (1983:11). This may be the result of changes in

society, whereby tea was increasingly readily available to and consumed by the middle and lower classes as the nineteenth century wore on (Forrest 1973:86-89; O'Brien and Majewski 1989:86). In this way, some of its non-utilitarian functions may have diminished after the early part of the century. Alternatively, the high frequency of vessels identified only as the more generic teaware (Table 4.8) renders the ratio analysis of little use.

Using a four tier hierarchy, appropriate for the time period of the event, a weighted rank value of 7.3 out of 10 is obtained for tableware, and 9.7 out of 10 for teaware, compared to the 8.7 and 9.7 out of 10 scored by the officers' mess. That the soldiers used teaware comparable to that used by the officers suggests that the lower ranks were attempting to emulate the actions of their superiors by serving fancy teas. At the same time, the officers ate using a far superior table setting, which accords with the notion that they were required to communicate their social status at their frequent dinner parties as well as when serving tea.

In calculating average price index values for the Operation 1FY27 Event 45 assemblage, it was necessary to combine some categories as a result of not having worked with the material. Two values were thus derived, one for flat tableware (1.79), and one for teaware (2.27), both of which are considerably lower than the values associated with the Officers' Barracks, where plates scored 2.08 and teaware averaged 2.76. The gap between the two is not nearly as wide as might be expected, which can be partially accounted for by the later date attributed to the soldier's collection. There is also much more evidence of mixing and intrusion by later deposits in the Event 45 clay filled

Ware Type	Plates	Saucers	Cups	Bowls	Teaware	Platter	Teapot	Plate/ platter
Creamware	22	1	3	4	-	-	-	-
Ironstone	5	-	3	-	1	-	-	1
Pearlware	16	4	12	4	16	-	-	14
Porcelain	-	-	-	1	1	-	-	1
Refined buff earthenware	-	-	-	1	-	-	-	-
Refined red earthenware	-	-	-	-	-	-	1	-
Refined white earthenware	7	1	-	5	19	2	-	9
Refined white stoneware	1	-	7	-	-	-	-	-
Refined yellow earthenware	-	-	-	1	-	-	-	-
Unidentified white earthenware	5	-	2	2	4	-	-	-
Vitrified white earthenware	-	-	-	-	1	-	-	-
Total	56	6	27	18	42	2	1	25

Table 4.7. Minimum vessel count by ware type, Event 45 in Operation 1FY27, derived from Webb (1992), using terminology in original report.

trench, where the popularity of flow printed and ironstone vessels both postdate the assigned date of the assemblage. Thus, the values have likely been skewed upwards in using a mid-range date of 1833 from Miller's (1991) indices, though this is probably not the sole factor. The observed paucity of very high quality ceramics in the officers' collection similarly skews their results downwards, ultimately acting to homogenize the Fort York archaeological assemblage as a whole. An abundance of slip decorated bowls may be suggestive of an institutionally distributed ware (Last 1996:55-58).

The differences between the officers and the soldiers at Fort York are much more

Decorative Technique	Plates	Saucers	Teacups	Bowls	Teaware ^a	Platter	Teapot	Plate/ platter ^b
Blue printed	2	1	13	2	10	1	-	1
Flow printed	2	-	-	-	1	-	-	-
Handpainted	1	3	3	1	22	-	-	-
Jackfield	-	-	-	-	-	-	1	-
Moulded	6	-	-	-	-	-	-	-
Moulded and painted	1	-	-	-	-	-	-	-
Moulded CC ^c	5	-	-	-	-	-	-	-
Other printed	3	-	5	-	2	1	-	2
Shell edge	18	-	-	-	-	-	-	19
Slip decorated	-	-	-	13	-	-	-	-
Sponged	-	1	-	-	2	-	-	-
Undecorated	5	-	4	-	3	-	-	2
Undecorated CC ^d	-	1	2	1	-	-	-	-
Unidentified ^e	13	-	-	1	2	-	-	1
Total	56	6	27	18	42	2	1	25

Table 4.8. Minimum vessel count by decorative technique, Event 45 in Operation IFY27, derived from Webb (1992).

^aTeaware is combined with Saucers and Teacups for price index analysis and weighted rank value analysis, but not for ratio analysis.

^bPlatters and Plate/platters are combined with plates for the purposes price index analysis and weighted rank value analysis, but not ratio analysis.

^cMoulded CC refers to Bath, Royal, and Queen's pattern ware, which lack painted decoration.

^dUndecorated cream coloured earthenware is quantified separately to facilitate its use in price index analysis.

^eSome vessels lacked a description of decoration in Webb (1992), hence are considered undecorated for the purposes of this analysis.

slight than would be expected based on the constitution of the British military in the early nineteenth century. Officers were expected to be much more than military men, they were to embody all aspects of being a gentleman (Spiers 1980:1-2, 22-23). Included among these responsibilities were the entertainment of the local gentry (or as near as existed in the colonies), and the presentation and communication to the lower ranks of their socioeconomic superiority. All of this required income and means far beyond the salaries provided to them by the military, meaning that officers were usually drawn from the higher social ranks, while the rank and file soldiers were generally taken from the lower social echelons, the minimally skilled workers, the unemployed, and the hungry (Barker 1976:20, 30; Spiers 1980:44-46). They typically had few belongings, and even less income. How, then, they came to acquire higher quality ceramics at Fort York, in emulation of their superiors, is a matter of some mystery. It is possible that, if the Operation 1FY27 Event 45 assemblage were analyzed for mean popularity date, it would largely date earlier than the 1837 excavation and fill. It has been shown that this pattern can be indicative of lower social ranks emulating higher social ranks by acquiring what was otherwise considered out of fashion (Garman and Russo 1999:128; O'Donovan and Wurst 2001-2002:78; Turnbaugh and Turnbaugh 1977:102). It is also possible that the barracks were occupied not by the ordinary rank and file, who were discouraged from maintaining personal possessions (Last 1996:49-51), but by noncommissioned officers, who had marginally greater means of acquiring and storing ceramics and other material goods. The most likely explanation, however, relates to changes taking place in the ceramic industry. With the exception of a brief spike in 1833 or 1834, ceramic prices

declined dramatically in the 1830s, largely as a result of changes in the discount rates applied by potters to the net price of their wares (Miller 1991:2-4). That ceramics were made cheaper through these changes allows for later assemblages to mirror earlier ones, in terms of ratios between decorative techniques, for greatly reduced cost. This is the primary reason that Miller (1991:2-3) insists that collections not be compared between the four periods he defines.

Regardless, the number of vessels identified seems to suggest that the soldiers at Fort York found other means of acquiring personal belongings. If the proportion of the vessels with manufacturing imperfections, known as seconds (Sussman 1978:96), were known, it might also shed some light onto the source of variation.

Fort Wellington Latrine

Last (1996) interpreted the cultural and architectural remains of a privy used at Fort Wellington for a period of 88 years, focusing on its use between 1843 and 1854 by the Royal Canadian Rifle Regiment. The latrine was excavated in the early 1990s by Parks Canada. The structure's three chambers were used by everyone living at the outpost, including officers, soldiers, women, and children (Last 1996:10-11). While his interest is in the use of the latrine as it "communicated social messages, negotiated boundaries, and sustained group identity" (Last 1996:13), his focus is on social attitudes and viewing the structure as an artifact of itself.

Only limited interpretation of the ceramic artifacts is presented, but the description of the collection, as remarkably varied (Last 1996:55), strongly mirrors the Operation 1FY3 assemblage. Last (1996:60-61) attributes this variation to a need for individuals to strengthen their individuality, exploring their potential to communicate

more than simply socioeconomic status. As a result, he does not make use of the same calculations used on the Operation 1FY3 assemblage. Fortunately, he does provide the minimum vessel counts by form and decorative category required to derive such measures (Last 1996:57). The minimum vessel count is not broken down by the various chambers, which are ascribed to officers, women, and soldiers, but rather represents the garrison as a whole.

Making use of Last's minimum vessel count, then, it is possible to derive a ratio between plates and saucers of 1:1, representing tableware and teaware. The ratio between plates and cups, by comparison, is 1.4:1. These values do not compare well with those for the Officers' Barracks and Mess at Fort York, largely as a result of differences in the means of quantification. Where minimum vessels in Operation 1FY3 were counted using distinctive measurements and characteristics, the Fort Wellington collection was analyzed through large-scale crossmending. This approach makes the differentiation of thin walled vessels, like saucers and teacups, easier.

For the Fort Wellington latrine assemblage as a whole, a five-level weighted rank value of 8.4 out of 10 is scored, with an 8.4 out of 10 for the tableware component, and 8.7 out of 10 for the teaware component. The five-rank hierarchy is used here because of the later date of the Fort Wellington collection, where the median date of 1849 postdates the introduction of ironstone, which resulted in an additional decline in value of the other decorative categories (Miller 1991). These reasonably high values are much more closely related to each other than they are in either the officers' or the soldiers' collections at Fort York, probably reflecting the mixed, and hence homogenized, context of the latrine. It may also reflect a later time period, where better-developed towns were more capable of

providing their own entertainment, thus relying less on the garrison for dinner parties and tea services.

It was similarly possible to derive price index values based on the information provided. Values for plates (1.73), muffins (2.30), bowls (1.48), saucers (2.04), and cups (2.09) were all calculated, and all score more modestly than their correlates in Operation 1FY3 at Fort York (Table 4.6). Although some have advised against comparing deposits from different periods, due to changes in market accessibility and deflation that cannot be accounted for with price indices (McBride and McBride 1987:145; Miller 1991:3; O'Brien and Majewski 1989:73), the values do fit with the historically known pattern. The entire garrison contributed to the Fort Wellington deposit and the values are accordingly lower, while primarily the officers contributed to the Operation 1FY3 deposit, where the values are generally higher. Nonetheless, concrete inferences cannot be drawn from a comparison due to these differences in date, the result again of declining ceramic costs and changes in preferences.

Spatial Analysis at Military Posts

A comparison of the spatial allotments and usage for different ranks at British military garrisons is one of the most commonly applied techniques for interpreting differences between officers and the rank and file. Much of the theory behind this approach is that seclusion and privacy are only afforded to those with the appropriate rank. It is relatively commonly used on British military sites because of the frequency with which plans or architectural remains, and often both, persist.

The first fort at Point Henry in Kingston, predating the still standing citadel whose construction obliterated most of its predecessor, was built around the same time as was

Fort York, following the War of 1812 (Cary 2003:4-6). Somewhat more significant than its correlate in York, Fort Henry's officers were each allotted approximately seven times the space given regular troops (Cary 2003:13; Cary et al. 2005:66). Soldiers were afforded about 2.8 m.², while officers had, at least 12.29 m.², just over four times the amount of floor space, when the officers' barracks was fully inhabited. Given that many of the senior and married officers maintained quarters in town, this probably occurred only rarely (Cary 2003:13; Last 1996:43).

Analysis at Fort Wellington uses actual occupation statistics to calculate an average of about 33.3 m.² available for each officer living at the garrison, as compared to approximately 4 m.² per person living in the soldiers' barracks (Last 1996:43-44). This gave the officers over eight times the space afforded for the lower status inhabitants.

Both of the above cases provides officers in their quarters with significantly more space compared to the soldiers at the same garrison than does the barracks at Fort York. This is probably related to the fact that, while constructed for a maximum occupation of eleven officers, the Officers' Barracks and Mess was only rarely inhabited by more than four (Benn 1992). Because occupation statistics are not readily available for the Soldiers' Barracks at the time, however, it was necessary to use maximum intended capacity, unlike at the other sites above. It is possible, too, because Durnford's drawings do not indicate the presence (or absence as the case may be) of families, that the values are potentially underestimating the habitation numbers of the brick barracks, not to mention the potential contributions to the collection of women and children. The incomplete, and often inaccurate, nature of the historic record necessitates the checking of inferences

against archaeological data. Durnford's plans often lack a scale, for example, and we are fortunate to have the original structure against which to compare the measurements.

Shirley Heights, Antigua, West Indies

Noticing a dearth of literature regarding the cultural interpretation of artifacts collected from a midden associated with the Officers' Quarters at the Shirley Heights military post in Antigua, West Indies, Cripps (2003) undertook to describe and analyze that collection. With goals of describing the collection, establishing a date for the collection, and assessing the level of socioeconomic status of the officers, and to attempt to identify gender and ethnic influences on purchasing patterns (Cripps 2003:12-13), his work is unique in that he also made use of ratio analysis and ceramic price index values to infer status levels. Comparing this work to a site in Southern Ontario can appear contradictory, but they hold in common their establishment and occupation by the British military. It has been suggested elsewhere that British outposts throughout the colonies all had relatively equal access to the home market, and most colonial settlements maintained close ties to the mother society (Farry 2005; Lawrence 2003). These factors make it possible to make such comparisons across vast geographic distances, as the British military was, effectively, the first global marketplace.

Cripps (2003:66) reports finding ratios between plates and saucers of 3.3:1 for the entire assemblage, somewhat higher than the 2.4:1 ratio found in Operation 1FY3 at Fort York. This would suggest, according to Ferris and Kenyon (1983), that the officers at each site were reasonably affluent, and especially so at Shirley Heights. In both cases, however, highly fragmented assemblages probably overestimate the proportion of plates

in the collections. As previously discussed, thinly potted saucers, by comparison, are more susceptible to post-depositional fracture, and thus are more difficult to identify.

The price index values presented by Cripps (2003:67-68), using minimum vessel counts, are 1.46 for tableware, 1.70 for bowls, 1.89 for saucers, and 2.20 for cups. All of these, with the exception of the bowls, are noticeably lower than the values calculated for the Operation 1FY3 assemblage at Fort York. Unfortunately, because Cripps (2003:59-60) derives an average ceramic date of 1838 for his collection, it is again not possible to make meaningful comparisons between the results, as each site represents a different period defined by Miller (1991:3-4).

Although Cripps (2003:112-113) recognizes the potential use of drinking glassware in the derivation of socioeconomic status, he does not provide a ratio between stemware and tumblers. This is because of their paucity in the collection, which he attributes to preferential use of ceramic beakers for the consumption of alcohol (Cripps 2003:112-113). Similar beakers have been identified in the Operation 1FY3 assemblage, though not in the same abundance.

Discussion

With all the data and calculations presented above, it is possible to evaluate the results of the analysis of the Operation 1FY3 ceramic and glass assemblage in terms of socioeconomic status. It is also possible, in doing so, to assess the comparative utility of the four techniques used to derive socioeconomic status. Four additional issues - including an assessment of the regiments posted to Fort York, sampling, issues related to the assignment of a date to the collection, and problems associated with the degree of

fragmentation of the artifacts - deserve additional consideration for how they may affect interpretation of the material culture.

Socioeconomic Status of the Officers

Four methods are used to infer the socioeconomic status of the officers living at Fort York, based on both archaeological and historic data sources, and all four appear to indicate that the officers had reasonably high means of acquiring material goods, placing them fairly high on the socioeconomic scale. This depends, in some cases, on how the results are interpreted, as in the case of ratio analysis. Higher numbers of plates, as compared to saucers, are indicative of higher status inhabitants, but issues of disproportionate identification arise (Ferris and Kenyon 1983; Spencer-Wood and Heberling 1987). Comparing ratios by decorative technique illuminates the matter some, especially when used in conjunction with a ratio between plates and cups. Ratio analysis is thus too problematic to interpret, even when compared to other sites. Problems resulting from fragmentation (below) affect this approach most dramatically. The other three methods, which nevertheless are susceptible to this problem, attempt to overcome this through a focus on factors other than ceramic vessel form, thus rendering them more useful in British military site analysis.

Most interpretations of archaeological materials require comparison of the results to contextually similar sites, especially in the inference of socioeconomic status, a highly scalar measurement. Values cannot be considered either high or low without a base against which to measure them. This is largely true of the methods used in the above analysis, with the exception of the weighted rank value technique, which effectively places the expense of the ceramics on a sliding scale with minimum and maximum

endpoints (O'Brien and Majewski 1989:86). Ratio analysis, price index values, and spatial measurements are all capable of implying varying levels, but comparing their results to others strengthens their interpretation. For example, in the case of the plan based spatial analysis, it was possible to suggest that the officers at Fort York were allotted some 2.3 times more floor space than the lower ranks. Though this appears to be a substantial difference, when compared with the disparities at Fort Wellington (Last 1996:43-44), and the first Fort Henry (Cary 2003:13; Cary et al. 2005:66), it becomes apparent that it is quite minimal, suggesting that Fort York may have been less prestigious an assignment than some of these others. Until data is available from more varied sites, it is difficult to do more than contribute values to the growing knowledge base.

Superficially, the collection from Operation 1FY3 compares well with other early nineteenth century British military sites, though again, the values cannot be directly contrasted, with the possible exception of weighted rank values. Changes in marketing practices, decorative technologies, and accessibility of material goods, have caused Miller (1991:3-4) to define four periods within which comparisons of price index values are valid, and none of the sites for which data are available date to the same period as the Operation 1FY3 assemblage. An accelerated decline in the cost of certain ceramic forms after ca. 1830, and the introduction of new ware types and decorative techniques after 1840, results in the emulation by later assemblages of the composition of earlier ones. While weighted rank values have the potential to overcome these issues of timing because of the existence of two rank hierarchies based on changes in decorative technologies, explored favourably by Vaccarelli (1996), there have not been any studies

of military archaeology to make use of its potential. Nonetheless, it was possible to derive measures based on minimum vessel counts published elsewhere (Last 1996; Webb 1992), both of which scored lower than the Operation 1FY3 assemblage. As both include vessels attributed at least partly to rank and file soldiers, this shows that the officers of Fort York were both capable and willing to spend more on their ceramics than were the lower ranks. It is also possible to compare spatial allotments between sites of differing age, but the value of this lies more in temporal interpretation.

In spite of these difficulties, a pattern does emerge when comparing the ceramic assemblages of officers and soldiers at various military sites within the British Empire of the early nineteenth century. The paucity of very high quality ceramics at Fort York, especially including imported porcelain, is mirrored at Fort Wellington (1996), the Shirley Heights Officers' Quarters in Antigua (Cripps 2003), and at Fort Beauséjour in New Brunswick (Sussman 1978). This is perhaps more telling than the values provided by the methods explored above in regards to social practices and values. That is, while the officers were expected to maintain the highest standards of the English gentleman (Spiers 1980:1-2), they were not willing to spend more than moderately to express those values. As the Officers' Mess was required to entertain the local citizens (Benn 1993:89), it is possible that they viewed the colonial inhabitants with a minor degree of disdain, such that they did not feel the need to purchase and use the most expensive tablewares. Alternatively, this pattern can be interpreted as evidence that the highest ranking officers were indeed taking quarters in town. In order to assess this assertion, it would be necessary either to investigate their living space in town, or examine the officers' barracks at a site far from any civilian settlement. In the last, this pattern probably

supports the assertion, raised historically (Benn 1993:86), that the highest ranking officers, drawn accordingly from the highest social ranks (Spiers 1980), did not inhabit the Officers' Barracks at Fort York. Rather, Captains and subalterns, gentlemen all the same, but who often lacked the means or experience to purchase higher positions (cf., Barker 1976:20), were the prime inhabitants.

This lower level of affluence, demonstrated by the lack of porcelain, unexpected frequency of undecorated vessels, and the presence of ceramic and glass bottles that may have been reused, suggests that Fort York was not a desirable post between 1815 and 1830. Aside from its construction on damp, low-lying ground (Vaccarelli 1997:104), and the above assertion that upper class officers lived in town, itself not especially prestigious at the time due to its size and isolation from other major colonial centres, Fort York may have been viewed as a relatively quiet posting, even compared to other Canadian posts, which were not considered popular assignments (Myatt 1968:28). An assessment of the regiments garrisoned here in this period can elucidate this pattern.

Regimental Postings

Between 1815 and 1835, at least nine (the 15th, 37th, 49th, 66th, 68th, 70th, 71st, 76th, and 79th) British infantry regiments were assigned to Fort York, and are most likely to have contributed to the Operation 1FY3 collection. The rebellion tensions of 1837 and 1838 caused several additional regiments to be garrisoned at the fort and its replacement, Stanley Barracks (see Chapter 1), between 1837 and 1841 (Table 4.9). Some of these regiments were undoubtedly more prestigious or elite than others, and it can be expected that the most affluent officers sought, and likely attained, assignment with the most senior units.

The question then becomes one of how to infer the relative social status of the various regiments. Regimental seniority and precedence can, to a limited extent, be derived from the numbering system, whereby each regiment was assigned a number relative to when it was commissioned. That is, the establishment of lower numbered regiments generally preceded that of higher numbered ones, such that the 24th (2nd Warwickshire) Regiment of Foot was created somewhat earlier than the 93rd Highlanders would have been raised. Seniority and precedence dictated more than simply the regiment's order in parade, it determined placement in the line of battle (Dietz 1990:24). Regimental social status was partially determined by honourable actions, especially in battle; these acts could be more easily performed when in a favourable position in the battle line, and so lower numbered regiments had more opportunity to acquire prestige.

It is also interesting to note that, in the Childers Military Localisation efforts of 1881, whereby regiments were paired together to form new regiments with county, rather than numeric designations, all but two of the nine units stationed at Fort York between the War of 1812 and the Rebellion were junior members (Brereton 1985:8; Chant 1988; Dietz 1990:118-119). Of the two that were senior members, one was partnered with one of the others stationed at York (the 49th and 66th regiments). This suggests that every geographic locale represented at the fledgling York were of lower precedence than another unit from the same region. Indeed, many of these regiments were originally formed out of necessity, during times of military strife, out of the battalions of pre-

Numerical Designation	Regimental Name	Dates of Occupation
15 th	(Yorkshire East Riding) Regiment of Foot	1834-1837
24 th	(2 nd Warwickshire) Regiment of Foot	1837-1840
32 nd	(Cornwall) Regiment of Foot	1838-1841
37 th	(North Hampshire) Regiment of Foot	1816-1817, 1825-1826
49 th	(Hertfordshire) Regiment of Foot	1803-1816
66 th	(Berkshire) Regiment of Foot	1832-1834
68 th	(Durham Light Infantry) Regiment	1819-1822, 1826-1829
70 th	(or Glasgow Lowland) Regiment of Foot	1816-1819
70 th	(or Surrey) Regiment of Foot (name changed in interim)	1826-1827
71 st	(Highland Light Infantry) Regiment	1830-1831
73 rd	Regiment of Foot	1838-1840
76 th	Regiment of Foot	1822-1826
79 th	(Cameron Highlanders) Regiment	1831-1833
85 th	(King's Light Infantry) Regiment	1838-1839
93 rd	Highlanders	1838-1840

Table 4.9. Periods of occupation for infantry regiments stationed at Fort York, derived from Spittal (2004).

existing regiments (Cannon 1852:1-2; Chant 1988). Thus, the regiments garrisoned at Fort York were, generally, of a lower social status than some of their more prestigious

contemporaries. This accords well with the ceramic patterning, which lacks the highest quality vessels that may be expected of the gentlemen officers.

That Fort York was viewed as a quiet, and therefore dull, posting is attested to by the fact that at least two of the regiments ordered to the garrison, the 15th and the 71st, were both moved there shortly after having been seriously affected by illness, and before being fully reinforced (Cannon 1848:73-74, 1852:117-118). Similarly, in both cases detachments were removed from the regiment to other small outposts on the frontier, including Niagara, Amherstburg, Fort George, and Penetanguishene. Nevertheless, many veterans, of the 49th especially, came to have affection for the territory, and either stayed or returned following their service (Myatt 1968:37).

While infantry regiments and corps were the primary inhabitants of Fort York, it should be noted that other arms of the military were present at various times as well. Included among these were the Royal Artillery and Royal Engineers (Spittal 2004). Both of these are significantly higher than the infantry on the order of military precedence (Brereton 1985:14; Chant 1988:x-xi), and consequently their officers might have been stationed at the Officers' Barracks, except that each also had their own dedicated barracks. Various local and regional militia units were also present, though their potential contribution to the deposit near the Officers' Barracks is probably minor, as even their most affluent members would have been lacking the status to be quartered with their superior officers. Militia officers were typically dressed, acted, and were of similar origin, as their men, rather than as the British officers (Chartrand 1998:38). They also were not likely to have partaken in the officers' mess. The militia was also garrisoned at

the fort only during times of extreme duress, not during the relatively peaceful years between 1815 and 1830.

Sampling

A major problem related to this collection, indeed many archaeological collections, is the sampling strategy of the excavation. The excavation of Operation 1FY3 was necessitated by stabilization and upgrade plans for the Officers' Barracks and Mess, and involved complete collection from only a small area (Brown 1988:2-3). The area chosen was, thus, not random, meaning that inferences drawn from the results of analysis of the assemblage are not statistically representative (McGrew and Monroe 2000:82-83). This is also the case with the other sites outlined above, where random sampling was eschewed in favour of salvage excavations recovering as much as possible (cf., Cary 2003; Last 1996). Although this limits the range of potential interpretative angles, especially in terms of statistical analysis, it does not limit the means of deriving inferences of socioeconomic status discussed above because of the use of minimum vessel counts.

A second factor potentially skewing the results is the fact that the east areaway was filled using an existing midden, meaning that the collection comes from a secondary deposit. It is not possible to determine what taphonomic processes affected the assemblage between depositional events, rendering it difficult to establish how representative the archaeological collection is. That the ceramic patterns evident in the collection are mirrored in other British military sites of a similar age, including Fort Wellington (Last 1996), Shirley Heights in Antigua (Cripps 2003), and Fort Beauséjour

(Sussman 1978), suggests that it is, in fact, representative, and has been only minimally affected.

On Dating

As is obvious based on the above discussion regarding comparison of the collection to other site results, it is absolutely crucial that an accurate date be established in analyzing ceramic assemblages. Although the vast majority of the Operation 1FY3 ceramics can be shown to predate the ca. 1829 filling of the east areaway, it should be noted that artifacts from a later time were present in the collection. Late palette polychrome painted sherds, flow printed sherds, and underglaze printing in colours other than blue, were all identified in limited numbers, as were more modern artifacts such as plastic cups and straws, insulated electrical wiring, and pop can pull tabs.

The inclusions of these materials indicate a substantial degree of both mixture and intrusion from later periods, especially when present in lower event levels. Most of this appears to have been introduced into the archaeological deposit in the last 100 years as a result of site upgrades, and its use as a living museum (Brown 1988). This results in questioning the integrity of the deposit as a whole, and its ability to represent the officers in the period of interest. Early in the analytical process, it was deemed appropriate to treat and interpret the collection as a single entity for two reasons: 1) the degree of mixture of the materials renders the highly detailed stratigraphic records taken by the Fort York archaeologists ineffective for temporal analysis, where modern materials underlay 200 year old chamber pot sherds; and, 2) every single minimum vessel identified and used in the above calculations that could be dated by either technology or pattern, predated the proposed terminal date of the analysis proposed in Chapter 1. Because the above methods

rely more on vessel counts than sherd counts, no sherds or vessels were included in the analysis that could not have been purchased within the period of interest.

The Effects of Fragmentation

Though there were several significant sherds of considerable size, the small number of minimum vessels identifiable (226), in spite of the enormous quantity of ceramic sherds (7,505), speaks to a high degree of fragmentation at the site. This degree of breakage makes identification difficult, especially if the collection is not crossmended. For example, plain rim sherds need about 3 cm. of length in order to estimate rim diameter, while scalloped rim sherds must be at least 6 cm. long. Certain vessel forms, such as cups and saucers, which have especially thin walls that are susceptible to breakage, will be underestimated as compared to more thickly potted vessels like plates. This has been discussed above as well in terms of how it affects ratio analysis.

Summary

In calculating values for the socioeconomic status of officers stationed at Fort York between 1815 and 1830 in this chapter, two of the goals of this thesis have been addressed. Four methods – including ratio analysis, weight expense rank values, cost index values, and document-based plan analysis – have been used, their results interpreted, and utility compared. These results were then compared to values derived from minimum vessel counts for soldier at Fort York (Webb 1992), and Fort Wellington's mixed context latrine assemblage (Last 1996). Calculations for some of the methods chosen for this thesis were also presented by Cary (2003), Cripps (2003), and Last (1996). While it is possible to make preliminary conclusions based on the above

comparisons, concrete statements regarding the socioeconomic status of Fort York's officers in relation to those at other garrisons are rendered impossible by the different time periods of each site, with the exception of the first fort at Point Henry in Kingston (Cary 2003; Carey et al. 2005). As most early nineteenth century British military sites have been excavated with a focus on issues of architectural and stratigraphic development, including Fort Henry, there is a severe lack of comparative material available. This makes the above description and calculations even more valuable as a result, expanding the knowledge base of early nineteenth century British military archaeology in Upper Canada. Similarities in the ceramic patterns identified at Fort York and at other British military sites, like Fort Wellington (Last 1996), Antigua (Cripps 2003), and Fort Beauséjour (Sussman 1978), demonstrates that the questions surrounding how representative is the sample can be addressed through an understanding of the site history and comparison with contemporary collections. It also shows that the officers stationed at these sites were not necessarily the highest ranking officials, who were likely to take quarters in town instead, in much more pleasant surroundings than were typical at a military garrison.

The derived social status of the various regiments stationed at the fort between 1815 and 1835, those most likely to have contributed to the Operation 1FY3 deposit, generally confirms that Fort York was anything but an elite posting. The high regimental numbers indicate that they were mostly of fairly low seniority and precedence, and it is doubtful that many of the most socioeconomically superior officers stayed long with these regiments. Those that did were more likely to live in town, though this cannot be known for certain without additional archaeological studies from York's citizens.

Much depends on the date ascribed to an archaeological collection, which can easily be ascertained using ceramics. While the ceramics, and other more recent artifacts, indicate that the Operation 1FY3 collection developed over the course of some 170 years, the entire assemblage is treated as a singular entity for the purposes of the above calculations, mainly because the vast majority of the material culture predates 1830. While usage dates are difficult to determine, due to the ever-present issue of time lag (Adams 2003), it is possible to state that all of the minimum vessel decorative types and known patterns in the collection, with an identifiable form, were in production before that time.

The degree of fragmentation, limiting the number of vessels identifiable, affects the utility of inferential techniques based on differences in form, such as ratio analysis. Those that count decorative categories are slightly more useable, though the results are difficult to interpret without comparative collections. Spatial and window glass allotments, derived from historic plans and elevations due to more recent alterations and renovations, would similarly be strengthened through comparison with strictly contemporary sites. In this last case, it is possible to suggest that officers at Fort York were afforded somewhat less space, in comparison to the rank and file, than were their equals at Fort Henry. However, there is no use of actual population statistics in either case. Thus, these historically based inferences about varying socioeconomic status by rank need to be integrated with the archaeological inferences. In doing so, we can confidently state that the officers enjoyed greater means by which to access and purchase consumer goods, thereby demonstrating their elite socioeconomic status.

Chapter 5 – Conclusion

The primary purpose of this thesis, when it was undertaken, was to analyze and describe, in greater detail than previously done, some of the historic archaeological materials collected from the nineteenth century British military garrison at Fort York. More specifically, it was hoped that by exploring the cultural interpretative potential of an assemblage excavated from the vicinity of the Officers' Barracks and Mess Establishment (Operation 1FY3), a base of knowledge regarding the military's occupation of early Toronto could be constructed. This base builds on the stratigraphic and taphonomic analyses already undertaken at the remote outpost (Gerrard 1993; Vaccarelli 1997). Most studies of Upper Canadian military sites have similarly focused on architectural and stratigraphic questions, incorporating only basic analysis of cultural material. Through the vehicle of socioeconomic status, then, a collection of artifacts generously loaned to the author by Toronto Culture was examined for its potential to enlighten aspects of early nineteenth century garrison life in the province.

Two secondary goals were also developed to aid in the analysis of the material and completion of the thesis. The first of these was the testing of various means by which historical archaeologists, with their unique access to two individual data sets, infer socioeconomic status, herein defined as a means by which to rank groups and individuals within a hierarchy with social and economic variables, rather than as an inference of social status (Chapter 2). With the possible exception of Miller's (1980, 1991) price index scale, where decorative techniques are assigned values based on how much they cost relative to undecorated ceramics, no standardized approach to the derivation of status

from material remains exists. The reason for this is addressed with far less frequency than doubts of the concept's theoretical validity (below), but seems largely related to inconsistency in their applicability and comparative value. The final goal of this thesis, then, was to attempt to draw comparisons between the Operation 1FY3 collection and other archaeological sites of similar context.

Studies of socioeconomic status, once common, have largely fallen out of favour (Wurst 2006:193), mainly as a result of misunderstandings of its usage. In their place have arisen numerous scholars championing the superiority of class-based analysis (McGuire 1992; Wurst 1999, 2006; Wurst and Fitts 1999). Where the former aims solely to identify and organize stratification and inequality, the latter seeks to explore the relationships between different social- and economic-based groups, focusing on the means by which these relationships are created, communicated, and maintained. While this is, without doubt, a superior approach to cultural interpretation of archaeological and historical data, it is really only applicable to areas with well-developed and well-understood chronologies and group hierarchies. Most studies claiming to assess class relationships continue to rely on very similar techniques for identifying groups to those that are under examination here (e.g., Garman and Russo 1999). Thus, it is still valid to make use of these methods, with the understanding that a base of knowledge must be constructed before we can start to look at the means by which social group or class relationships functioned at Fort York.

In order to achieve the above goals, a collection of 19,492 artifacts was catalogued, and the ceramic and glass drinking vessel components were analyzed for form and decorative techniques. The collection is directly related to occupation of the

Officers' Barracks and Mess Establishment, dating between the construction of the building in 1815 and the filling of the eastern open-faced areaway ca. 1829 (Brown 1988:7; James 1990:41). Minimum vessel counts were developed based on unique vessel characteristics once entered into a computer database, such as rim diameter, rim and body thickness, decorative pattern, and footring style. All three of the methods of deriving socioeconomic status from portable material culture function most accurately with minimum vessel counts, as opposed to sherd counts. Although crossmending tends to provide superior minimum vessel estimates, the temporal and spatial requirements precluded its use.

Means of Deriving Socioeconomic Status

Ferris and Kenyon (1983) have shown that the ratio between tableware and teaware, as represented by plates and saucers respectively, can be indicative of variable levels of wealth. There are, however, conflicting opinions as to how best to interpret the results (cf., Ferris and Kenyon 1983:11; Spencer-Wood and Heberling 1987:70-71). Because of the difficulty in identifying saucers in the Operation 1FY3 assemblage, tests were also done using cups as representative of teaware. Very different results were obtained, depending on whether saucers (2.4:1) or cups (0.8:1) are used. This uncertainty of how the values should be interpreted, along with the difficulties inherent in identifying teaware in a highly fragmented collection, renders the technique relatively unreliable, at least for early nineteenth century collections. Ratio analysis is, nonetheless, the sole means by which glass drinking vessels can be examined, where the ratio between

stemware and tumblers (1.2:1) relates less to the cost of the glasses than what was properly consumed in them (Jones and Smith 1985:34).

The rarely utilized weighted rank value analysis has the ability to produce results on a set scale, making them easier to interpret than some of the other techniques (Majewski and O'Brien 1989:86; Vaccarelli 1996:68-69). A hierarchical ranking of decorative techniques, based on relative expense, is compared to a similar ranking of frequency in an assemblage to calculate a value with set minimum and maximum possibilities. Though Majewski and O'Brien (1989:85-86) use only four levels, it is possible to use a five level hierarchy for later dated sites, thereby incorporating later technology and allowing comparison across time periods (Vaccarelli 1996:68-69). The former is more appropriate for sites predating the mid-1830s, including the Operation 1FY3 assemblage, which scores reasonably high values of 8.7 out of 10 for tableware and 9.7 out of 10 for teaware. Though the approach has only rarely been applied, especially among British military sites, it is easily calculated from published minimum vessel counts.

Miller's (1980, 1991) CC index values have been widely used in the calculation of relative expenditure on ceramics of nineteenth century sites. A relatively straightforward calculation produces an average value based on the cost of various decorative categories as compared to an undecorated cream coloured earthenware vessel of the same form. The results at Fort York's Operation 1FY3 are suggestive of moderately expensive table and tea settings. Bowls were the most modestly priced items in the assemblage, with an average value of 1.58, while plates averaged 2.08, and cups and saucers were the most expensive groups, scoring an average of 3.15 and 2.83 for the

two sizes of teacup, and 2.52 for saucers. These results confirm the assertion that teaware is generally a better indicator of socioeconomic status in qualitative terms, as it was used more exclusively to communicate one's social status to others (Spencer-Wood and Heberling 1987:70-71), especially when the officers were acting in their role as host to the local civilians. Although it is possible to make comparisons of these values throughout the British military empire, resulting from relatively standardized access to the home market compared to that of colonial civilians (Farry 2005; Lawrence 2003), it is not possible to relate sites across time periods (Miller 1991:3-4). This severely limits the potential of this approach, especially when exploring relatively undocumented areas, such as British military garrisons.

Historic plans and elevations, drawn by Lieutenant-Colonel Elias Walker Durnford of the Royal Engineers in 1823, were consulted to determine an approximation of the amount of floor space afforded the officers and soldiers stationed at Fort York. This approach works especially well within military contexts because of the standardized building techniques and theories and the centralized organization of the efforts of the Royal Engineers, official agents of the Ordnance Department, who designed and oversaw construction (Vincent 1993). The officers assigned to Fort York were given a minimum of approximately 2.3 times the floor space allocated to soldiers living in the nearby Soldiers' Brick Barracks, when the garrison was at maximum capacity. Unfortunately, the approach can only assess intended spatial allotments when population statistics are lacking, as at Fort York. Nonetheless, the intended or maximum floor space per individual may ultimately be more informative of social relationships and views.

As is true of most aspects of archaeological interpretation, the more independent sources that can be consulted in the inference of social behaviour, the better (e.g., Deetz 1977; Garrow 1987). None of the above methods for deriving socioeconomic status affiliation should be used on their own, as none of them seem capable of providing values that stand on their own without a need for comparison. Together, the results indicate that the officers at Fort York maintained a modestly expensive table and tea setting, purchasing some of the most fashionable ceramics available to them. That the officers originated from the upper social and economic ranks is a known historic pattern, and these results indicate that the study of socioeconomic status can identify their material correlates. Similarly, the assertion that the most affluent officers were not present at the barracks, either because they were not with the regiments stationed at Fort York, or because they kept quarters in town, is similarly validated.

Comparative Case Studies

For comparison, it is only appropriate to make use of British military sites from a similar time period. It would not be valid to compare the results from Operation 1FY3 at Fort York to civilian sites at this time, because of significant differences in the means by which goods were acquired. Unfortunately, those military sites for which data are available largely postdate the Fort York collection, meaning that concrete inferences cannot be made. On the surface, the findings from the Operation 1FY3 assemblage fit reasonably well with those from other sites, including Fort Wellington (Last 1996), the first fort at Point Henry in Kingston (Cary 2003; Cary et al. 2005), and the Officers' Quarters and Shirley Heights in Antigua, West Indies (Cripps 2003). It was also possible

to derive some values based on minimum vessel counts available in Webb (1992) for a collection associated with Fort York's soldiers. Unfortunately, this last also postdates the officers' assemblage, which may partially explain the relatively small gap between the two results.

An interesting pattern nevertheless arises, in that the Operation 1FY3 assemblage generally lacks the highest quality ceramics that were available, and may contain some recycled bottles and beakers. This same pattern was identified by Last (1996), Cripps (2003), and Sussman (1978), at their respective sites. This is an area of great interpretive potential, and may result from the garrison's relationship with the local civilians, the lack of the highest-ranking officers at the garrisons, or the low status of the regiments sent to the outposts.

Avenues of Future Research

There are dozens of possibilities through which this research can be taken further in future. The first of these is a more detailed analysis of the ceramic and glass sherds, including large scale cross-mending. This would provide information on taphonomic processes as well as providing more accurate minimum vessel counts for more highly refined calculations of values indicative of socioeconomic status. Superior inferences would be permitted by comparing the results to an assemblage associated with the garrison's rank and file, one which dates to the same period as the Operation 1FY3 assemblage. More detailed analyses of architectural design and embellishment would similarly allow better interpretations of the social messages communicated by the living quarters. Finally, when a more complete picture of life within the barracks is available, it

will be possible to compare the officers' ceramics to those of colonial citizens. This will allow a better understanding of the relationships between the military post and the town in Upper Canada in the early nineteenth century.

References Cited

- Ackerman, Eric G.
1991 Economic Means Index: A Measure of Social Status in the Chesapeake, 1690-1815. *Historical Archaeology* 25(1):26-36.
- Adam, Graeme Mercer
1891 *Toronto Old and New*. Mail Printing Company, Toronto.
- Adams, William Hampton
2003 Dating Historic Sites: The Importance of Understanding Time Lag in the Acquisition, Curation, Use, and Disposal of Artifacts. *Historical Archaeology* 37(2):38-64.
- Adams, William Hampton and Sarah Jane Boling
1989 Status and Ceramics for Planters and Slaves on Three Georgia Coastal Plantations. *Historical Archaeology* 23(1):69-96.
- Andre, John
1971 *Infant Toronto as Simcoe's Folly*. Centennial Press, Toronto.
- Archaeological Services Inc.
2004 *A Master Plan of Archaeological Resources for the City of Toronto, Interim Report*. Archaeological Services Inc. Submitted to Heritage Preservation Services, Culture Division, City of Toronto. Copies available from Archaeological Services, Inc., Toronto.
- Armstrong, Douglas V.
2001 Attaining the Full Potential of Historical Archaeology. *Historical Archaeology* 35(2):9-13.
- Arthur, Eric
1986 *Toronto: No Mean City*. University of Toronto Press, Toronto.
- Banton, Michael
1965 *Roles: An Introduction to the Study of Social Relations*. Tavistock, London.
- Barker, A.J.
1976 *Redcoats*. Gordon and Cremonesi, London.
- Baughner, Sherene and Robert W. Venables
1987 Ceramics as Indicators of Status and Class in Eighteenth-Century New York. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 31-53. Plenum Press, New York.

- Benn, Carl
 1989 The Military Context of the Founding of Toronto. *Ontario History* 81(4):303-322.
- 1992 The Officers' Brick Barracks and Mess Establishment, Architectural Report. Manuscript on file, Research Division, Halifax Defence Complex, Halifax, Nova Scotia.
- 1993 *Historic Fort York, 1793-1993*. Natural Heritage/Natural History, Toronto.
- Bittman, Bente and Gerda Alcaide
 1984 Historical Archaeology in Abandoned Nitrate "Oficinas" in Northern Chile: A Preliminary Report. *Historical Archaeology* 18(1):52-75.
- Bottero, Wendy
 2005 *Stratification: Social Division and Inequality*. Routledge, London.
- Bradford, Robert D.
 1988 *Historic Forts of Ontario*. Mika Publishing, Belleville.
- Bragdon, Kathleen Joan
 1981 Occupational Differences Reflected in Material Culture. *Northeast Historical Archaeology* 10:27-39.
- Brenner, Bonnie Lee A. and Gregory G Monks
 2002 Detecting Economic Variability in the Red River Settlement. *Historical Archaeology* 36(2):18-49.
- Brereton, J.M.
 1985 *A Guide to the Regiments and Corps of the British Army on the Regular Establishment*. Bodley Head, London.
- Brighton, Stephen A.
 2001 Prices that Suit the Times: Shopping for Ceramics at The Five Points. *Historical Archaeology* 35(3):16-30.
- Brown, Donald A.
 1988 Fort York Archaeology Programme 1987-1988, Excavation and Preliminary Analysis Report: 1. The Officers' Brick Barracks; 2. Testing for Government House; 3. Testing for an 1814 Barracks in the Southwest Bastion. Manuscript on file, City of Toronto, Toronto.
- Brown, Duncan H.
 1999 Class and Rubbish. In *Historical Archaeology: Back From the Edge*, edited by Pedro Paulo A. Funari, Martin Hall, and Siân Jones, pp. 151-163. Routledge, London.

- Brown, Gregory J. and Joanne Bowen
 1998 Animal Bones from the Cross Street Back Lot Privy. *Historical Archaeology* 32(3):72-80.
- Burley, David V.
 1989 Function, Meaning and Context: Ambiguities in Ceramic Use by the *Hivernant* Métis of the Northwestern Plains. *Historical Archaeology* 23(1):97-106.
- Busch, Jane
 1987 Second Time Around: A Look at Bottle Reuse. *Historical Archaeology* 21(1):67-80.
- Cannon, Richard
 1848 *Historical Record of the Fifteenth, or, the Yorkshire East Riding, Regiment of Foot*. Parker, Furnivall, and Parker, London.
 1852 *Historical Record of the Seventy-First Regiment, Highland Light Infantry*. Parker, Furnivall, and Parker, London.
- Careless, J.M.S.
 1984 *Toronto to 1918: An Illustrated History*. James Lorimer, Toronto.
- Cary, Henry
 2003 Early Works: Preliminary Glimpses of the First Military Complex at Point Henry, Kingston, Ontario, 1812-1827. *Ontario Archaeology* 76:4-22.
- Cary, Henry, Charles Bradley, Robert Garcia, Joseph Last, Jonathan Moore, Stacey Taylor, and Mike Teal
 2005 Archaeology at Fort Henry: The First Fort and Redoubt. Manuscript on file, Parks Canada, Ontario Service Centre, Cornwall, Ontario.
- Chant, Christopher
 1988 *The Handbook of British Regiments*. Routledge, London.
- Chartrand, René
 1998 *British Forces in North America 1793 - 1815*. Men-at-Arms No. 319. Osprey, New York.
- Clark, Lynn
 1987 Gravestones: Reflectors of Ethnicity or Class? In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 383-395. Plenum Press, New York.

- Cleland, Charles E.
2001 Historical Archaeology Adrift? *Historical Archaeology* 35(2):1-8.
- Collard, Elizabeth
1984 *Nineteenth-Century Pottery and Porcelain in Canada*. 2nd edition. McGill-Queen's University Press, Kingston and Montreal.
- Counihan, Carole M.
1999 *The Anthropology of Food and Body: Gender, Meaning, and Power*. Routledge, London.
- Coysh, A.W.
1970 *Blue and White Transfer Ware 1780-1840*. David and Charles, London.
1974 *Blue and White Transfer Ware 1780-1840*. 2nd ed. David and Charles, London.
- Coysh, A.W. and R.K. Henrywood
1982 *The Dictionary of Blue and White Printed Pottery 1780-1880*, Vol I. Baron Publishing, Woodbridge, Suffolk.
1989 *The Dictionary of Blue and White Printed Pottery 1780-1880*, Vol. II. Baron Publishing, Woodbridge, Suffolk.
- Cripps, Beau Franklin
2003 The Garbage of Gentlemen: Investigations of a Military Refuse Midden from the Shirley Heights Officers' Quarters (PAH 127) Antigua, West Indies. Unpublished Master's thesis, Trent University, Peterborough, Ontario.
- Crist, Thomas A.
2005 Babies in the Privy: Prostitution, Infanticide, and Abortion in New York City's Five Points District. *Historical Archaeology* 39(1):19-46.
- Crow, Graham
1997 *Comparative Sociology and Social Theory: Beyond the Three Worlds*. St. Martin's Press, New York.
- Cumberland, Barlow
1913 *The Battle of York*. William Briggs, Toronto.
- Davies, Peter
2005 Space and Structure at an Australian Timber Camp. *Historical Archaeology*. 39(4):59-72.

- De Cunzo, Lu Ann
 1987 Adapting to Factory and City: Illustrations from the Industrialization and Urbanization of Paterson, New Jersey. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 261-295. Plenum Press, New York.
- Deetz, James
 1977 *In Small Things Forgotten: The Archaeology of Early American Life*. Doubleday, New York.
- 1990 Landscapes as Cultural Statements. Prologue in *Earth Patterns: Essays in Landscape Archaeology*, William M. Kelso and Rachel Most, editors, pp. 1-4. University Press of Virginia, Charlottesville.
- Delle, James A.
 1999 The Landscapes of Class Negotiation on Coffee Plantations in the Blue Mountains of Jamaica: 1790-1850. *Historical Archaeology* 33(1):136-158.
- Dietler, Michael and Ingrid Herbich
 2001 Feast and Labor Mobilization. In *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 115-143. Smithsonian Institution Press, Washington.
- Dietz, Peter
 1990 *The Last of the Regiments: Their Rise and Fall*. Brassey's, London.
- Drakard, David and Paul Holdway
 2002 *Spode Transfer Printed Ware 1784-1833*. Antique Collectors' Club, Woodbridge, Suffolk.
- Drucker, Lesley M.
 1981 Socioeconomic Patterning at an Undocumented Late 18th Century Low Country Site: Spiers Landing, South Carolina. *Historical Archaeology* 15(2):58-68.
- du Toit Allsop Hillier
 2001 *Fort York and Garrison Common: Parks and Open Space Design and Implementation Plan*. du Toit Allsop Hillier. Submitted to City of Toronto. Copies available from Friends of Fort York and Garrison Common.
- Ewen, Charles R.
 1986 Fur Trade Archaeology: A Study of Frontier Hierarchies. *Historical Archaeology* 20(1):15-28.

- Fairbanks, Charles H.
1984 The Plantation Archaeology of the Southeastern Coast. *Historical Archaeology* 18(1):1-14.
- Farry, Andrew
2005 Regulars and “Irregulars”: British and Provincial Variability among Eighteenth-Century Military Frontiers. *Historical Archaeology* 39(2):16-32.
- Ferris, Neal and Ian Kenyon
1983 There Was an Englishman, a Scotsman, and an Irishman... *Kewa* 83(4):2-12.
- Fitts, Robert K.
1999 The Archaeology of Middle-Class Domesticity and Gentility in Victorian Brooklyn. *Historical Archaeology* 33(1):39-62.
- Forrest, Denys
1973 *Tea for the British*. Chatts and Windus, London.
- Frank, Susan
1982 *Glass and Archaeology*. Academic Press, London.
- Gagnault, Lucille
2006 The Sizing Discussion, Part II. *Transferware Collectors Club Bulletin* 8(1):10.
- Garman, James C. and Paul A. Russo
1999 “A Disregard of Every Sentiment of Humanity”: The Town Farm and Class Realignment in Nineteenth-Century Rural New England. *Historical Archaeology* 33(1):118-135.
- Garrow, Patrick H.
1987 The Use of Converging Lines of Evidence for Determining Socioeconomic Status. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 217-231. Plenum Press, New York.
- Geeson, Jean Earle
1906 *The Old Fort at Toronto, 1793-1906*. Office of the Minister of Agriculture, Ottawa.
- Gerrard, Richard H.
1993 Beyond Crossmends: Stratigraphic analysis and the content of historic artifact assemblages on urban sites. In *Practices of Archaeological Stratigraphy*, edited by Edward C. Harris, Marley R. Brown III, and Gregory J. Brown, pp. 229-249. Academic Press, London.

- Glassie, Henry H.
1975 *Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts*. University of Tennessee Press, Knoxville.
- Godden, Geoffrey A.
1974 *British Pottery: An Illustrated Guide*. Barrie and Jenkins, London.
- Goody, Jack
1982 *Cooking, Cuisine and Class: A Study in Comparative Sociology*. Cambridge University Press, Cambridge.
- Gordon, Milton Myron
1958 *Social Class in American Sociology*. Duke University Press, Durham, North Carolina.
- Grabb, Edward G.
2002 *Theories of Social Inequality*. 4th ed. Harcourt, Toronto.
- Gremillion, Kristen J.
2002 Archaeobotany at Old Mobile. *Historical Archaeology* 36(1):117-128.
- Grusky, David B. And Ravi Kanbur
2006 Introduction: the Conceptual Foundations of Poverty and Inequality Measurement. In *Poverty and Inequality*, edited by David B. Grusky and Ravi Kanbur, pp. 1-29. Stanford University Press, Stanford, California.
- Gusset, Gérard
1980 *Stoneware: White Salt-Glazed, Rhenish and Dry Body*. History and Archaeology No. 38. Parks Canada, Ottawa.
- Hall, Martin and Stephen W. Silliman
2006 Introduction: Archaeology of the Modern World. In *Historical Archaeology*, edited by Martin Hall and Stephen W. Silliman, pp. 1-19. Blackwell Studies in Global Archaeology 9. Blackwell, Malden, Massachusetts.
- Hannon, Leslie F.
1969 *Forts of Canada*. McLelland and Stewart, Toronto.
- Hathaway, Ernest Jackson
1934 *The Story of the Old Fort at Toronto*. Macmillan, Toronto.
- Heberling, Paul M.
1987 Status Indicators: Another Strategy for Interpretation of Settlement Pattern in a Nineteenth-Century Industrial Village. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 199-216. Plenum Press, New York.

- Heitzmann, Roderick J.
 2000 Class and Status at the Bar U Ranch: The Archaeology of Early Ranching in Alberta. In *The Entangled Past: Integrating History and Archaeology – Proceedings of the 30th Annual Chacmool Conference*, edited by M. Boyd, J.C. Erwin, and M. Hendrickson, pp. 302-311. Archaeological Association of the University of Calgary, Calgary.
- Hitsman, J. Mackay
 1965 *The Incredible War of 1812*. University of Toronto Press, Toronto.
- Holt, Cheryl A.
 1989 Plants, Humans, and Culture: An Edible Model of Consuming Behavior. *Historical Archaeology* 25(2):46-61.
- Hounsom, Eric Wilfrid
 1970 *Toronto in 1810*. Ryerson Press, Toronto.
- James, R. Scott
 1990 1987 Fort York Archaeology Project. *Annual Archaeological Report, Ontario (New Series)* 1:41-43.
- Jones, Olive R. and E. Ann Smith
 1985 *Glass of the British Military 1755-1820*. Parks Canada, Ottawa.
- Jones, Olive and Catherine Sullivan
 1989 *The Parks Canada Glass Glossary: for the Description of Containers, Tableware, Flat Glass, and Closures*. Parks Canada, Ottawa.
- Kapches, Mima
 1980 Wall Trenches on Iroquoian Sites. *Archaeology of Eastern North America* 8:98-105.
- 1990 Backyard Archaeology on the Ancient Beaten Paths of Toronto. *Royal Ontario Museum Archaeological Newsletter, Series II*, 40:1-4.
- Keating, Elizabeth
 2000 Moments of Hierarchy: Constructing Social Stratification by Means of Language, Food, Space, and the Body in Pohnpei, Micronesia. *American Anthropologist* 102(2):303-320.
- Kenyon, Ian
 1980 Nineteenth Century Notes: Window Glass Thickness. *Kewa* 80(2).
- 1982 A Note on the Decline and Fall of Blue and Green Edged Ceramics. *Kewa* 82(5):7

- 1985 A History of Ceramic Tableware in Ontario, 1780-1840. *Arch Notes* 85(3):41-57.
- 1987a Nineteenth Century Notes: Ceramic Cups. *Kewa* 87(7).
- 1987b A History of Ceramic Tableware in Ontario, 1795-1890: Historical Date Ranges. *Arch Notes* 87(6):22-25.
- 1988a A History of Ceramic Tableware in Ontario: Quantitative Trends in Plates. *Arch Notes* 88(2):5-8.
- 1988b A History of Ceramic Tableware in Ontario: Quantitative Trends in Teaware. *Arch Notes* 88(6):7-9.
- 1992 Spilled Ink and Broken Cups: The Distribution and Consumption of Ceramic Tableware in Upper Canada, 1800-1840. *Kewa* 92(4):2-20.
- Kenyon, Thomas
- 1983 Nineteenth Century Notes: Table Knives and Forks. *Kewa* 83(2).
- 1984 Nineteenth Century Notes: Clay Tobacco Pipes with Marked Stems. *Kewa* 84(8).
- King, Thomas B.
- 1987 *The History of Glass in Canada*. Boston Mills Press, Erin, Ontario.
- Klein, Terry H.
- 1991 Nineteenth-Century Ceramics and Models of Consumer Behavior. *Historical Archaeology* 25(2):77-91.
- Konrad, Victor A.
- 1973 *The Archaeological Resources of the Metropolitan Toronto Planning Area: Inventory and Prospect*. Discussion Paper No. 10. Department of Geography, York University, Toronto.
- Kowal, Leo B.
- 1960 Flat-Drawn Glass. In *Manufacturing Processes in Canada*, edited by K.C. Livingston and T.C. Graham, pp. 86-108. University of Toronto Press, Toronto.
- Last, Joseph H.
- 1996 The Power of the Privy: Mediating Social Relations on a 19th Century British Military Site. Unpublished Master's thesis, College of William and Mary, Williamsburg, Virginia. Parks Canada, Ontario Service Centre, Cornwall, Ontario.

- 1999 Military Sites Archaeology, Parks Canada, Ontario Service Centre. *Annual Archaeological Report, Ontario (New Series)* 10:88-101.
- 2000 Military Sites Archaeology, Parks Canada, Ontario Service Centre:1999. *Annual Archaeological Report, Ontario (New Series)* 11:123-136.
- 2001 Military Sites Archaeology, Parks Canada, Ontario Service Centre:2000. *Annual Archaeological Report, Ontario (New Series)* 12:106-123.
- Lawrence, Susan
- 2003 Exporting Culture: Archaeology and the Nineteenth-Century British Empire. *Historical Archaeology* 37(1):20-33.
- LeeDecker, Charles H.
- 1991 Historical Dimensions of Consumer Research. *Historical Archaeology* 25(2):30-45.
- LeeDecker, Charles H., Terry H. Klein, Cheryl A. Holt, and Amy Friedlander
- 1987 Nineteenth-Century Households and Consumer Behavior in Wilmington, Delaware. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 233-259. Plenum Press, New York.
- Leibowitz, Joan
- 1985 *Yellow Ware: The Transitional Ceramic*. Schiffer, West Chester, Pennsylvania
- .
- Leone, Mark
- 1987 Rule by Ostentation: The Relationship Between Space and Sight in 18th Century-American Landscape Architecture in the Chesapeake Region of Maryland. In *Method and Theory for Activity Area Research*, edited by Susan Kent, pp. 604-633. Columbia University Press, New York.
- Lewis, Griselda
- 1969 *A Collector's History of English Pottery*. Viking Press, New York.
- Little, Wilfred Laurence
- 1969 *Staffordshire Blue: Underglaze Blue Transfer-Printed Earthenware*. Crown Publishers, New York.
- Lloyd, John
- 1987 From Differentiation to Individuation: A Look at the Encounter Process. *The British Journal of Sociology* 38(3):351-372.
- Lockett, T.A.
- 1972 *Davenport Pottery and Porcelain 1794-1887*. David and Charles, Whitstable.

- Lyman, R. Lee
1987 On Zooarchaeological Measures of Socioeconomic Position and Cost-Efficient Meat Purchases. *Historical Archaeology* 21(1):58-66.
- McBride, Stephen W. and Kim A. McBride
1987 Socioeconomic Variation in a Late Antebellum Southern Town: The View from Archaeological and Documentary Status. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 143-161. Plenum Press, New York.
- McGrew, J. Chapman, Jr., and Charles B. Monroe
2000 *An Introduction to Statistical Problem Solving in Geography*. 2nd edition. McGraw Hill, Boston.
- McGuire, Randall H.
1992 *A Marxist Archaeology*. Academic Press, San Diego.
- Majewski, Teresita and Michael J. O'Brien
1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. In *Advances in Archaeological Method and Theory*, vol. 11, edited by Michael B. Schiffer, pp. 97-209. Academic Press, New York.
- 1989 Practical Data-Base Construction for Historical-Period Ceramic Analysis. In *Analysis and Publication of Ceramics: The Computer Data-Base in Archaeology*, edited by J.A. Blakely and W.J. Bennett Jr., pp. 81-97. BAR International Series 551. British Archaeological Reports, Oxford.
- Mead, George H.
1963 *Mind, Self and Society*. University of Chicago Press, Chicago.
- Meyers, Allan D.
2005 Material Expressions of Social Inequality on a Porfirian Sugar Hacienda in Yucatán, Mexico. *Historical Archaeology* 39(4):112-137.
- Miller, J. Jefferson, II
1974 *English Yellow-Glazed Earthenware*. Smithsonian Institution Press, Washington.
- Miller, George L.
1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:1-40.
- 1991 A Revised Set of CC Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* 25(1):1-25.

- Miller, George L. and Silas D. Hurry
1983 Ceramic Supply in an Economically Isolated Frontier Community: Portage County of the Ohio Western Reserve 1800-1825. *Historical Archaeology* 17(2):80-92.
- Milne, C. and Pamela J. Crabtree
2001 Prostitutes, a Rabbi, and a Carpenter – Dinner at the Five Points in the 1830s. *Historical Archaeology* 35(3):31-48.
- Monks, Gregory G.
1992 Architectural Symbolism and Non-Verbal Communication at Upper Fort Garry. *Historical Archaeology* 26(2):37-57.
- 1999 On Rejecting the concept of socio-economic status in historical archaeology. In *Historical Archaeology: Back From the Edge*, edited by Pedro Paulo A. Funari, Martin Hall, and Siân Jones, pp. 204-216. Routledge, London.
- Morrison, Beverly A.
1991 The Story Site: An Early Nineteenth Century Homestead in Brant County, Ontario. *Kewa* 91(2):2-26.
- Mulvany, Charles Pelham
1884 *Toronto: Past and Present. A Handbook of the City*. W.E. Caiger, Toronto.
- Newlands, David L.
1979 The Fort York Excavations: Clay Tobacco Pipe Fragments. *The York Pioneer* 74(2):25-29.
- Nickolai, Carol A.
2003 Class and Gender in Nineteenth-Century Rural Michigan: The Merriman-Sharp Hillside Farm. *Historical Archaeology* 37(4):69-83.
- Noël Hume, Ivor
1970 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York
- O'Brien, Michael J. and Teresita Majewski
1989 Wealth and Status in the Upper South Socioeconomic System of Northeastern Missouri. *Historical Archaeology* 23(2):60-95.
- O'Donovan, Maria and LouAnn Wurst
2001-2002 Living on the Edge: Consumption and Class at the Keith Site. *Northeast Historical Archaeology* 30-31:73-84.

- Orser, Charles E., Jr.
 1987 Plantation Status and Consumer Choice: A Materialist Framework for Historical Archaeology. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 121-137. Plenum Press, New York.
- 1996 *A Historical Archaeology of the Modern World*. Plenum Press, New York.
- Ortner, Sherry B.
 2006 *Anthropology and Social Theory: Culture, Power, and the Acting Subject*. Duke University Press, Durham.
- Orton, Clive, Paul Tyers, and Alan Vince
 1993 *Pottery in Archaeology*. Cambridge University Press, Cambridge.
- Otto, John Solomon
 1984 *Cannon's Point Plantation, 1794-1860: Living Conditions and Status Patterns in the Old South*. Academic Press, Orlando.
- Pacey, Antony
 1981 A History of Window Glass Manufacture in Canada. *APT Bulletin* 13(3):33-47.
- Pakulski, Jan
 2005 Foundations of a Post-Class Analysis. In *Approaches to Class Analysis*, edited by Erik Olin Wright, pp. 180-192. Cambridge University Press, Cambridge.
- Parrington, Michael, Helen Schenck, and Jacqueline Thibaut
 1984 The Material World of the Revolutionary War Soldier at Valley Forge. In *The Scope of Historical Archaeology*, edited by David G. Orr and Daniel G. Crozier, pp. 125-161. Temple University Press, Philadelphia.
- Peña, Elizabeth S. and Jacqueline Denmon
 2000 The Social Organization of a Boardinghouse: Archaeological Evidence from the Buffalo Waterfront. *Historical Archaeology* 34(1):79-96.
- Perodie, James R.
 2001 Feasting for Prosperity. In *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 185-214. Smithsonian Institution Press, Washington.
- Plousos, Suzanne, Helen Dunlop, and Peter Sattelberger
 1998 Material Culture Research on Archaeological Collections: Parks Canada, Ontario Service Centre. *Annual Archaeological Report, Ontario (New Series)* 9:3-6.

- Purser, Margaret
1991 Consumption as Communication in Nineteenth-Century Paradise Valley, Nevada. *Historical Archaeology* 26(3):105-116.
- Rapoport, Tamar and Reueven Kahane
1988 Informal Socialization Agencies and Role Development. *Sociological Inquiry* 58(1):49-74.
- Reid, Stuart
2002 *Redcoat Officer 1740-1815*. Warrior 42. Osprey, New York.
- Robinson, Percy James
1933 *Toronto During the French Régime: A History of the Toronto Region from Brûlé to Simcoe, 1615-1793*. Ryerson Press, Toronto.
- Roenke, Karl G.
1978 Flat Glass: Its Use as a Dating Tool for Nineteenth Century Archaeological Sites in the Pacific Northwest and Elsewhere. *Northwest Anthropological Research Notes Memoire No. 4, Vol. 12, No. 2, Pt. 2*, Moscow, Idaho.
- Ross, Alice
1993 Health and Diet in 19th Century America: A Food Historian's Point of View. *Historical Archaeology* 27(2):42-56.
- Rotman, Deborah L. and Michael S. Nassaney
1997 Class, Gender, and the Built Environment: Deriving Social Relations from Cultural Landscapes in Southwest Michigan. *Historical Archaeology* 31(2):42-62.
- Samford, Patricia M.
1997 Response to a Market: Dating English Underglaze Transfer-Printed Wares. *Historical Archaeology* 31(2):1-30.
- Savage, Michael
2000 *Class Analysis and Social Transformation*. Open University Press, Buckingham.
- Sayer, Andrew
2005 *The Moral Significance of Class*. Cambridge University Press, Cambridge.
- Scadding, Henry
1873 *Toronto of Old: Collections and Recollections Illustrative of the Early Settlement and Social Life of the Capital of Ontario*. Adam, Stevenson, and Co., Toronto.

- 1878 *Toronto's First Germ (Fort Toronto): Some Explanatory Notes in Relation Thereto*. Toronto.
- Scott, Elizabeth M.
2001 Food and Social Relations at Nina Plantation. *American Anthropologist* 103(3):671-691.
- Seifert, Donna J.
2005 Archaeology in Sin City. *Historical Archaeology* 39(1):1-3.
- Shephard, Steven Judd
1987 Status Variation in Antebellum Alexandria: An Archaeological Study of Ceramic Tableware. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 163-198. Plenum Press, New York.
- Slotkin, J.S.
1950 *Social Anthropology: The Science of Human Society and Culture*. Macmillan Company, New York.
- Snyder, Jeffrey B.
1994 *Historic Flow Blue*. Schiffer, Atglen, Pennsylvania.
- South, Stanley
1978 Pattern Recognition in Historical Archaeology. *American Antiquity* 43(2):223-230.
- Spencer-Wood, Suzanne M.
1987 Introduction. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 1-24. Plenum Press, New York.
- Spencer-Wood, Suzanne M. and Scott D. Heberling
1984 Ceramics and Socio-Economic Status of the Green Family, Windsor, Vermont. *Northeast Historical Archaeology* 13:33-52.
- 1987 Consumer Choices in White Ceramics: A Comparison of Eleven Early Nineteenth-Century Sites. In *Consumer Choice in Historical Archaeology*. Edited by Suzanne M. Spencer-Wood, pp. 55-84. Plenum Press, New York.
- Spencer-Wood, Suzanne and Richard Julian Riley
1981 The Development of an Urban Socio-Economic Model for Archaeological Testing. *Northeast Historical Archaeology* 10:40-50.
- Spiers, Edward M.
1980 *The Army and Society 1815-1914*. Longman Group, London.

- Spittal, David (compiler)
2004 Regiments and Corps at Fort York – Periods of Service. Electronic document, <http://www.fortyork.ca/History%20Files/Regiments.pdf>, accessed July 21, 2007.
- Spittal, David A.
1996 Archaeology at Historic Fort York. *Annual Archaeological Report, Ontario (New Series)* 7:69-72.
- Springate, Megan Elizabeth
1997 Keeping it Cool: Investigations Around the Benares Icehouse, Mississauga, Ontario. Unpublished Master's thesis, Trent University, Peterborough, Ontario.
- Stebbins, Susan
1996 Roles of Iroquois Women. In *The Construction of Gender and the Experience of Women in American Indian Societies*, pp. 81-99. Newberry Library.
- Stine, Linda France
1990 Social Inequality and Turn-of-the-Century Farmsteads: Issues of Class, Status, Ethnicity, and Race. *Historical Archaeology* 24(4):37-49.
- Stromberg, Richard
1990 1988 Fort York Archaeology Project. *Annual Archaeological Report, Ontario (New Series)* 1:85-86.
- Sussman, Lynne
1977 Changes in Pearlware Dinnerware, 1780-1830. *Historical Archaeology* 11:105-111.
- 1978 British Military Tableware, 1760-1830. *Historical Archaeology* 12:93-104.
- 1985 *The Wheat Pattern: An Illustrated Survey*. Parks Canada, Ottawa.
- 1997 *Mocha, Banded, Cat's Eye, and Other Factory-Made Slipware*. Studies in Northeast Historical Archaeology, No. 1. Boston University, Boston.
- The Friends of Fort York and Garrison Common
2000 *Fort York: Setting It Right*. Copies available from The Friends of Fort York and Garrison Common, Toronto.
- Triggs, John R.
2005 Social Flux at the Naval Establishment at Penetanguishene, Lake Huron, 1817-1834. *Historical Archaeology* 39(2):105-135.

- Triggs, John R. and Helen M. Booth
 1994 Dundurn Castle Garden Archaeology. *Annual Archaeological Report, Ontario* (New Series) 5:159-166.
- Turnbaugh, William and Sarah Peabody Turnbaugh
 1977 Alternative Applications of the Mean Ceramic Date Concept for Interpreting Human Behavior. *Historical Archaeology* 11:90-104.
- Vaccarelli, Vito
 1996 Prosperity, Adversity and the Appearance of Worth; Socio-Economic Status and the MacDonells of Pointe Fortune Ontario, 1813-1881. Unpublished Master's thesis, Trent University, Peterborough, Ontario.
- 1997 An Archaeological Narrative of York's Cultural Landscape, 1793-1998. *Ontario Archaeology* 64:81-111.
- Valentine, David
 2002 We're "Not about Gender": The Uses of "Transgender". In *Out in Theory: The Emergence of Lesbian and Gay Anthropology*, edited by Ellen Lewin and William L. Leap, pp. 222-245. University of Illinois Press, Chicago.
- van Rensselaer, Susan
 1966 Banded Creamware. *Antiques* (September):337-341.
- Vincent, Elizabeth
 1993 *Substance and Practice: Building Technology and the Royal Engineers in Canada*. Studies in Archaeology Architecture and History. Parks Canada, Ottawa.
- Wall, Diana diZerega
 1991 Sacred Dinners and Secular Teas: Constructing Domesticity in Mid-19th-Century New York. *Historical Archaeology* 25(4):69-81.
- 1999 Examining Gender, Class, and Ethnicity in Nineteenth Century New York City. *Historical Archaeology* 33(1):102-117.
- Webb, Catherine
 1990 1989 Fort York Archaeology Project. *Annual Archaeological Report, Ontario* (New Series) 1:137-138.
- 1991 Fort York Archaeology Project: 1990. *Annual Archaeological Report, Ontario* (New Series) 2:14-18.
- 1992 Fort York Archaeology Programme 1990: Excavation and Preliminary Analysis Report, Volume I. Manuscript on file, Fort York, Toronto.

- 1997 1996 Archaeological Excavations of the Interior and Exterior of the 1813 Blockhouse No. 1 at Historic Fort York, Toronto. *Annual Archaeological Report, Ontario* (New Series) 8:55-59.
- Weber, Max
1999 *Essays in Economic Sociology*, edited by Richard Swedberg. Princeton University Press, Princeton, New Jersey.
- Wheeler, Kathleen L.
1999 Contributions of Women to the Acquisition, Maintenance, and Discard of Portable Estates. *Northeast Historical Archaeology* 28:41-56.
- Wilk, Richard R.
1999 "Real Belizean Food": Building Local Identity in the Transnational Caribbean. *American Anthropologist* 101(2):244-255.
- Williams, Petra and Marguerite R. Weber
1986 *Staffordshire II, Romantic Transfer Patterns*. Fountain House East, Jeffersontown, Kentucky.
- Wilson, John P. and Linda D. Southwood
1976 *Fort George on the Niagara: An Archaeological Perspective*. History and Archaeology No. 9. Parks Canada, Ottawa.
- Wright, Erik Olin
1997 *Class Counts: Comparative Studies in Class Analysis*. Cambridge University Press, Cambridge.
2005 Conclusion: If "Class" is the Answer, What is the Question? In *Approaches to Class Analysis*, edited by Erik Olin Wright, pp. 180-192. Cambridge University Press, Cambridge.
- Wurst, LouAnn
1999 Internalizing Class in Historical Archaeology. *Historical Archaeology* 33(1):7-21.
2006 A Class All Its Own: Explorations of Class Formation and Conflict. In *Historical Archaeology*, edited by Martin Hall and Stephen W. Silliman, pp. 190-206. Blackwell, London.
- Wurst, LouAnn and Robert K. Fitts
1999 Introduction: Why Confront Class? *Historical Archaeology* 33(1):1-6.

Yamin, Rebecca

2005 Wealthy, Free, and Female: Prostitution in Nineteenth-Century New York.
Historical Archaeology 39(1):4-18.

Yentsch, Anne

1990 Minimum Vessel Lists as Evidence of Change in Folk and Courtly Traditions
of Food Use. *Historical Archaeology* 24(3):24-53.

Appendix I – Data Catalogue

The primary aim of this section is to allow the reader to understand the manner in which identifications were made in the course of cataloguing and analysis of the Operation 1FY3 collection. The following basically mirrors the organization and layout of the computer database constructed for this project, with very few exceptions. Each of the sections below corresponds with one or more of the fields used in the database, and explains identification and measurement procedures. In many of the database fields below, one of the available options was ‘Unanalyzed,’ which is used to designate those artifact attributes which are either unidentifiable by the analyst but may be identified by a more experienced researcher, or are entirely undiagnostic. While Jones and Sullivan (1989:9-10) argue that differentiating between the two is critical, my lack of experience with historic artifacts made the distinction impractical. It is also worth noting that some categories refine designations made in other fields, most notably the material category (below). Some of the options cannot be further refined, however, and are thus given no additional consideration. For example, the material ball clay is not included under the class heading because it is not, at present, separated into various classes like the material ceramic.

Provenience

Operation, suboperation (unit) and lot (level) from which the artifact was excavated, e.g. 1FY3B16 indicates that the item originated in Operation 1FY3, was from suboperation B, lot 16.

Catalogue Number

Unique artifact identification number following provenience; the number assigned increases in whole increments from the last highest, e.g. 934 followed by 935, 936, etc. Where artifacts from a particular context had been previously assigned a catalogue number, it was kept the same, while uncatalogued artifacts were given a new number following the highest previously assigned number.

Material

This is the predominant material from which the artifact is made. There are currently six possibilities.

Ball Clay

A special form of white clay, often mistakenly referred to as kaolin, which has been fired at a low temperature, is typically unglazed, and from which pipes were commonly made (Walker 1977, 1983:2)

Ceramic

Inorganic, non-metallic object composed predominantly of clay which has been fired at a sufficient temperature to make it hard.

Faunal

Any organic remains belonging to a member of the Kingdom Animalia.

Glass

A hardened form of melted silica to which were frequently added a variety of metals acting as melting and bonding catalysts, and from which a wide variety of objects have been created (Jones and Sullivan 1989:10)

Metal

Inorganic compound made of atomic elements belonging to the 'metal' group of the periodic table, also includes alloys.

Other

Any remains that are not adequately described by the above categories.

Class

This category acts as a refinement of the material category in different ways, depending on the material from which the artifact was fabricated. These are described below, with definitions of the various classes identified in the collection.

Ceramic

Refinement of ceramic by 'ware type.' The possible 'ware types,' however, are based on observable variations in physical characteristics related to degree of vitrification, rather than being based on fictive ware types like pearlware and creamware, which have been created by modern collectors and hence have little emic value (Majewski and O'Brien 1987:105-107; Miller 1980:2). The terms used here, then, are not meant to indicate ware types as much as to be codes for the degree of vitrification. It is possible to infer these more commonly used ware types, however, through a combination of this category with colour and glaze colour (below), in order to facilitate comparison

with other collections and published accounts. While accurate measurement of the degree of vitrification requires highly advanced techniques involving water absorption, there are other means by which to determine a rough estimate. Jelks (1973:59) used a tongue test, whereby those sherds that stick to the tongue are considered to be earthenware, relying on variation in porosity. I have opted for a thumbnail test; though equally subjective and prone to individual variance, this approach takes advantage of differences in texture that occur as a result of prolonged firing at high temperatures. When the thumbnail (though presumably any fingernail would suffice) is rubbed perpendicular to the broken sherd edge, the result feels similar to either a fine sandstone or a harder, more compact rock, like basalt or silicified mudstone. The latter, sensibly, is suggestive of the ceramic having experienced some vitrification, and thus belongs to either the stoneware or porcelain categories. In order to differentiate between the two, a second test is performed. When held up to a light, porcelain is translucent, while stoneware is opaque. This simple difference is valid a majority of the time, but does not take into account differences in thickness, as in the case of porcelain that may be opaque due to being very thick. This cannot be accounted for without more precise techniques. As crude as the approach undoubtedly is, it permits the analysis of a large number of sherds in a comparatively short amount of time. Earthenware is divided into two additional categories, coarse and refined, differentiated by the roughness of the fracture, such that a 'chunkier' fracture is assigned to coarse earthenware. Coarse earthenware is typically made of a reddish clay, though some red ceramics with a smoother fracture and finer fabric may be assigned to refined earthenware. In addition, inclusions in the fabric are typically only found in coarse earthenware.

Coarse earthenware. Earthenware with a rough fracture, is porous, opaque, usually a reddish colour, and may contain inclusions.

Porcelain. Usually nearly completely vitrified (feels like metamorphosed stone when thumbnail tested), translucent.

Refined earthenware. Earthenware which breaks with a smooth fracture, non-vitrified (feels like sandstone when thumbnail tested), opaque, lacks inclusions.

Stoneware. Stoneware is usually only semi-vitrified (feels like metamorphosed stone when thumbnail tested), opaque.

Faunal

Animal remains are further subdivided generally by taxonomic Class (Mammalia, Aves, and Gastropoda). Classes of fish and shellfish are each collapsed into a single class for the purposes of this identification. Eggshell is indicated in a separate category, as it is a specialized remain of the Aves class, possibly indicative of a different source of food.

Avian. Anything belonging to the taxonomic class Aves.

Eggshell. Specialized remains of eggs, usually from the Aves taxonomic class, and typically represented by thin, brittle fragments with a high calcium content.

Fish. Individual classes have not been identified, but should be feasible.

Mammal. Anything belonging to the class Mammalia.

Shellfish. Includes Crustacea and Bivalvia classes.

Snail. Anything belonging to the class Gastropoda.

Glass

Glass sherds are further refined based on physical features indicative of function, with the exception of the 'melted' subcategory, in which case a taphonomic process has

rendered its function indeterminate. Colour (i.e. metal), thickness, curvature, and identifiable components (e.g. bottle finish, wine glass stem) are considered.

Container. Any glass object that functioned as a container, meaning any of the various forms of bottles. All dark green/black sherds that have not been affected by extreme heat are put into this category, as this glass was used almost exclusively in the production of bottles (Jones and Sullivan 1989:14).

Melted. Glass that has been lightly heat modified (to differentiate from the other > burnt glass/slag/clinker category below) where the glass was made only plastic enough to have transformed its shape without modifying the fabric.

Other. This category subsumes any glass object that cannot be categorized as a container, tableware, or window, including beads and light bulbs.

Tableware. Any glass object that functioned as a component of a table setting, can include objects like glasses, plates, serving vessels, vases, etc. Any significantly sized (i.e. more than 3 cm.) colourless sherds with thickness of less than 1 mm. that are not evidently light bulbs or vials should be catalogued as tableware. Lamp or candle chimneys, fairly common glass artifacts used to funnel and diffuse smoke and light, have similar characteristics. At this point, none have been positively identified in the Operation 1FY3 collection, and so they are currently subsumed under this category pending further analysis and identification.

Window. Any flat glass lacking additional characteristics of a panel or case bottle is catalogued as a portion of a windowpane. They are usually colourless or blue-green.

Metal

Visual inspection of all metal artifacts was the only method used to differentiate between different types of metal, due to time constraints and the need to preserve the integrity of the metals for future analysis. Ferrous artifacts particularly have been heavily affected by corrosion, making more refined identification difficult.

Aluminum. Silver-coloured and ductile metal, typically in the form of foil. May be less ductile and more friable due to decay.

Asbestos. Fibrous metal typically in the form of insulation.

Copper. Any alloy dominated by copper metal where the only sign of oxidation is its green surface; modern pennies and copper wiring are examples.

Iron. Ferrous metal affected by corrosion.

Steel. Ferrous metal minimally affected by corrosion, likely indicating higher carbon content.

Other

Any artifact which does not fit into the other categories and is either too rare (e.g. crayon) or contains too little interpretative value (e.g. burnt glass/slag/clinker) to warrant its own class. Most of these are self-explanatory.

Brick. Used primarily in construction, bricks are typically reddish or brownish coarse fired clay, often with a heavy sand temper.

Burnt glass/slag/clinker. This catch-all subcategory includes any metal or glass artifact that has been significantly modified by heat such that its original form has been rendered indiscernible, and thus has little interpretative value beyond its distribution pattern.

Crayon. Coloured wax stick used in drawing, or construction, or by children.

Foil wrapper. A sheet of foil contained within cellophane, such as a candy wrapper.

Insulating tape. Typically a shiny black tape, plastic based, with limited conductive properties, used in electrical wiring.

Lithic, flint. Flaked stone tool, whether of indigenous or European manufacture.

Lithic, ground. Ground stone tool.

Lithic, slate. Unmodified slate, usually in the form of roofing tiles.

Mortar. The material used in construction as a buffer between bricks, sand-based with a binding agent like cement.

Plaster. Another product used in construction, plaster is gypsum that has been mixed with water and subsequently dried. It is softer than cement, and often used in building walls.

Plastic. A polymer-based synthetic product, which can take numerous forms. It is generally impermeable to liquids, and often malleable or plastic.

Plastic sheeting. Large transparent or semi-transparent sheets of flexible plastic, used most commonly in construction.

Rock, unmodified. Unmodified (and probably unutilized) stones are catalogued to avoid changing the nature of the collection, but may otherwise be ignored.

Rubber. Natural or synthetic hydrocarbon-based polymer with high degree of elasticity.

Wood. Any organic substance originating from the trunk of a tree, and only minimally modified. Examples include wood planks, beams, and barrels.

Colour

A subjective assessment of the primary colour of an artifact, where what is indicated by the colour differs by material. The artifact is placed on a white background, and the best descriptive option is chosen. No attempt to identify colour objectively is made because it has little relevance to the analysis of socioeconomic status. Colour names follow standard North American conventions.

Ceramic

Refers to the colour of the paste, rather than the surface, which can be affected by glaze colour, and hence is recorded in a separate field.

Black. Very dark charcoal gray to an intense solid black.

Blue. Light powder blue.

Buff. A sandy colour, darker than cream-coloured, not yet a brown. Very similar to gray-brown, but has more yellow.

Cream-coloured. Differs from white in slight yellowish tint imparted by the glaze, otherwise very light coloured paste.

Gray. A light gray colour similar to brushed steel.

Gray-brown. Similar to the colour of pewter, gray dominant with a hint of brown.

Red/brown/orange. An iron-rich fabric, encompasses a broad range of colours on the red end of the spectrum.

Red/brown/orange, light. Lighter variant of above.

White. Encompasses anything in the light off-white to light gray to pure white range, so long as it lacks a yellowish tinge.

Yellow. Light but distinct yellow colour, often referred to as cane ware or yellow ware (Kenyon 1987:25; Sussman 1997:77).

Glass

Colour in glass refers to the type and amount of metallic oxides present in the body, but has little more than descriptive utility, as production technology and techniques cannot be inferred from colour (Jones and Sullivan 1989:12-13). Nevertheless, some colours (e.g. dark green/black and opaque white) are almost exclusively associated with specific forms.

Amber. Honey to darker amber colours.

Blue-green, light. Aqua colour, mostly transparent.

Colourless. Range from very light colouring to completely colourless. I have chosen to refer to a sherd as colourless if the amount of colour visible in the broken transverse edge is insufficient to obscure dark writing on a light background, and is largely transparent.

Dark green/black. Commonly called "black glass," this actually represents a very dark opaque green, the major colour of liquor and mineral water bottles in the early nineteenth century (Jones and Sullivan 1989:14). See also the olive category below.

Electric blue. Deep cobalt blue colour, typically translucent.

Frosted. Glass that has had its surface treated by acid etching or sand blasting (Jones and Sullivan 1989:57-59). Not considered a decorative motif only if entire surface has been frosted, rather than in a particular pattern.

Green, dark. A dark, but translucent emerald green

Light blue. More blue than blue-green, light, similar to a teal.

Light green. Antique Coca Cola bottle green, more green than blue-green, light.

Olive. Related to the dark green/black category, but more translucent when viewed on light coloured surface.

Opaque blue. When very lightly heat modified, black glass may sometimes turn to an opaque milky blue colour; not an intentional manufacture process.

Opaque white. Opaque milky white colour, may look similar to porcelain.

Metal

Refers to colour of non-metallic portions of metal artifacts, e.g. on wires, plastic coated. Colour names follow standard North American socially accepted conventions, such as red, blue, green, black, and white.

Other

Dominant colour of material, e.g. a piece of red plastic with white lettering is considered red. Colour names follow standard North American socially accepted conventions, such as red, blue, green, black, and white.

Form

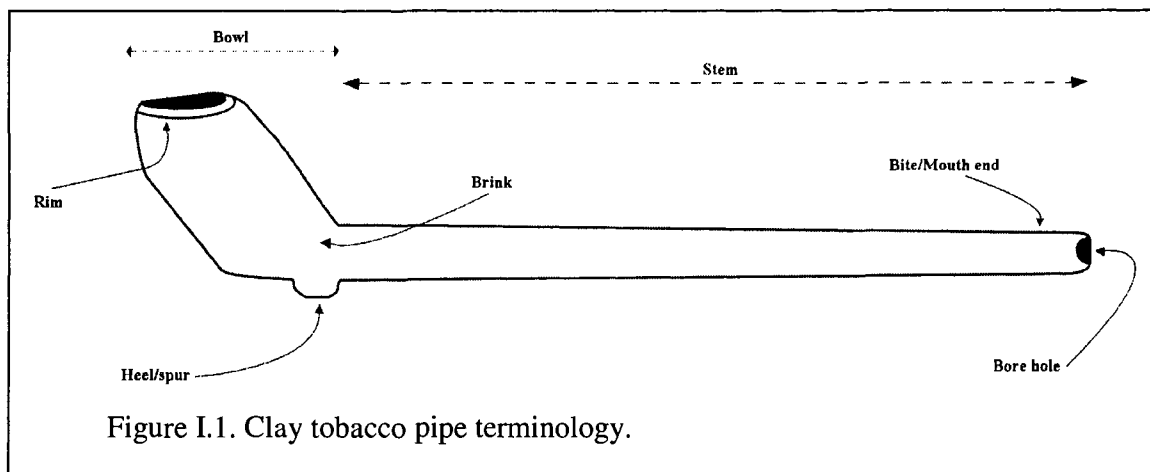
This is the identification of the inferred function of an object; most nineteenth century artifact forms are familiar and still in use in a similar form, thus should be easily recognized. Some significant differences are nevertheless worthy of note, as in the example of the saucer, which generally lacked a central depression meant to hold a cup and had steeper walls resembling a shallow bowl (Coysh and Henrywood 1982:322).

These differences relate to changes in use, where the saucer was often used as a vessel from which to drink tea in the early nineteenth century, rather than as a resting place for the cup (Coysh and Henrywood 1982:359). In many cases, there is a hierarchical order in the accuracy of the attribution, e.g. *Tableware* -> *Flatware* -> *Plate*. The lowest level discernible, based on the sherd, is chosen, such that a sherd which has the well, bilge, and nearly typical of a plate (Figure I.1) should be identified as such, even though it is equally attributable to both tableware and flatware.

Ball Clay

Only one form has been identified in the collection made of ball clay, the popular clay tobacco pipe.

Pipe. Includes both the bowl and stem of a smoking pipe (Figure I.1).



Ceramic

Identifications of form have been influenced by Sussman (1979).

Bowl. Steep walled vessel where depth is at least 2.5 cm.

Chamber pot. A specialized large hollowware vessel with rim diameter over 18 cm, usually hemmed or straight flare rim, height over 10 cm, with sides that typically expand away from the rim.

Container. Type of hollowware vessel with carinated shoulder and neck, like a blacking bottle.

Cup/mug. Works together with teacup/teabowl to identify tea and/or coffee related drinking vessels. Nearly vertical to vertical sides, rim diameter less than 10 cm., often decorated on both interior and exterior surfaces. Sherds that cannot be definitively identified as teacup/teabowl should be catalogued as cup/mug.

Figure. Decorative non-utilitarian object, frequently toys (e.g. dolls). Often made of parian.

Flatware. Any vessel without steeply angled sides, less than 3 cm. deep.

Hollowware. Any vessel with steeply angled sides, over 3 cm. deep.

Jug/ewer. Tall, open-mouthed hollowware vessel with handle and spout or snip for pouring liquids; rim is usually irregularly shaped.

Plate. Tableware vessel, which has a bilge (up to 2 cm. deep) and a marly (up to 3 cm. wide), with a rim diameter that ranges from 13 to 25 cm. (Sussman 1979:233).

Platter/dish. Any vessel whose intended use is in the serving, rather than consumption, of food, usually indicated by size (e.g. platters) or shape (e.g. sauceboat). May include lid. Very thickly potted sherds often can be attributed to this category.

Saucer. Depending on the period, a saucer was used either with or without a cup. In the early nineteenth century, they usually lack a central well, and have deep sides without a marly (Sussman 1979:233).

Table/teaware. Used as a catch-all for sherds with elements, thinness, or shape of either tableware or teaware, but of insufficient size for more refined identification.

Tableware. Any vessel related to the serving of a meal: plates, bowls, platters, serving dishes, etc.

Teacup/teabowl. Probably a drinking vessel that is usually larger than cup/mug, with rim diameter over 10 cm. Its sides are often more angled and less vertical than in a cup/mug.

Teapot. Specialized serving vessel for tea, with spout, open handle, and lid (Figure I.2).

Teaware. Vessels used in a tea service, including teapot, teacup, saucer, slop bowl, etc.

Toiletware. Any vessel related to the maintenance of hygienic conditions: ewer, chamber pot, soap dish, wash basin, etc. (Coysh and Henrywood 1982:365).

Glass

Most glass forms have been interpreted and identified following Jones and Sullivan (1989).

Bead. Small piece of glass, typically rounded with a hole in the centre, presumably to accommodate thread. Frequently used decoratively, hence often coloured.

Bottle. Used if specific type of bottle is uncertain; only use more specific categories (case, wine, and vial) if sherd contains two elements unique to that form.

Bottle, case. Characteristics include a square cross-section, short neck, indented base, and are usually dark green/black colour.

Bottle, wine. Characteristics include a two-part finish, indented base (pushup), cylindrical body, rounded and well-defined shoulder, dark green/black colour, and a long neck (Figure I.2).

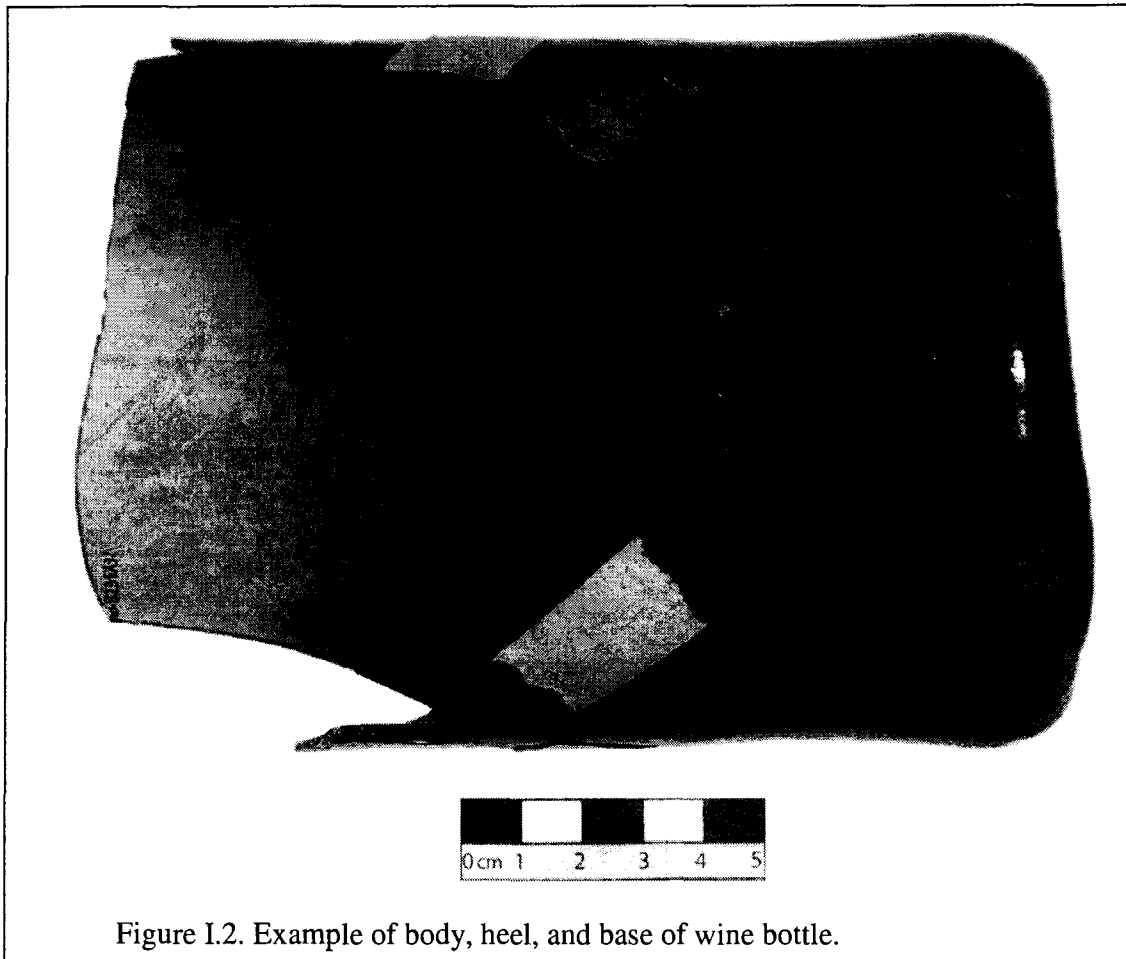


Figure I.2. Example of body, heel, and base of wine bottle.

Decanter. Decanters were used to separate a small amount of liquid (in this case likely alcohol), to allow sediment to fall out. Includes body of decanter as well as stopper.

Dish. Serving vessels, plates, bowls, etc. can be made of glass, use this category if uncertain of form.

Light bulb. Common incandescent light bulb with filament, glass bulb, and metal screw base.

Stemware. Vessel with foot, stem, and bowl in variety of shapes and sizes, may be recognized by any of these components (Figure I.3).

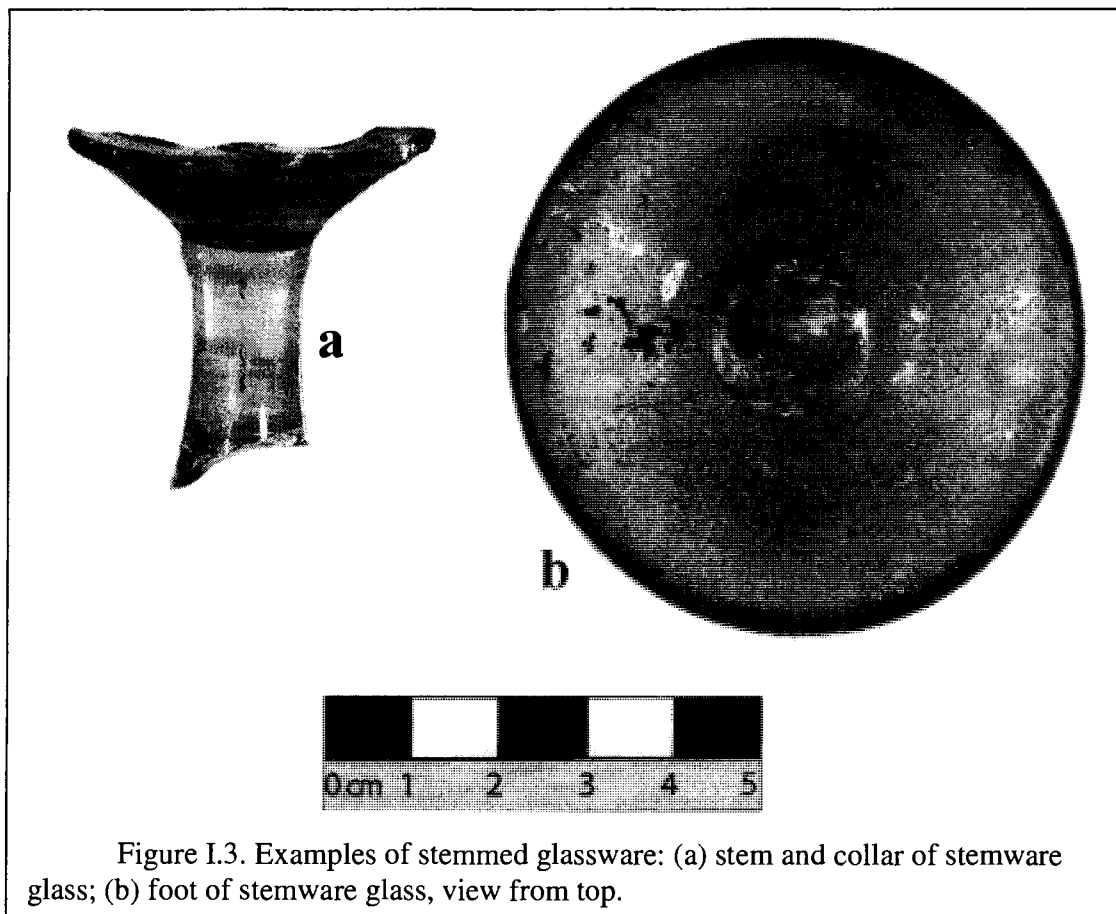


Figure I.3. Examples of stemmed glassware: (a) stem and collar of stemware glass; (b) foot of stemware glass, view from top.

Tumbler. Roughly cylindrical or slightly tapered body, usually flat or slightly concave base, plain rim (Figure I.4).

Vial. Characteristics include a small, cylindrical body, with thin walls, less than 6 ounce capacity, which may have markings indicating medicinal use.

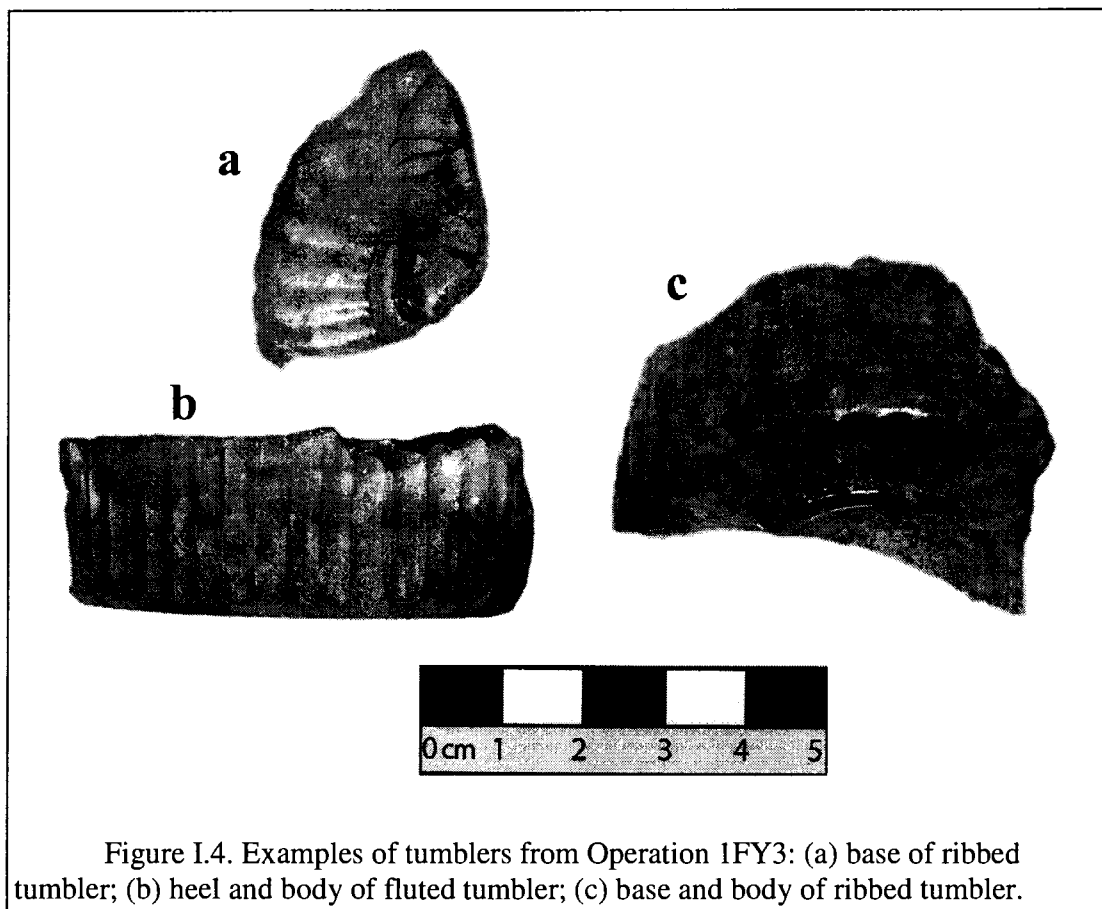


Figure I.4. Examples of tumblers from Operation 1FY3: (a) base of ribbed tumbler; (b) heel and body of fluted tumbler; (c) base and body of ribbed tumbler.

Metal

The metal artifacts collected from Operation 1FY3 were mostly poorly preserved, as they were heavily affected by corrosion. Nevertheless, certain forms are discernible in the following categories. Whenever artifacts were previously catalogued, the earlier identification was used, owing to the assumption that corrosion has continued to damage the artifacts, which were more easily distinguished immediately following excavation. Most of the categories are fairly self-explanatory.

Bar. A long, solid bar of metal, with a diameter greater than 1 cm. and length over 5 cm.

Bolt. Threaded shank and round or octagonal head, used in conjunction with nut.

Buckle. Metal clasp used to fasten two things together, such as shoe buckles, and belt buckles.

Chicken wire. Thin wire fencing joined in roughly hexagonal pattern. It may have been used to contain fowl, or in construction as a framework for stucco.

Coin. Any flat metallic disc with signs of use as currency. Note specifics (i.e. country of origin and date of manufacture).

Foil. Ductile metallic leaf or wrapping.

Fork. Any pronged eating utensil, may include prongs, shank, and handle/tang (Kenyon 1983).

Handle. – Anything resembling a furniture-type handle or knob. Used for grasping.

Hinge. Designed to allow two metal plates (usually with holes) to rotate, e.g. door hinge.

Hollow tube. Similar to a metal pipe but with thin walls, use uncertain.

Hook. Either an open or closed hook, or S-hook.

Knife. Bladed utensil or tool with tapered end, whether to a point or rounded, may include blade, heel, bolster, and handle/tang (Kenyon 1983).

Light bulb base. Usually threaded portion of light bulb that connects to electrical outlet.

Nail. Nails are metallic fasteners used chiefly to connect pieces of wood. They are differentiated here only by the shape of the cross-section, rather than head attachment and

fibre direction, due to the state of corrosion. Those without an identifiable cross-section are simply called nails.

Nail, machine cut. Rectangular shank cross-section (Figure I.5).

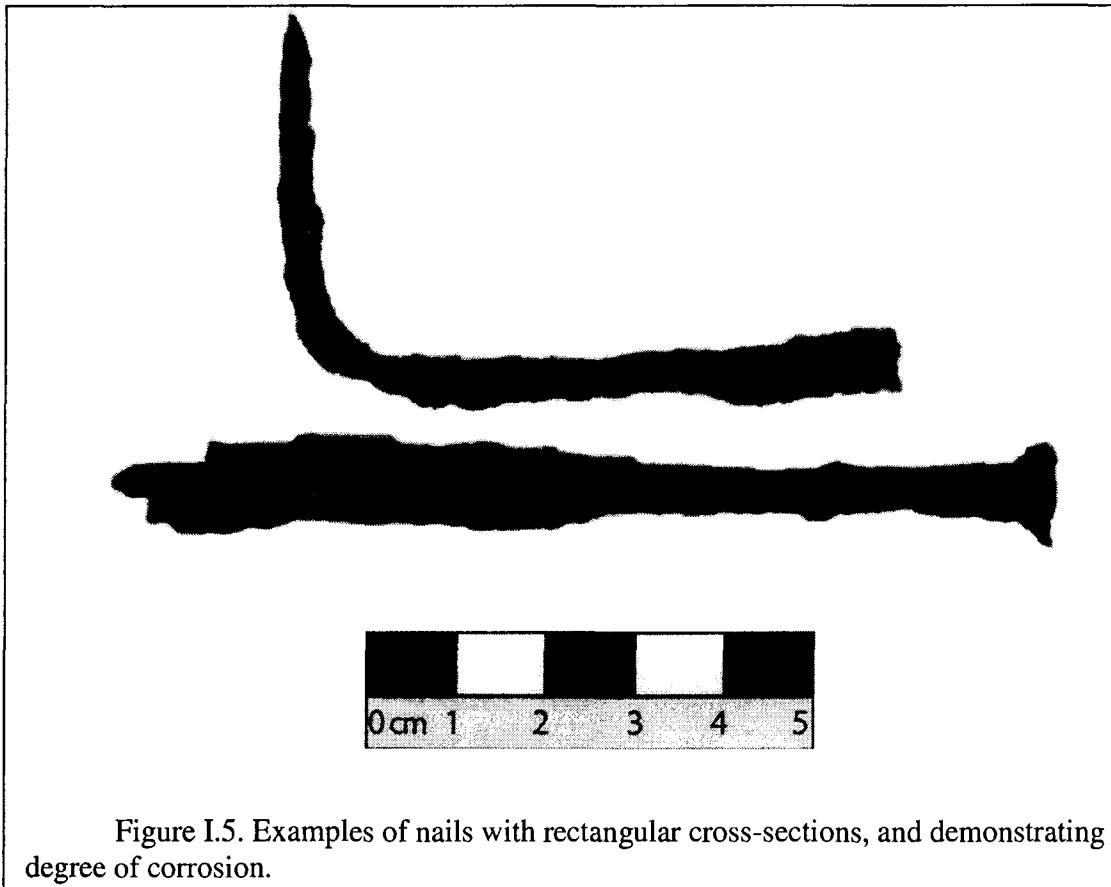


Figure I.5. Examples of nails with rectangular cross-sections, and demonstrating degree of corrosion.

Nail, wire cut. Round shank cross-section.

Nail, wrought. Square shank cross-section.

Nut. Usually octagonal (may also be square, round, or wingnut) metal object with threaded interior hole, used with bolt as fastener.

Paperclip. Slender piece of metal wire bent and looped in order to hold sheets of paper together by pressure. May be plain metal or plastic coated.

Pin. Pins can be used as temporary fasteners, as with clothing, or for delicate woodwork. Very thin and typically less than 3 cm., pointed end, and closed head, whereas a needle would have an eyehole.

Pipe. Long, hollow piece of metal with open interior, fairly thick walls, often threaded ends.

Pull tab. The included device used to open beer or pop cans.

Screw. Another means by which to fasten objects permanently, screws have a threaded shank, and flat or possibly concave (rarely convex) head with impression for driver bit.

Sheet/flat metal. Any flat piece of metal larger than about 4 cm².

Spike. Very large nail, in excess of about 7 cm in length with diameter in excess of about 1 cm.

Strapping. Long (more than 5 cm.), thin, flat metal strip, often used as binding for wooden barrels.

Tack. Small, specialized nail, about 1 to 2 cm in length, often for fine woodwork or metalcraft.

Tin can. Used for canning food or beverages, walls thin and plated.

Washer. Thin, round plate with central hole, often used in conjunction with nuts and bolts in fastening wood or metal objects.

Wire. Long, single-stranded (to differentiate from cables) metal conductor; catalogued as wire, plastic coated if insulated coating is still present.

Wire, plastic coated. Similar to a wire except covered in a thin layer of plastic, which acts as insulation against an electrical current.

Other

Most items made of the materials included in the 'other' category are relatively modern intrusions, and should be familiar to most readers and/or analysts.

Bottle cap liner. Thin, circular plastic liner used under plastic bottle caps to prevent leakages.

Button. Only non-metallic, bone, or shell buttons are included here, i.e. modern plastic buttons. Used primarily for fastening garments, though may also be decorative.

Camera film. Any kind of standard photographic film, a plastic sheet coated with silver halide. Usually dark in colour with reel holes on both edges.

Clothing tab. Small plastic tab used to attach paper or fabric labels to garments.

Cup. Any kind of container designed for holding liquids with a large mouth opening and hollow interior. They can be made of plastic, paper, or styrofoam.

Electrical wire cap. End caps for connecting electrical wires at junction points, often with a threaded interior and textured (ridged) exterior.

Pen. Writing implement with self-contained ink cartridge, usually ball point but felt tip also possible; usually made of plastic and metal.

Pencil lead. Includes both softer modern lead, and older slate pencils.

Shingle. Any kind of roofing protection, whether tar and gravel or stone, typically flat and impermeable.

Stir stick. Similar to a straw, in that it is plastic and hollow, but usually flatter with much less hollow space. Designed for stirring hot liquids.

Straw. Hollow plastic tube through which liquids can be consumed. Plastic is usually thin, may be almost any colour, including transparent, and it is round.

Wire casing. Plastic electrical wire insulation in which the wire is no longer present.

Wrapper. Usually cellophane, used for candies, cigarette wrappers, etc.

Component

This is an upper-level reference to which portion of a complete vessel or object is represented by a sherd or fragment. Designation of where components begin or end is arbitrary, but standardization allows for consistency in cataloguing. Only ball clay pipes, ceramics, and glass tableware and containers were analyzed and catalogued in this manner, though it would be feasible to do the same with others, such as nails and eating utensils. Decomposing a complete vessel into its constituent components, and subsequently identifying which component a sherd belongs to, aids in the identification of minimum vessels, where they can be counted by the largest number of a component present in an assemblage.

Ball Clay

The only form in the collection for which ball clay was used was the clay tobacco pipe, which is composed of two components, the bowl and the stem (Figure I.1).

Bowl. The portion into which tobacco is placed and burned. The bowl includes everything between the junction with the stem and the end of the pipe. The junction, or brink, is marked by the first change in angle. The heel or spur is considered part of the bowl.

Stem. The stem is the long, typically straight, component with a central hole through which smoke was drawn by inhalation. It could also be used to hold the pipe. It ends at the beginning of the angle that marks the start of the bowl.

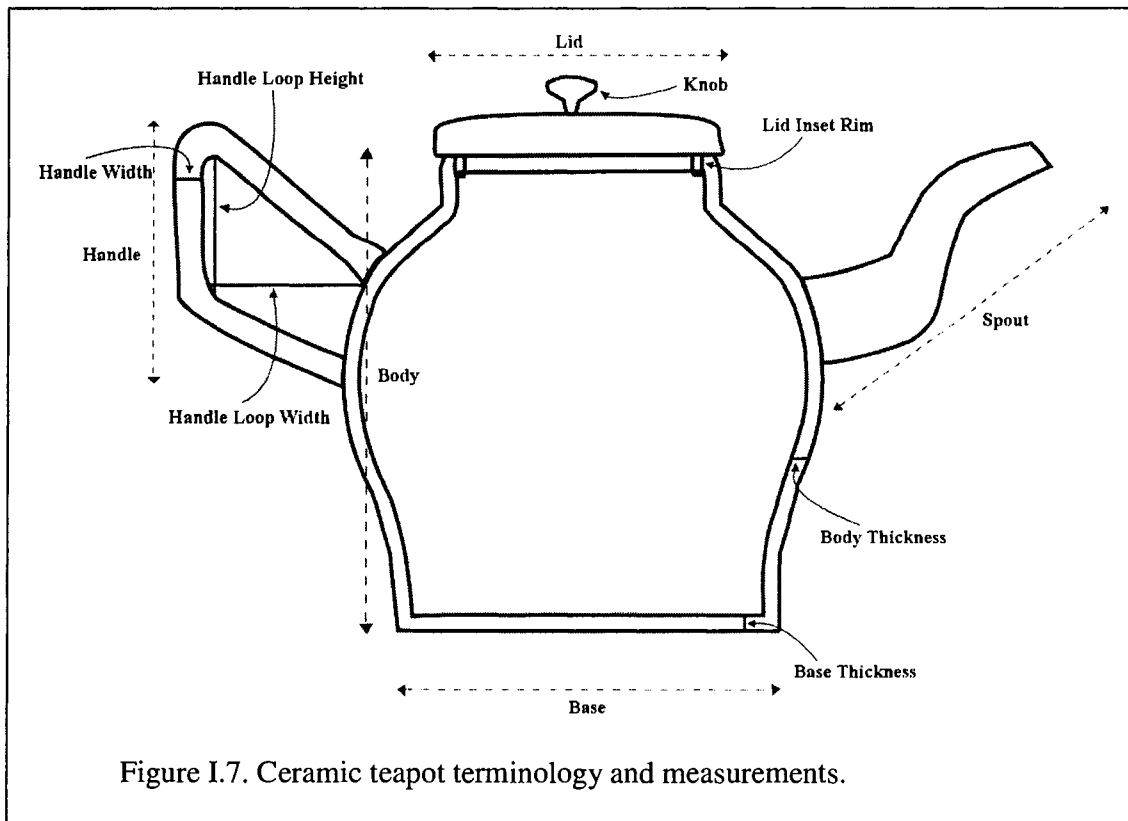
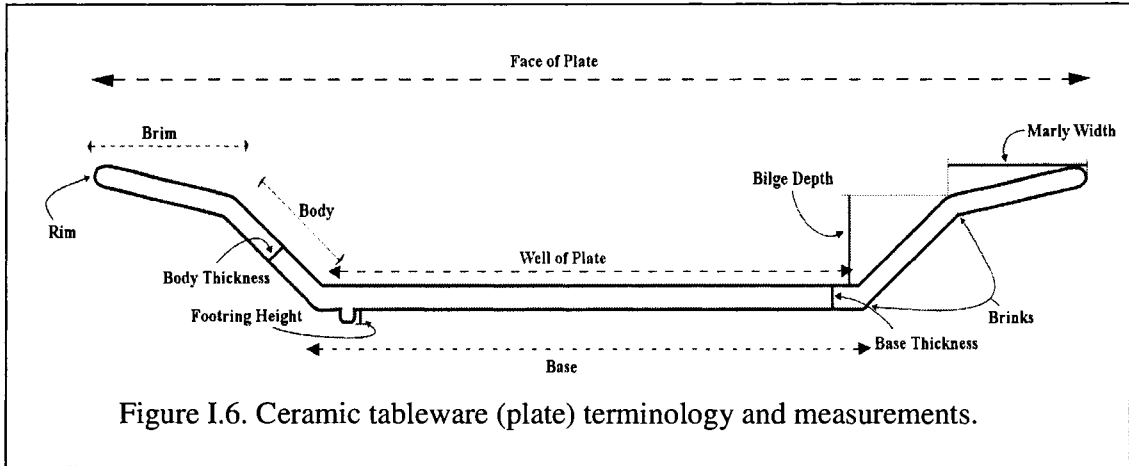
Ceramic

An incredibly wide variety of ceramic tableware vessels can be broken down into seven components. Some of these components apply to certain forms, but not others (e.g. a plate will not have a spout, but a teapot will) (Figures I.6, I.7).

Base. The entire bottom portion of the complete vessel, up to the junctures or brinks with the body, which starts at the first change in angle. The base usually is the section that rests on the table, or other surface, except when it may be raised somewhat by the addition of a footring, which is, nevertheless, an element of the base.

Body. The main body of the vessel typically varies quite widely by form, but is generally the portion between the base and the brim. The exception to this is in the case of a vessel which has a neck, in which case the body is the component between the *Base* and neck. The body may change direction or angle, and can often vary in thickness. Most decoration occurs on the body exterior for hollowware vessels like cups and teapots.

Brim. The brim of a vessel is that portion that leads up to the very edge or rim, from the last brink with the body. This, too, varies by form, where a plate will have a large brim extending across the whole of the marly, while a cup will have only a slight brim that covers only the rim of the vessel. As a result, it is typically only plates where a sherd can be assigned to the brim without having a fragment of the rim, though some bowls and platters may have the same.



Handle. A specialized attachment used on comparatively few vessel forms, including some cups and mugs, teapots, and some serving dishes, handles will take one of two basic forms. A looped handle has an opening to permit grasping of the handle itself (Figure I.7), while a solid handle has no opening between itself and the body, acting more as a means by which to support and lift the vessel. These latter are common on tureens.

Lid. Few vessel forms include lids, which are a separate piece entirely. They typically include insets (as do the vessels) to permit a better fit with the dish. Examples include teapots, vegetable dishes, and some tureens. Lids often have a knob by which to grasp them for removal. Any sherds belonging to a lid have that component listed as primary.

Neck. Only a few specialized containers were identified in the collection with necks, technically a specific form of brim. This component is used to indicate vessels that are in the form of bottles, such as blacking bottles, which have a constricted opening that is significantly smaller than the body, and a long protruding neck. It starts at the last brim after the vessel becomes constricted.

Spout. Spouts work to confine liquids in the process of pouring in some vessel forms, such as teapots, jugs, and gravy boats. This component category subsumes both spouts and snips. The former is generally a long, curvilinear, hollow tube applied to the body over a filter. A snip, on the other hand, is a constriction of the vessel rim that acts as a guide for the liquid.

Glass

Glass tableware and containers were catalogued by components as well, following the standards elaborated by Jones and Sullivan (1989:Figures 52 and 112). These

components are frequently manufactured separately and connected while the glass is still somewhat plastic, making identification of seam lines important.

Base. Similar to the base of a ceramic vessel, this is the component that is typically in contact with a surface when complete and properly stanced. The kickup or pushup of a wine bottle is considered part of the base.

Body. The main body of a vessel varies by form, where it starts at the base and ends at the shoulder in most containers, while it starts at the base and ends at the brim or rim in tumblers.

Bowl. This is a specialized term used for the body of a stemware vessel. It extends upwards from the stem, terminating at the rim.

Brim. Applicable only to glass tableware, the brim is the portion leading up to the edge or rim of the vessel. Typically this applies only to the very rim of the vessel, but some may have an extended brim from the last brink with the body.

Finish. The finish is that portion at the top of the neck of a bottle that includes the bore, the lip, and any string rims that may be present (Jones and Sullivan 1989:76).

Foot. Applicable only to stemware, the foot is the equivalent of the base. They are typically circular, though construction can vary quite widely (see Foot Formation below). It ends at the start of the stem.

Neck. Containers, or bottles, will typically have a narrowed portion between the shoulder and the finish, known as a neck. It varies in length and form.

Shoulder. Between the body of a bottle and its neck, there is a section that narrows, known as the shoulder. The glass at the shoulder is often very thin. They vary in form.

Stem. Applicable only to stemware, stems are usually a portion of solid glass between the foot and the bowl. They are thin, and designed to allow grasping. Often decorated, the stem is the most diagnostic fragment of stemware vessels, along with the foot.

Element

This is a more refined identification of specific elements – discrete parts that can often be measured – represented on a sherd. Generally less arbitrary than a component, elements can usually be recognized by additions or changes in the nature of the component on which it is found.

Ball Clay

These elements again apply only to pipes, the sole form in which ball clay was identified in the collection (Figure I.1).

Brink. A brink is the break in angle between the bowl and stem components.

Heel. Heels and spurs are catalogued together (cf. Noël Hume 1969:Figure 95), and are the small point of clay under the bowl, useful for resting. The heel is often marked.

Mouth end. Also known as the bite, the mouth end is the end of the stem held between the lips or teeth.

Rim. The open edge or lip of the bowl.

Ceramic

Many of the elements below are applicable only to specific vessel forms (e.g. filters tend to be on teapots only, though some fish and vegetable dishes will have similar

pierced holes for drainage and steaming), while others are present on most forms, such as rims (Figures I.6 and I.7). In many cases, these elements can be measured, and the result will be indicative of form. For example, a 25 cm rim will generally suggest that the sherd is from a plate.

Attachment. Light ring of clay on body of vessel showing where another discrete component (e.g. handle or spout) was applied.

Bilge. Applicable only to flatware (i.e. plates, serving platters), saucers, and bowls, the bilge represents the useable depth of a vessel. It is measured from the interior, or face, of the base, to the start of the brim, which may be represented either by the marly or by the rim.

Brink. Break in angle either in body or between two components.

Filter. Small area, usually on body, with multiple evenly pierced holes, usually meant to contain tea leaves on teapot.

Finial/knob. Any small protrusion, typically an application, which may function simply as decoration, or as a grasping point. They are most often associated with lids.

Footring. Footrings can take many forms, but all function to lift the base of a vessel away from the surface. They vary not only in form and shape, but also in size.

Maker's mark. Stamped, printed, or painted indication of manufacturer.

Marly. Some plates, bowls, platters, and even saucers, have an extended brim, which may be called a marly. This permits treatment and measurement of the element separately, which can be indicative of form. The bilge-marly junction or brink is highly suggestive of form when combined with rim diameter.

Mend hole. Hole drilled in sherd, presumably to allow attachment by wire to another fragment.

Rim. The rim is the edge, or lip, of a vessel's opening. It can often be suggestive of form when measured.

Snip. Similar in function to spout, but where rim has been pinched to constrain flow of liquid.

Glass

Glass elements, following the standards of Jones and Sullivan (1989:Figures 52 and 112), are generally highly restricted to specific form categories. That is, while pushups, string rims, and lips are found only on bottles or similar containers, collars and knops are found only on stemware. The following eight elements are presented with that consideration.

Collar. The collar is the junction point between the bowl and the stem on most stemware. It is where the two components were generally joined together with a ring of reinforcing glass. Some stemware was joined in other ways, or manufactured in a single piece, and so lack a collar.

Corner. Any angle, on the body of a vessel, with a vertical orientation, when properly stanced.

Heel. Any angle connecting the body of a bottle with its base, recognized by a horizontal orientation when properly stanced.

Knop. A rounded or angular protuberance on the stem of stemware vessel, which can take numerous forms.

Lip. The lip is the topmost portion of a container, which circumnavigates the bore.

Pushup. Also known as the kickup, this is the portion of the base of some bottle types that is deeply indented as a result of the manufacture process. It is also thought to aid in sedimentation.

Rim. Applicable to glass tableware, the rim is the edge or lip of the vessel. Glass rims are typically rounded to prevent injury.

String rim. The string rim is another element of the finish, used to fasten the lid or cork with wire or string. It is usually either a discrete band, or small ledge, which indicates the top of the neck and start of the finish. A bottle can have multiple string rims.

Decorative Technique

The following describes the manner in which decorative techniques were identified for the ball clay, ceramic, and glass categories. Some of the artifacts in the collection were affected by more than one of the techniques described below, for which there was provision in the database to list up to three.

Ball Clay

Clay tobacco pipes were generally only minimally decorated, either through glazing or through some surface modification.

Burnt. Surface modification caused by high levels of heat, which can distort decoration.

Glazed. Some pipes have lightly glazed stems, though it is relatively rare, in this assemblage. The glaze is usually an orange/red colour.

Impressed. Negative relief surface decoration, applied by stamping.

Moulded. Positive relief surface decoration, created in a mould.

Undecorated. Undecorated pipes are those that lack any of the above modifications.

Ceramic

Decorations of ceramics as applicable to the goals of the thesis are described in detail in Chapter 3. The following defines how those identifications were made, so that the results can be replicated.

Burnt. Heat modification of the ceramic surface is included in decorative technique for when heat modification distorts decoration. A rough-textured blackened surface indicates this exposure to high temperatures after use.

Edge moulded. Refers to moulding of the rim, such that the rim is modified, related to edge form field below.

Enamelled. Overglaze, usually polychrome hand painted decoration (Kenyon 1987:25).

Flow. Similar to transfer printed designs, but treated such that lines are less distinct and softened (Sussman 1979:233) (Figure I.8).

Gilded. Gold coloured painting, often along rims.

Glaze decorated. Used for monochromatic decoration of entire surface of sherd.

Handpainted, underglaze. Any hand painted decoration done before glaze was applied.

Lustre. The use of a thin film of metal to produce metallic effects and shimmers (Majewski and O'Brien 1987:164; Sussman 1979:233) (Figure I.9).

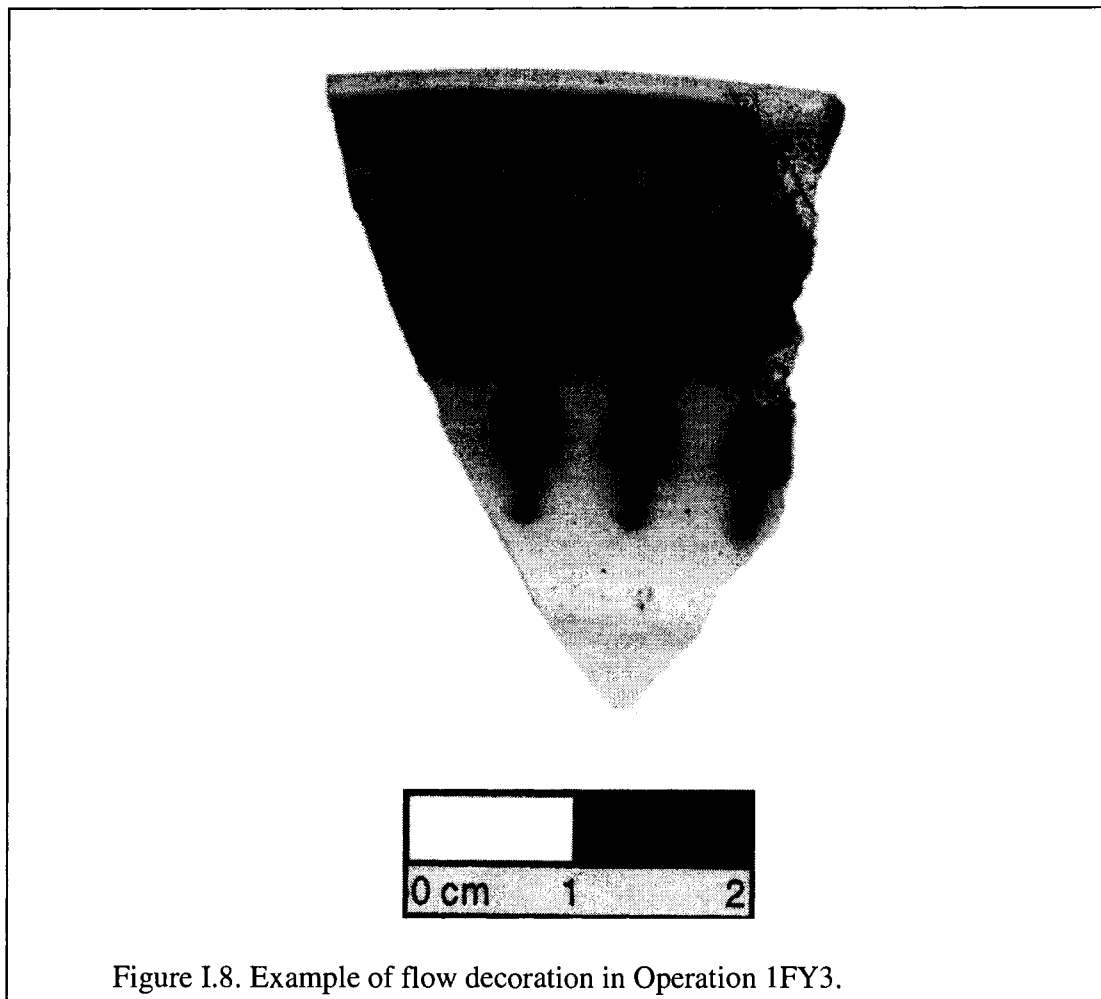
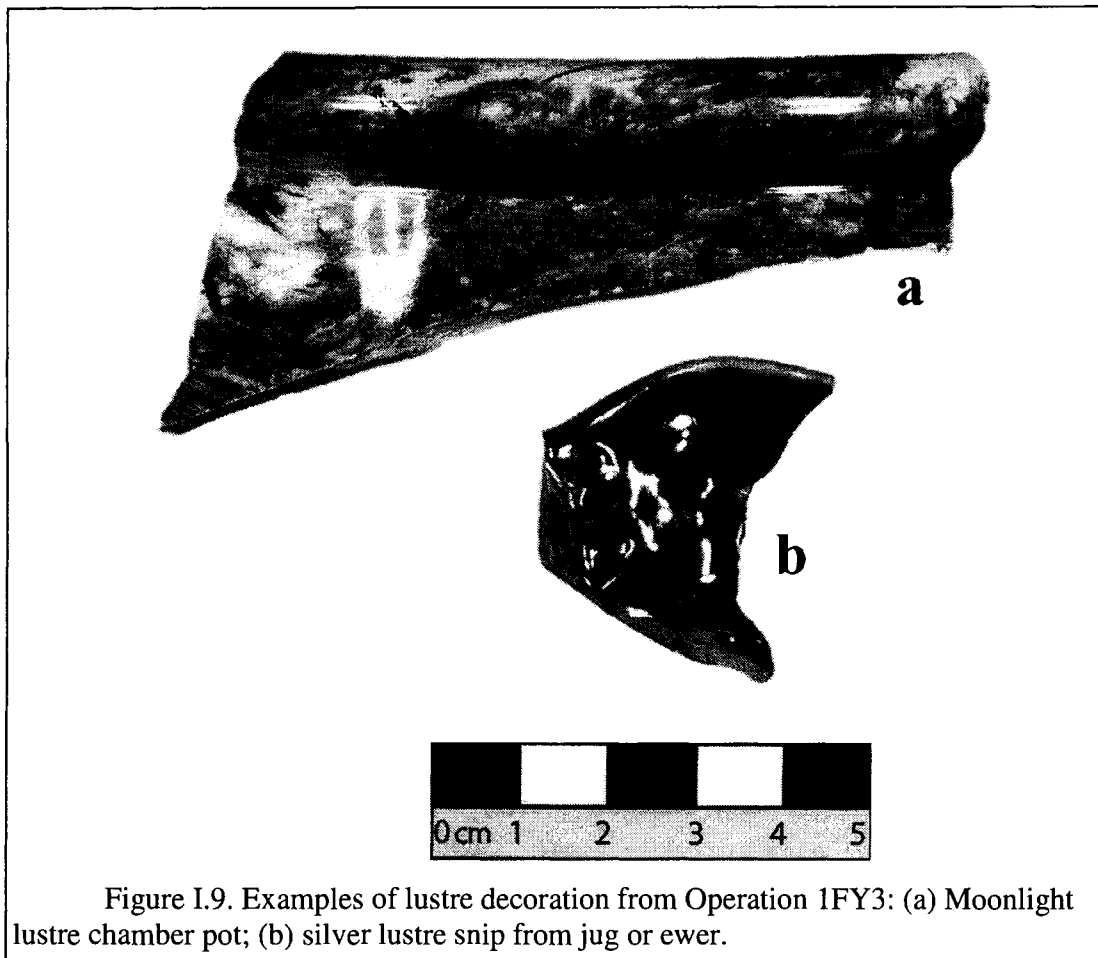


Figure I.8. Example of flow decoration in Operation 1FY3.

Slip decorated. Any decorative type that involves the use of slip, including several motifs (cabling, mocha, checker), as defined by Sussman (1997:6-44) (Figure 3.3). Often referred to as “annular,” “dipped” or “dip” using historic terms (Majewski and O’Brien 1987:163; Sussman 1997:1).

Sponge stamped. Repeated application of basic design that was cut into sponge or cork, often well-defined and thick, appears raised, but more crude than handpainted (Sussman 1979:233).



Sponged. Colouring that covers most of surface in dabbed manner.

Surface modified. Any modification of the surface, whether positive or negative relief, related to the surface modification field below.

Transfer printed, overglaze. Transfer printing applied after glaze, recognized by raised appearance and texture.

Transfer printed, underglaze. Transfer printing applied before the glaze, usually appears flush with surface of the vessel, and feels smooth.

Undecorated. No evidence of decoration on the sherd.

Unpainted. Used in conjunction with surface modified for when modification is not accompanied by any form of coloured decoration (cf. Majewski and O'Brian 1987:153).

Glass

Decorative techniques for glass are intrinsically related to glass production technology (e.g. different moulding techniques developed as varying means of production). Further information on these and additional techniques can be found in Jones and Sullivan (1989). Below is a description of how the decoration was applied, and how it was identified in the process of cataloguing the collection.

Cut. Molten glass is cut with wet sand and a wheel, producing a lustrous surface and sharp edges, typically geometric motifs, such as panels, flutes, etc. (Jones and Sullivan 1989:56).

Die impressed. Pattern usually on base of tumbler made by pressing hot glass with a die (Jones and Sullivan 1989:53-54).

Etched. Done through the application of acid, or sand blasting, this applies to glass artifacts that have been frosted in a specific design, rather than to the entire surface (Figure I.10).

Moulded. Used when type of moulding technology is unknown, but the shape has been embellished (Jones and Sullivan 1989:50).

Moulded, contact. Produced by blowing glass into a mould. Inner and outer surfaces are parallel, following the mould pattern, and there may be mould seams (Jones and Sullivan 1989:24).

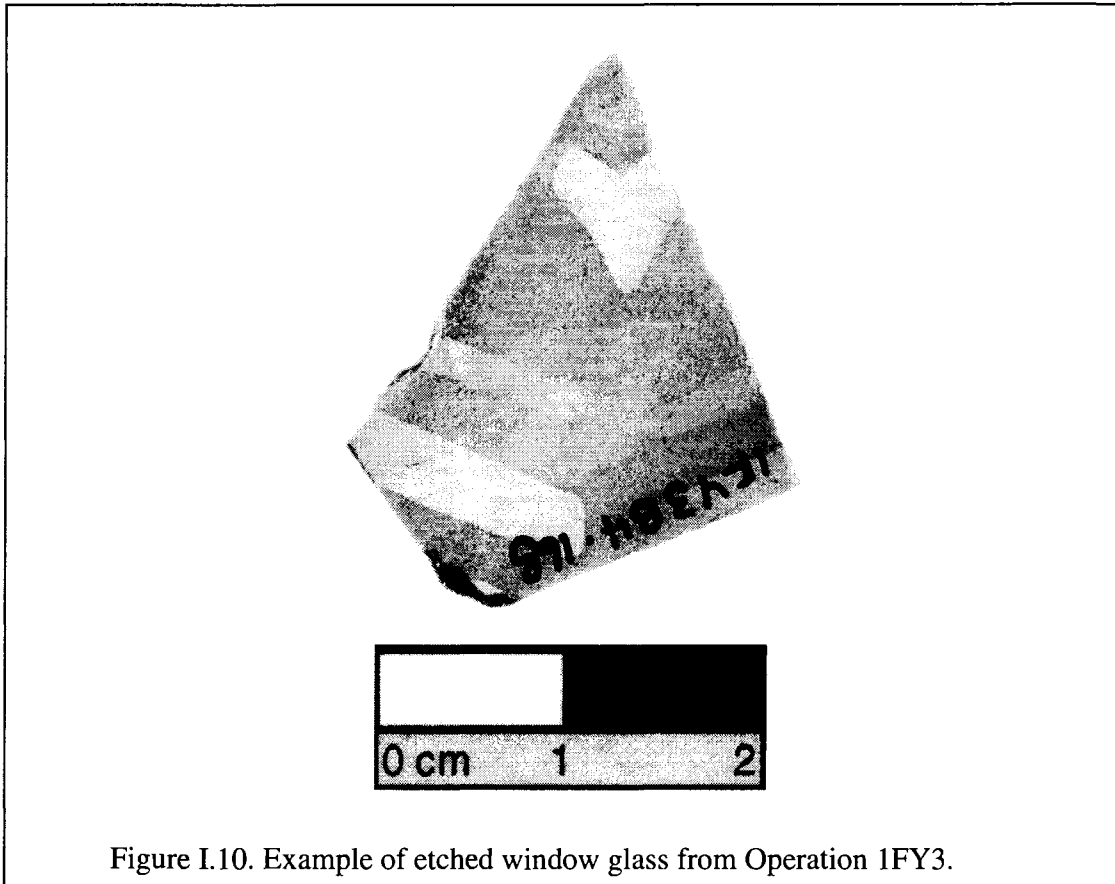


Figure I.10. Example of etched window glass from Operation 1FY3.

Moulded, press. Manufactured by pressing glass into a mould with a plunger. Inner surface is even (shaped by the plunger), while outer surface follows pattern of the mould, there may be mould seams (Jones and Sullivan 1989:33).

Undecorated. Glass that lacks any observable decoration.

Decorative Motif

The decorative motif on an object is a description of the theme of any decoration present. Obviously, if an artifact lacks decoration, it cannot be catalogued in this category. Only ball clay, ceramic, and glass artifacts were assessed for decorative motif.

Motif was used to help differentiate between vessels in deriving a minimum vessel count where measurements were the same. Undiagnostic themes were listed as such.

Ball Clay

The majority of the following themes were identified by Jelks (1973:72-75).

Fluted/ridged. Any pattern of vertical flutes and/or ridges repeating around most of bowl, or horizontal flutes and/or ridges around the stem (Jelks 1973:72).

Foliated. Any plant-based design (Jelks 1973:73).

Human effigy. Bowl is moulded to resemble a human head (Jelks 1973:74; Kenyon 1983).

Maker's mark. Any indication of manufacturer on bowl or stem, including TD marks (Kenyon 1982a, b, 1984); describe in markings field below.

Masonic. Any pattern incorporating the “Masonic emblem of dividers and square” (Jelks 1973:73).

Scenic. Depiction of landscape, animals, vessels, etc.

Ceramic

Most of the decorative motifs listed below follow standards of the ceramic collecting hobby. Specific patterns are given with their source when not commonly identified.

Animals. Subset of scenic/landscape where animals are the main focus of the theme.

Annular/banded. Wide bands (more than 0.5 cm.) surrounding vessel, usually multiple concentric bands.

Cabbling. Series of overlapping circles of mixed slip colours, which have blurred edges (Sussman 1997:17).

Checker. Pattern of squares with alternating colours, like a checkerboard.

Chinoiserie. Any pattern with Asiatic themes, usually used in association with geometric and scenic/landscape motifs.

Edge lined. Thin line covering rim.

Edge painted. Diffuse painting usually on marly, often associated with shell edge wares.

Floral, crude. Stylized floral sprays, typically handpainted.

Floral, precise. Precisely depicted floral motif, such that plant may be identifiable, usually transferprinted.

Geometric. Any pattern composed of repeating geometric forms, including lines, squares, diamonds, interlocking circles, etc.

Imari. Also known as Japan pattern, a specialized chinoiserie pattern which has underglaze blue decoration (often printed) in combination with polychrome (usually red and orange) enamelling (Miller 1991:10). It is typically found on stone china.

Lined. Thin lines (less than 0.5 cm.) that may or may not circumnavigate the vessel. Sherds that have lines below both the interior and exterior rims are assigned to this category.

Lined, exterior border. Line circumnavigates vessel just below exterior rim.

Lined, interior border. Line circumnavigates vessel just below interior rim.

Mocha. Slip decorated motif mimicking the dendritic form of unfoliated trees and bushes, or ferns, in various shades of brown and green, though other colours are possible.

Scenic/landscape. Any pattern showing a landscape scene, urban or rural, may contain people, animals, architecture, etc.

Shell. Pattern emulating seashell.

Wavy lines. Thin oscillating lines.

Willow. Following Coysh (1974:80), a pattern is only referred to as Willow if it contains at least three of the following elements: prominent willow tree; three arch bridge; three figures on the bridge; pagoda; angled fence; and boat. Otherwise it is considered chinoiserie.

Glass

Most of the following common motifs for the decoration of glass are found in Jones and Sullivan (1989:58-67).

Animal. The presence of any animal should be noted.

Crosshatching. Finely etched series of parallel lines at an angle to another set of similarly done lines, used to emulate shading.

Diamonds. A geometric pattern that involves a series of diamond shapes, whether raised or impressed.

Dots. Series of small, round spots, more than 0.25 cm, which may be either positive or negative relief.

Facets, oval. Small, flat cuts with an oval shape (Jones and Sullivan 1989:58).

Flutes. "Repeating pattern of distinct, concave units parallel to each other, either adjacent to each other or at short intervals" (Jones and Sullivan 1989:58).

Hobnails. Series of small, square projections, with a rounded surface.

Marked. Any legible marking, which may be maker's marks or the name of a product.

Panels. Series of flat cuts of the glass that divides the rounded shape into six or eight sides.

Ribs. Similar to flutes, but with convex units.

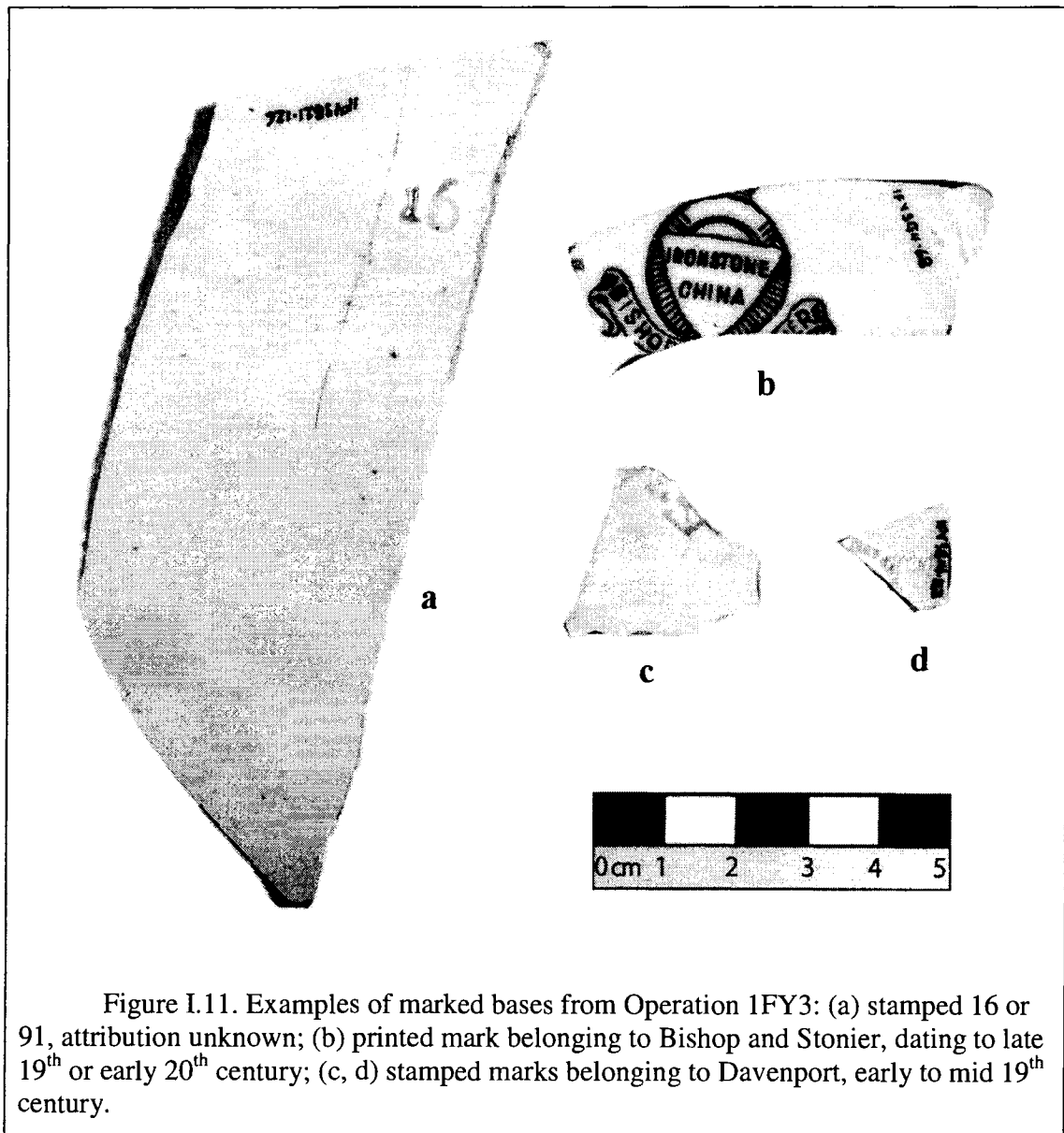
Scalloped rim. Rim has been moulded or cut in repeating wave pattern.

Stippling. Similar to dots, but smaller and only in positive relief.

Undiagnostic. Glass that has been decorated, but there is not enough on the sherd to be diagnostic.

Markings

Any legible markings, whether maker's marks or an indication or a product name or label, were recorded (Figure I.11). Due to the nature of an archaeological collection, it is rare that the entire word or image is present, and so it was described and recorded as completely as possible. Whenever possible, the complete name was also noted in a separate field when it was possible to identify using historic sources. Any pictorial elements and potential attribution of the mark is also described (e.g. small impressed anchor, possibly Davenport).



Window Glass Thickness

All sherds of flat glass are measured to the nearest 0.1 mm, in order to permit their use in dating (Kenyon 1980). Problems concerning the use of window glass to date sites and deposits (Jones and Sullivan 1989:172) are considered in Appendix III.

The following fields apply to ceramic artifacts only:

Decorative Colours

The two main colours present on the sherd are described to allow differentiation between otherwise identical pieces in the derivation of minimum vessel counts. If there are more than two colours present, then the sherd's decorative colours are described using one of the options for polychrome decoration. In general, the colour names follow standard North American naming conventions, such as black, green, white, orange, and pink. There are exceptions, however, which are described below.

Blue. Variations in blue (i.e. blue, dark blue, and light blue) are differentiated by the intensity of the blue, thus relating to the amount of cobalt, rather than density.

Copper. Lustre that makes the ceramic appear to be metallic.

Jackfield. A very glossy black glaze decoration.

Moonlight. A specialized pink/purple and gold lustre created using gold on a light background (John and Simcox 1963:4-5; Majewski and O'Brien 1987:164).

Polychrome. Used if timing of palette (below) is uncertain.

Polychrome, early palette. Typically includes blues, greens, and browns.

Polychrome, late palette. Typically includes reds, grays, and blacks (Kenyon 1985:50; 1987:25).

Silver. Lustre that makes the ceramic appear to be metallic.

Surface Modification

A variety of surface modification treatments were identified in the Operation 1FY3 collection, which are described below.

Engine turned. Repeating pattern of layered clay removal (e.g. checkered pattern) where there may be indications of chattering (stuttering) (Majewski and O'Brien 1987:163; Sussman 1997:26).

Feather edge. Similar to shell edge but moulded rather than impressed (Majewski and O'Brien 1987:148).

Impressed. Negative relief pattern, unnamed.

Moulded. Positive relief pattern, unnamed.

Pierced. Any pattern where the surface was fully pierced as part of the production process, e.g. in baskets.

Rilling. A thin band (ca. 1 cm.) of parallel grooves near the rim, usually inlaid with a light green slip (Sussman 1997:43).

Rouletting. Repeating pattern of chevrons or crisscrossing lines in thin (ca. 1 cm.) band around the vessel near the rim, usually inlaid with a light green slip (Sussman 1997:33, 43).

Shell edge, intricate. A shell edge impression where lines are curvy and have differing length.

Shell edge, simple. A shell edge impression where lines are straight and usually have the same length.

Glaze Colour

The glaze colour of ceramic sherds is subjectively assessed on a white background, on a portion of the sherd that is not decorated. Most of the categories are straightforward, following standard North American colour naming conventions, with the exception of bluish and yellowish glazed earthenwares. Five categories represent transparent glazes for the majority of refined white and cream-coloured earthenware in two graded lines of increased clarity (*Blue/blue-green* > *Blue/blue-green light* > *Clear*; *Yellow/yellow-green* > *Yellow/yellow-green light* > *Clear*). Differences in grading are identified in crazing lines and pooling of the glaze in corners of the vessel. In order to assign sherds to the appropriate category, they were pooled and compared amongst each other, and separated based on the amount of colour visible. When no colour can be seen, then it was catalogued as clear, while a light colouring was catalogued in the appropriate light category. When the colouring is strong and noticeable, it was catalogued as either blue/blue-green or yellow/yellow-green. If a sherd is entirely covered in decoration, obscuring the glaze colour, then the glaze colour cannot be determined.

Pattern Name

It was possible, with some sherds, to identify the name of identified transfer print patterns, making use of a wide variety of antique collectors' resources (e.g. Coysh 1974; Coysh and Henrywood 1982, 1989; Drakard and Holdway 2002; Williams 1978, 1986). Names given by antique collectors were recorded in quotation marks, e.g. "Pashkov Palace." If no name was assigned to a pattern depicted in one of these sources, then a

description from said source is given. Alternatively, if the image was thought to be identifiable, but could not be located, then a description of the unique elements of the pattern was included in the database. Pattern names were useful in deriving minimum vessel counts, where similar motifs could be differentiated by more specific images. It also allows for the assignation of approximate dates of manufacture (below).

Pattern Date

The dates recorded for this project are meant to represent the production range, rather than popularity dates, of the various patterns identified, based on what is listed in available resources. In some cases, only an approximate start date was available. This data allows for an indication of the age of the collection, as most patterns were only produced for a limited period of time, and hence act as a *terminus post quem* (see Chapter 4 – On Dates for more on the problems of dating).

Rim Diameter

Measured to nearest cm using rim diameter measurement chart (series of concentric circles at 1 cm intervals). Measurement represents the exterior edge of the rim, to best fit. If more than 50% of the rim was present, callipers were used and measured to the nearest 0.1 cm.

Rim Thickness

Measurement taken at the break point of rim (where curve of the rim ends), to the nearest 0.1 mm. Rim thickness is used to differentiate between vessels in deriving a minimum vessel count.

Edge Form

Edge moulded or modified vessels were available in a variety of forms, which can be described to differentiate between potential vessels among sherds that are otherwise similar.

Indented. Any edge that has indentations in the rim, but where there is not enough of the edge present on the sherd to provide a more refined identification.

Indented, irregular. Series of unevenly spaced indentations, as often seen on shell edged plates.

Indented, regular. Series of evenly spaced indentations, where it is not possible to define the edge as wavy (below), because of the size and shape of indentations.

Plain. Plain edges are those that have not been modified in any way.

Polygonal. Any vessel with straight, not curved, edges, which suggests that the dish was polygonal in shape.

Queen's pattern. Specific pattern combining regular indentations with a thickening of the rim, as well as ridges at regular intervals extending away from the rim over the marly.

Royal. Similar to Queen's pattern, but without the ridges extending across the marly.

Unanalyzed. Rim sherds that are too short to describe the edge form confidently.

Wavy. Wavy edged vessels have regular even-sized undulations; indentations are intrusions into the plane of the rim, while these waves go above and below the plane.

Rim Cross-section

The cross-section of the rim, when properly stanced, can be described in several ways, based on how each side of the rim aligns with the rest of the brim or body.

Bulged, exterior. Thickening of *Rim* on exterior without a corresponding change in angle.

Bulged, interior. Thickening of *Rim* on interior without a corresponding change in angle.

Flared. Outward change in angle of more than 45°.

Flared, inverse. Upwards or inwards flare.

Flared, slight. Change in angle of between 10° and 45°.

Hemmed. *Rim* turns back to form complete circle, may have hollow interior.

Plain. No change in angle or thickening of rim.

Straight flare. A 90° angle between body and brim, may be large enough to resemble a marly.

Footring Diameter

Measured to nearest cm using rim diameter measurement chart (series of concentric circles at 1 cm. intervals). Measurement represents the exterior edge of footring, to best fit. If more than 50% of the footring is present, then callipers are used to measure to the nearest 0.1 cm.

Footring Height

This is a measurement taken on the inside edge of the footring, from the resting point to the base of the vessel. It should be taken perpendicular to the base of the vessel, not at an angle (Figure I.6).

Footring Type

This is a description of the footring that combines attributes of shape and form.

Double. Special type of footring which has a secondary break partway up the body (after Coysh 1974:8)

Rounded, one-sided. Rounded cross-section, with only one side, where the exterior grades into the body.

Rounded, two-sided. Rounded cross-section, with two distinct sides as a part of the base.

Square, one-sided. Square cross-section, with only one side, where the exterior grades into the body.

Square, two-sided. Square cross-section, with two distinct sides as a part of the base.

Triangular, one-sided. Triangular cross-section, which comes to a point at the resting surface, with only one side, where the exterior grades into the body.

Triangular, two-sided. Triangular cross-section, which comes to a point at the resting surface, with two distinct sides as a part of the base.

Body Thickness

Body thickness was measured to the nearest 0.1 mm, as close to the centre of the body as was possible (Figures I.6 and I.7). This was one of the characteristics that could be used to differentiate between potential minimum vessels.

Base Thickness

Basal thickness was measured to the nearest 0.1 mm, as close to the centre of the base as was possible (Figures I.6 and I.7). This was one of the characteristics that could be used to differentiate between potential minimum vessels.

Marly Width

The marly was measured for its width, to the nearest 0.1 mm, on the interior (face) surface, from the end of the brink with the body to the rim (Figures I.6 and I.7). In the case of moulded edges, the maximum width was recorded.

Marly Type

The marly on a plate or platter is best described in terms of its shape in profile. The interior, or face, surface is observed. Two patterns were recorded in the Operation 1FY3 collection.

Concave. The interior surface of the marly is concave, with a centre point lower than a plane between the brink with the body and the rim.

Flat. The interior surface of the marly is flat, with a centre point that is flush on a plane with the brink with the body and the rim.

Bilge Depth

The depth of the bilge represents the useable depth of a plate, bowl, saucer, or platter (Figure I.6). It was measured to the nearest 0.1 mm, on the face of the vessel, from the bottom of the well to the top of the brink with the marly. The measurement must be taken perpendicular to the well.

Bilge Type

The bilge on a plate, platter, bowl, or saucer, is best described in terms of its shape in profile. The exterior surface is observed in transverse cross-section, while it is a description of the interior surface that is recorded. The interior curvature of these vessels makes it difficult to view the inner surface, and so it is necessary to rely on the fact that the two surfaces are typically parallel. Again two patterns were observed in the Operation 1FY3 collection.

Concave. The exterior surface of the bilge is convex, with a centre point that extends further out than a plane between the brink with the brim and the base. This indicates that the inner surface of the bilge is in fact concave.

Flat. The exterior surface of the bilge is flat, with a centre point that is flush on a plane with the brink with the brim and the base. This indicates that the inner surface of the bilge is also flat.

Handle Loop Height

Only complete handles where there was a hole between the handle and the body of the vessel can be measured in this way. These are measured to the nearest 0.1 mm, at the inner loop maximum (Figure I.7). The height must be measured perpendicular to the surface when properly stanced.

Handle Loop Width

Only complete handles where there was a hole between the handle and the body of the vessel can be measured in this way. These are measured to the nearest 0.1 mm, at the inner loop maximum (Figure I.7). The width must be measured parallel to the surface when properly stanced.

Handle Cross-section

Handles can be described in terms of shape by its cross-section. The exterior surface is generally more useful, as the interior would often have been flat to assist gripping.

Bilobed. Handle that has been pulled or moulded such that it has two distinct lobes on the outer surface at least.

Elliptical. Handle that has been pulled or moulded such that all surfaces are smooth, and the overall cross-section is roughly oval in shape.

Moulded. Most solid handles that are surface modified are moulded, as are some open handles. Any decorative element that cannot be created through pulling is considered to have been moulded.

Rectangular. Handle that has been pulled or moulded such that all surfaces are smooth, and the overall cross-section is roughly rectangular in shape. The corners are still rounded.

Round. Handle that has been pulled or moulded such that all surfaces are smooth, and the overall cross-section is circular in shape.

Trilobed. Handle that has been pulled or moulded such that it has three distinct lobes on the outer surface at least.

Handle Width

The width of a handle is recorded to allow differentiation between handles in the derivation of minimum vessel counts. The maximum width of the handle is measured to the nearest 0.1 mm (Figure I.7).

The following fields refer to glass artifacts only. See Jones and Sullivan (1989) for figures depicting where measurements are taken and a depiction of the categories.

Mould Marks

This is the description of any visible mould seams on glass vessels. Mould marks are created as a result of glass manufacture, and represent the seam where pieces of a mould joined together. They are described in terms of orientation (i.e. horizontal or vertical when vessel in properly seated), sharpness, and position on vessel. If there was evidence that the glass was free formed, that was also recorded.

Pontil Mark Diameter

The diameter of the pontil scar remaining on the base of a glass vessel is measured to the nearest 0.1 mm at the maximum point (Jones and Sullivan 1989:123, Figure 99). It can be indicative of manufacture techniques, where size can mark different empontilling methods.

Pontil Mark Type

The degree of finish or polishing of the pontil scar region on the base of a glass vessel also provides information on finishing practices. Several states can exist, which grade into one another, but are generally separable (Jones and Sullivan 1989:Figure 102).

Finished. Fully polished, there is no indication of a pontil scar remaining besides the slight indentation of the base.

Mostly finished. Although mostly smoothed, there are some irregularities in the surface of the base that have not been polished away.

Roughly ground. Only a slight attempt was made to finish the pontil mark, where several irregularities remain, but the surface is not sharp.

Unfinished. The pontil scar has not been polished or finished at all, and still has a sharp point where the pontil was removed from the vessel.

The following fields refer to glass containers only:

Bore Diameter

The bore is the opening in the mouth of a container. It is measured to the nearest 0.1 mm, and taken at the top of the bore (Jones and Sullivan 1989:116, Figure 84).

Finish Diameter

The finish includes the bore, lip, and any string rims. It is measured to nearest 0.1 mm, at the maximum diameter of the lip portion of the finish.

Lip Height

The lip is the uppermost portion of the finish of a container. It is measured to the nearest 0.1 mm, at the maximum height of lip (Jones and Sullivan 1989:117, Figure 85). It is possible to have a lip height of 0 mm, depending on the configuration of the finish.

String Rim Height

String rim height can be used to differentiate between bottles, and to present the proportions of the finish represented by the string rim. It is measured to the nearest 0.1 mm, at the maximum height of the string rim (Jones and Sullivan 1989:117, Figure 86).

Finish Height

The finish height represents the entirety of the finish, including the lip, string rim, and a possible third element. This measurement can be used to differentiate between bottle forms. It is measured to the nearest 0.1 mm, from the bottom of the string rim to the top of the lip (Jones and Sullivan 1989:118, Figure 88).

Neck-Finish Height

The height between the base of the neck to the top of the finish can be used to differentiate between bottle types. It is measured to the nearest 0.1 mm, from the bottom

of the neck at the junction with the shoulder to the top of the finish (Jones and Sullivan 1989:119, Figure 89).

Body Height

Body height can be used to differentiate between different bottle types. It is measured to the nearest 0.1 mm, from the resting point of the base to the top of the shoulder-neck junction (Jones and Sullivan 1989:120, Figure 91).

Base Dimensions

The cross-dimensions of the base can be used to differentiate between individual bottles as well as between bottle types. It is measured to the nearest 1 cm, at the maximum dimensions of the base component (Jones and Sullivan 1989:120-121, Figure 92).

Body Dimensions

The cross-dimensions of the body can also be used to differentiate between individual bottles as well as between bottle types. It is measured to the nearest 1 cm, and is taken just below the shoulder-body junction (Jones and Sullivan 1989:119, Figure 90).

Pushup Height

Pushup height can be used to infer bottle type, and possibly country of manufacture, depending on the period represented by the collection. It is measured to the nearest 0.1 mm, taken on exterior of bottle, from resting point to the highest part of the pushup, perpendicular to the horizontal plane of the resting points (Jones and Sullivan 1989:123, Figure 98).

Finish Type

The finish can be described based on the number of elements (lip, string rim, and a possible third element) in the full finish (Jones and Sullivan 1989:79, Figure 54). It is possible for a finish to have three elements, but none of this type were identified in the Operation 1FY3 collection.

1 part. Finish that contains only a lip.

2 part. Finish that has both a lip and a string rim.

Lip

The bottle's lip can be described in terms of its shape in profile, or cross-section. The shape is often the result of different manufacture processes. (Jones and Sullivan 1989:80-81

Crude. The lip is only minimally present, or has not been finished in any way beyond having been cracked off from the blowpipe, in which case it is relatively flat with sharp projections.

Downtooled. The lip has a profile that slopes downwards and outwards.

Flanged. The lip projects outwards at a right angle to the neck. This is common on vials.

Folded in. The lip has a rounded edge created by folding the glass inwards towards the bore. It may include a small hollow space inside the fold.

Folded out. The lip has a rounded edge created by folding the glass outwards against the finish. It may include a small hollow space inside the fold.

Patent. The lip has a flat top as well as flat sides. These are generally found on moulded bottles, especially on more recent containers.

Rounded. The lip has a profile that includes a rounded, bulging side. The top may be flat or rounded as well.

V-shaped. The lip has a v-shaped side profile, with two relatively straight slopes coming to a point away from the finish. It may or may not have been created with a special tool while the glass was still plastic.

String Rim

The string rim on a bottle can be described as well in terms of its shape in profile, or cross-section. The shape is often the result of different manufacturing processes (Jones and Sullivan 1989:81-82).

Downtooled. The string rim has a profile that slopes downwards and outwards.

Rounded. The string rim has a rounded profile, with rounded top, side, and bottom.

V-shaped. The string rim has a v-shaped side profile, with two relatively straight slopes coming to a point away from the finish. It may or may not have been created with a special tool while the glass was still plastic.

Neck Shape

The neck of a bottle can be described based on its shape in profile, and changes in diameter between the finish and the shoulder (Jones and Sullivan 1989:82).

Bulged. The neck expands significantly at its centre point, or near the shoulder.

Cylindrical. The neck has a diameter that is relatively constant between the finish and the shoulder.

Rudimentary. The bottle has only a very short neck, less than 2 cm, and is almost non-existent.

Tapered. The neck expands in diameter at a relatively constant rate between the finish and the shoulder.

Heel

The heel of the bottle, the juncture between the body and the base, can be described in terms of its angle and shape in profile, or surface modifications (Jones and Sullivan 1989:85-86).

Abrupt. The heel comes to a fairly sharp, right angle, with a square profile.

Bulged. The heel has an outward bulge, typically just above the juncture between the body and the base. This may indicate that the bottle was placed upright while still fairly soft, resulting in a small amount of sag at the base.

Decorated. Any heel that has been moulded to include some sort of patterning, possibly in the form of a maker's mark.

Rounded. The heel has a rounded profile with a gentle curve between the body and the base.

Shoulder Form

The shoulder of the bottle, between the body and the neck, can be described in terms of its shape and angle in profile (Jones and Sullivan 1989:83).

Horizontal. The shoulder is at a roughly right angle to the bottle, parallel to the plane of the resting surface.

Rounded. The shoulder curves gently and relatively constantly between the neck and body.

Sloped down. The shoulder slopes downwards and outwards from the neck to the body, with no more than a slight curve.

Body Horizontal

The body of the bottle can be described on a horizontal plane, which is observed roughly half way between the heel and the shoulder (Jones and Sullivan 1989:83-84).

Circular. All sides of the bottle are rounded and roughly equidistant from the centre point.

Octagonal. The sides of the bottle are angled such that they form an octagon with eight equal length sides.

Square. The sides of the bottle are angled such that they form four right angles at the corners.

Square, concave chamfers. The sides of the bottle are all flat, and at right angles to each other, such that it would be in the form of a square, but the corners have been manufactured such that they form concave chamfers – angles that are shorter than the sides.

Body Vertical

The body of the bottle can also be described on a vertical plane, which is observed on the side profile between the base and the shoulder (Jones and Sullivan 1989:84).

Straight. The body has a relatively straight side, between the base and the shoulder, roughly perpendicular to the plane of the resting surface.

Tapered. The side of the bottle slopes inward and downward from the shoulder to the base.

Basal Profile

The basal profile of a bottle defines the profile of the base, including any pushup (Jones and Sullivan 1989:87). This can differentiate between different bottle types.

Bell-shaped. Describes a pushup with steeply angled sides, and a slightly rounded top, similar to a bell.

Dome. Describes a pushup with shallowly angled sides, and a gently curved top.

Flat. Describes a base lacking a pushup.

Parabolic. Describes a pushup with moderately angled sides, and a moderately curved top.

Rounded cone. Describes a pushup with steeply angled sides, and a moderately curved top.

The following fields refer to glass tableware only:

Rim/Bowl Diameter

Depending on whether a rim sherd has been assigned to either stemware or a tumbler, the bowl or rim diameter can be measured. It is measured to the nearest 1 cm using a rim diameter measurement chart (series of concentric circles at 1 cm intervals) on the exterior edge of the rim or bowl, to the best fit. If more than 50% of the rim is present, it can be measured to the nearest 0.1 cm. This measurement was used to differentiate between vessels.

Base/Footrim Diameter

Depending on whether a sherd has been assigned to either stemware or a tumbler, the footrim or base diameter can be measured to the nearest 1 cm using a rim diameter

measurement chart (series of concentric circles at 1 cm intervals). Measurement represents exterior edge of base or footrim, to best fit. If more than 50% of the base or foot is present, it can be measured to the nearest 0.1 cm. This measurement was used to differentiate between vessels.

Stem Diameter

The maximum diameter of a stem can be measured to the nearest 0.1 mm, including any knops present. This measurement was used to differentiate between vessels.

Bowl/Body Shape

The bowl is the stemware equivalent of the body, the portion of the vessel that is designed to hold liquids, while the body is used to describe the shape of a tumbler. It can be described in terms of shape in profile (Jones and Sullivan 1989:139, 143).

Conical. The bowl of the stemmed glass has a profile with a flat slope extending upwards and outwards from the top of the stem.

Cylindrical. The body of the tumbler has straight sides that extend upwards from the base without a significant change in diameter.

Octagonal. The body of the tumbler is angled such that it has eight equal length sides, in the form of an octagon.

Ovoid. The bowl of the stemmed glass has a profile that bulges outwards in the centre, then constricts again near the rim, such that it resembles an egg.

Tapered. The body of the tumbler extends upwards and outwards from the base in a straight slope.

Foot Formation

Stemmed glassware has a distinct foot component that can be described in terms of how it was formed. Tumbler bases can also be described as die pressed (Jones and Sullivan 1989:140).

Conical. The foot has a slight indentation in its base, and rounded edges.

Conical, folded. The foot has a slight indentation in its base, and edges that have been folded under.

Die pressed. The foot or base has a pattern impressed into its bottom, obliterating the pontil scar.

Firing. The foot has a very slight indentation, if any, and is very thick and heavy.

Stem Formation

The stem component of stemmed glasses is described in terms of any elaborations, whether they are internal, in the form of twists and intrusions, or external in the form of knops and balasters (Jones and Sullivan 1989:140).

Balaster, true. A true balaster shape is a bulging projection, raindrop shaped, gently curving outwards and downwards.

Knop, ball. Rounded knop, or small protrusion.

Plain. Stem that has not been modified in any way.

Appendix II – Description of Artifacts Not Used in the Analysis

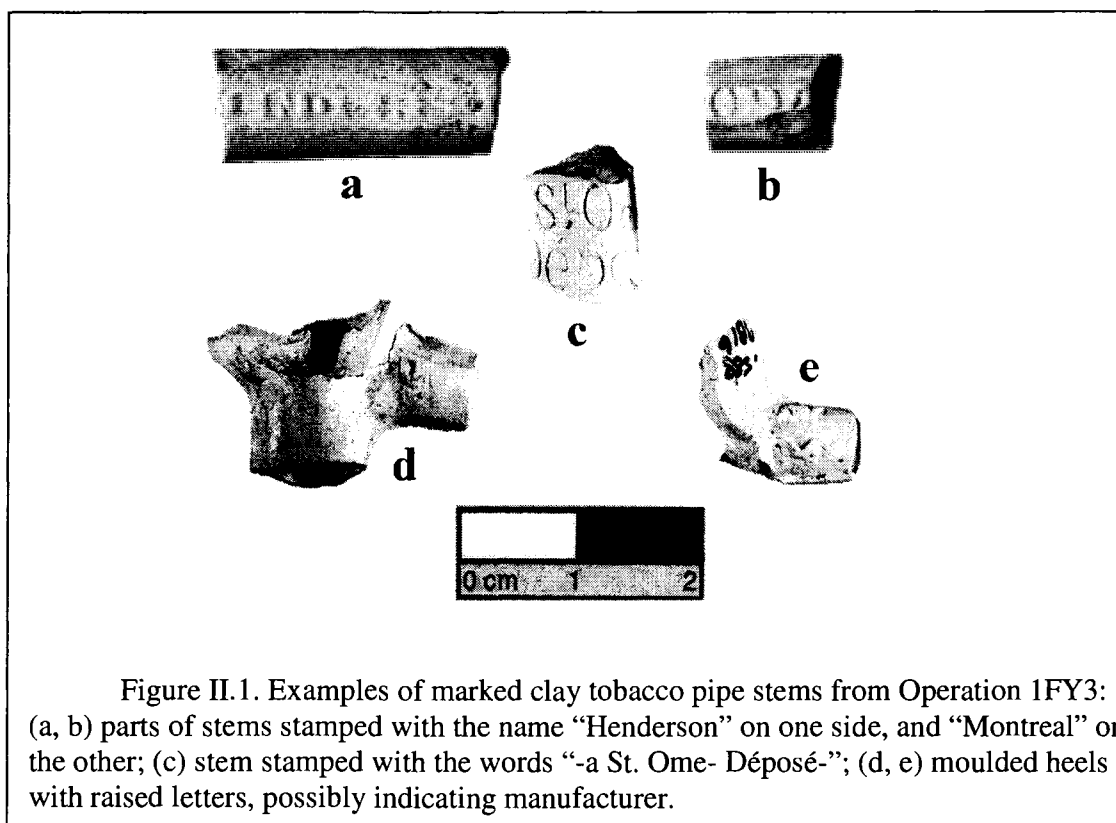
Due to the nature of the research undertaken in the course of this thesis - a study of socioeconomic status as derived from ceramics, glass tableware, and spatial data - and the comparatively high degree of fragmentation evident in the archaeological collection, it was not possible to incorporate all of the 19,492 artifacts catalogued into the analysis, including some of the ceramics. This section aims to describe those artifacts that were not required for the analysis of the assemblage, either because of a lack of utility in deriving measures of socioeconomic status given current knowledge, or as a result of limitations of time and space. These are described below in accordance with the material categories defined in Appendix I, with reference primarily to quantity.

Ball Clay

Ball clay, a special light coloured clay with a higher proportion of kaolinite than typically found in ceramics, is a material from which pipes were commonly manufactured as late as the early twentieth century (Walker 1983:2). All of the 663 ball clay artifacts catalogued in the Operation 1FY3 collection were identified as clay tobacco pipe fragments.

Pipe. The clay tobacco pipe is one of the most frequently occurring artifact forms not only at Fort York, but also at other nineteenth century archaeological sites in North America. Smoking was a culturally ubiquitous habit, and the pipes were both fragile and inexpensive (Walker 1977:3).

Of the 663 pipe fragments identified, 105 were decorated either through moulding, stamping, or glazing (Figures II.1 and II.2). The most common motif among these was an indication of the manufacturer, most commonly the “TD” mark, which may or may not be informative of the maker, as other pipe producers appropriated the letters for marketing purposes (Walker 1977). These were observed in a wide variety of formats, either stamped or moulded on the bowl, alone or within plain circles, wreaths, or horseshoes. There were also three stems stamped with “HENDERSON” on one side, and



“MONTREAL” on the other, a well-known Canadian manufacturer whose pipes were probably produced between 1846 and 1876 (Kenyon 1984). Many of the heels or spurs

had either positive or negative relief letters, possibly indicative of maker, including a “W” or “M” on each side, which was most common, a “G” on one side with a “W” on the other, an “I” on one side with a “D” on the other, and an “E” on one side with an “I” on the other. The latter three occurred only once each, while the other was observed on six different pipes. One last stem was stamped with the words “-a St. Ome- Dépose-.”

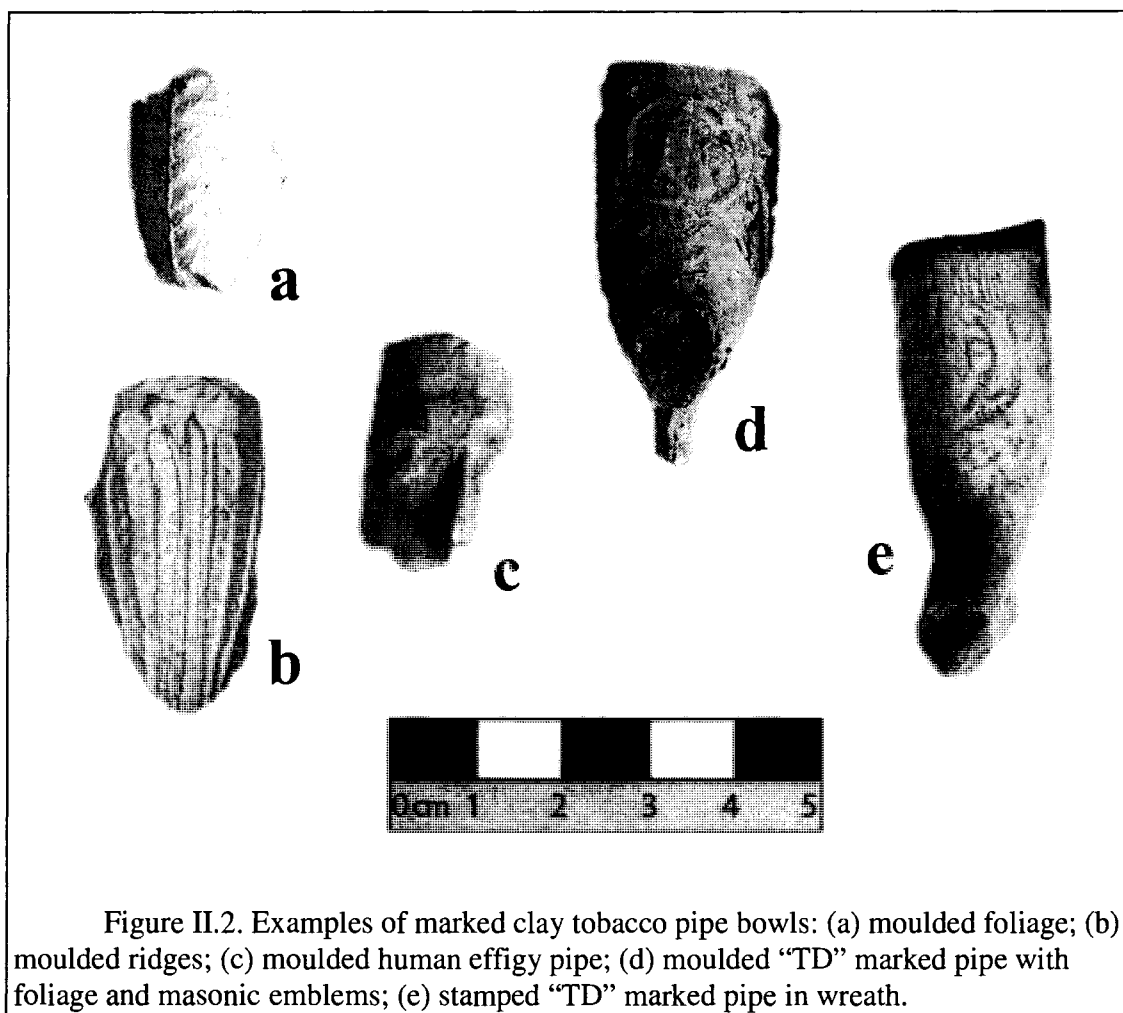


Figure II.2. Examples of marked clay tobacco pipe bowls: (a) moulded foliage; (b) moulded ridges; (c) moulded human effigy pipe; (d) moulded “TD” marked pipe with foliage and masonic emblems; (e) stamped “TD” marked pipe in wreath.

Fluted or ridged bowls were similarly common. Pipes with plant-based motifs and masonic elements were somewhat less frequent. Two examples of human effigy pipes

were identified, and one pipe bowl with a scenic motif was observed. This last included what appears to be an individual seated on a horse, surrounded by vines.

Ceramics

A wide variety of both decorative techniques and ware types were present in the Operation 1FY3 collection that were not useful in the analysis described in Chapter 4, due either to their paucity in the assemblage or lack of interpretive potential. Some of these were not included in Chapter 3 simply because no minimum vessels were identified associated with that ware type or decorative technique. Minimum vessels were only counted when sherds could be associated with an identifiable vessel form, making it possible for there to be sherds of a specific form without a corresponding vessel count.

Ware Types

Black Basalt. Marketed as 'Egyptian Black' by all but its primary manufacturer, Wedgwood, black basalt ware was in mass production by the early 1760s, and maintained its popularity into the mid-nineteenth century (Godden 1974:151). Named for its resemblance, in both hardness and colour, to the volcanic stone, it was a dull, unglazed, black-bodied stoneware. It was given its intense colour through the addition of both cobalt or ochre and manganese oxide (Godden 1974:151; Lewis 1969:96; Miller 1991:10). A highly decorated ware with modified surfaces including banding, ribbing, floral, and other motifs, most pieces were formed into busts, medallions, or teaware (Godden 1974:151; Lewis 1969:96). The latter category, including teapots, creamers, sugars, and bowls, are most commonly identified archaeologically (Miller 1991:10).

Mass production through the use of moulds, and a lack of secondary decoration or glazing, made basalt ware reasonably accessible and common (Godden 1974:152).

Every identifiable basalt sherd, of which there were 17 total in the Operation 1FY3 collection, could be assigned to the teaware category, specifically to teapots, by handles, filters, and body sherds (Figure II.3). Due to the variety of these sherds, it was not possible to identify more than one teapot. It is worth noting, however, that an additional teapot from the same context was partially reconstructed, and is on permanent display at Historic Fort York, indicating that at least two teapots can be associated with the officers garrisoned at the barracks.

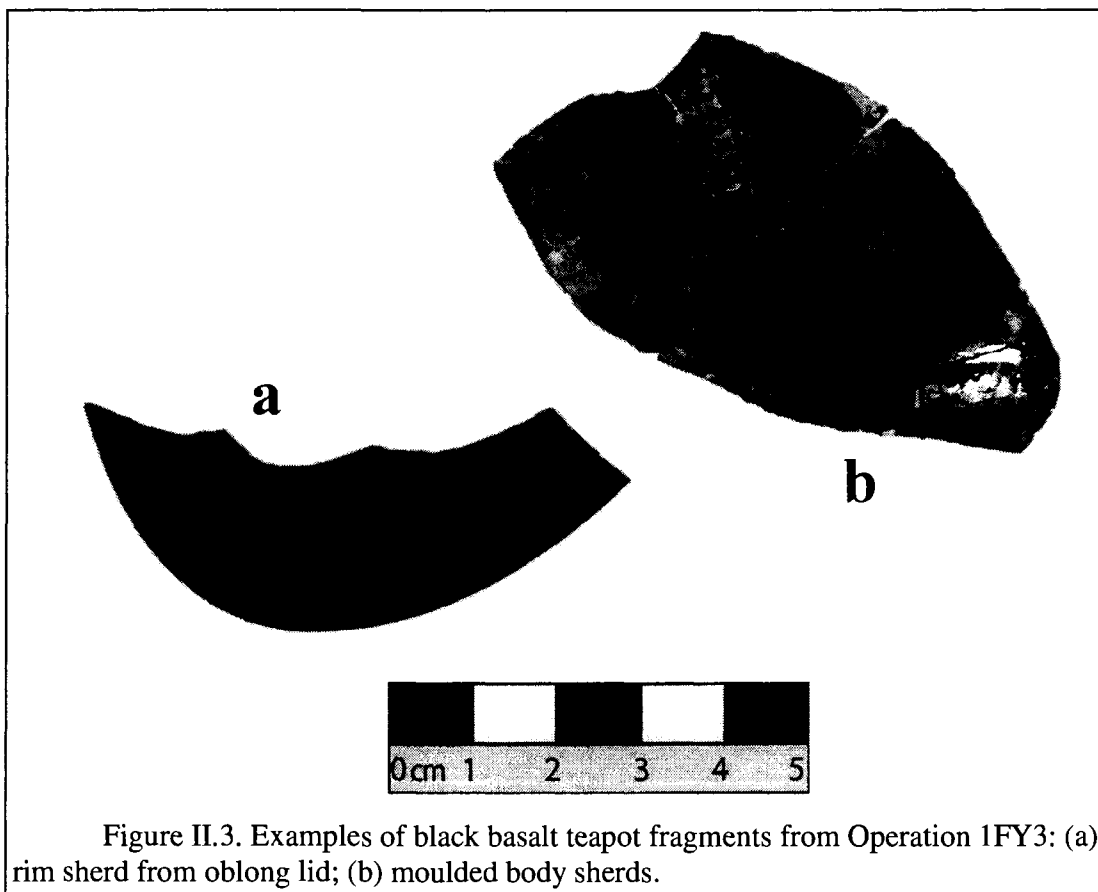


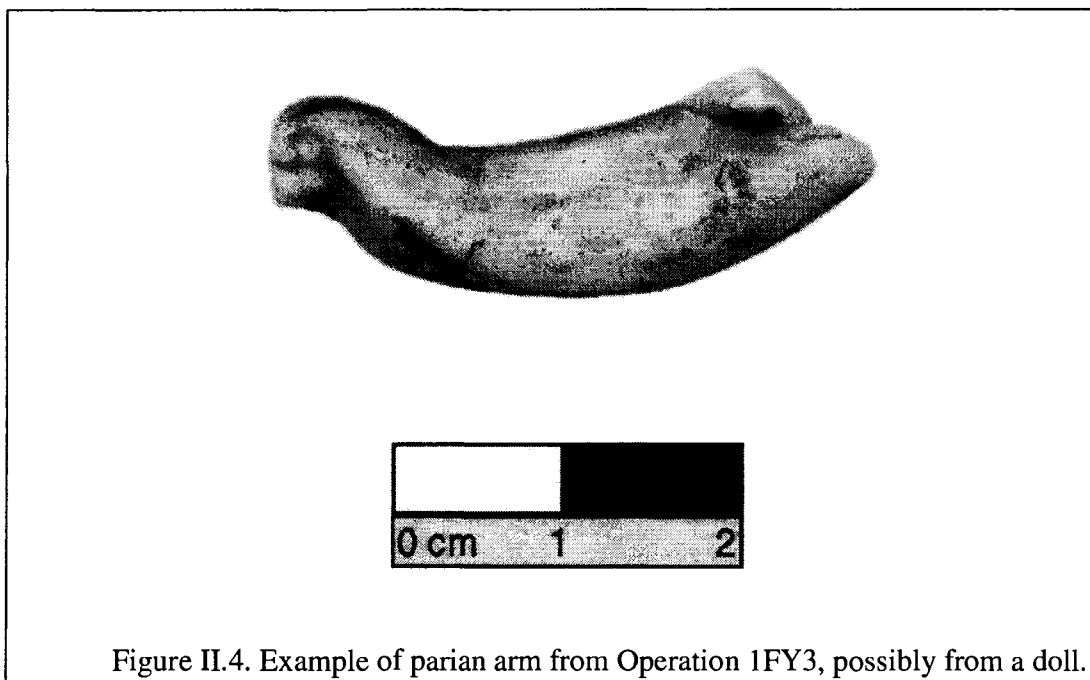
Figure II.3. Examples of black basalt teapot fragments from Operation 1FY3: (a) rim sherd from oblong lid; (b) moulded body sherds.

Blue-bodied Stoneware (Jasperware). Included in the Operation 1FY3 collection were a number (7) of small sherds of a light blue-bodied stoneware, belonging to unidentifiable vessels, which may represent Jasperware. Defined as “the dense vitrified stoneware ornamented with white figures on a coloured ground” (Lewis 1969:96), Jasperware is typified by a blue body created either by a solid colouring of the paste, or through tinting of only the surface (Godden 1974:174). A jug or ewer with such a ‘dipped’ body was identified in the collection, with a snake-bird moulded motif in white just under the rim. Two additional white stoneware sherds, with no more than a minimal glaze, were also identified, which may have been similarly representative of a jasperware hollowware vessel.

The seven blue-bodied sherds, with a solidly coloured paste, however, cannot be positively assigned to this category, mainly due to their small size. Most jasperware also tends to be unglazed, whereas these fragments all have a clear glaze covering their surface. Nevertheless, a blue paste is rare outside of Jasperware, suggesting that these also belong to this ware type.

Parian. Primarily an ornamental ware, parian was a porcelainous ceramic that visually resembled marble (Collard 1984:177-180). First produced sometime around the 1840s, parian wares became enormously successful before the end of the century, both in England and in Canada. It was used mainly in the production of statuary figures, busts, and even dolls. Occasionally embellished by painting, parian was typically left undecorated beyond the elaborate moulding.

In the Operation 1FY3 assemblage, one sherd of parian was identified, a fragment of an arm (Figure II.4). It appears to be of relatively low quality, and may have been part of a doll.



Gray Stoneware. Gray-bodied stoneware, used primarily for utilitarian vessels, was in production in England by the late seventeenth century (Godden 1974:53). Fired at a high temperature, the durability of this ware lent well to use for jugs, bottles, and other containers susceptible to rough handling. The degree of vitrification renders it unnecessary to glaze the ware for use with liquids, meaning that glazes are usually decorative, and often occur only on the exterior. Earth coloured glazes are dominant, as are salt and lead glazes (Godden 1974:53-54; Lewis 1969:51-62). Their use and reuse may be suggestive of lower levels of affluence.

A minimum of 16 containers, mostly brown-glazed, were identified in the collection (Figure II.5). Of these, at least two bear stamped markings suggesting they

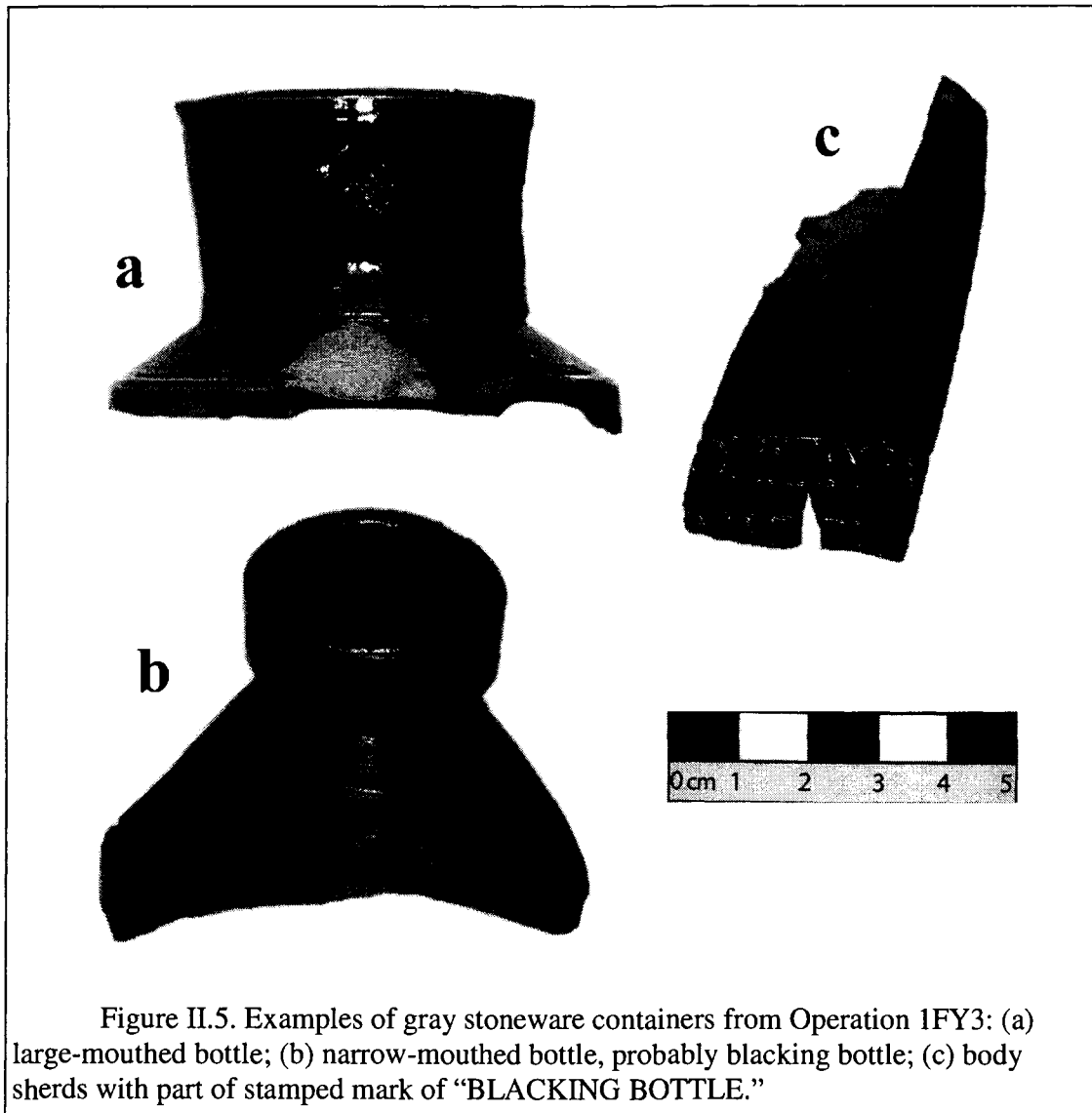


Figure II.5. Examples of gray stoneware containers from Operation 1FY3: (a) large-mouthed bottle; (b) narrow-mouthed bottle, probably blacking bottle; (c) body sherds with part of stamped mark of “BLACKING BOTTLE.”

were blacking bottles, used to ship and hold polish. Only one of the containers has a clear glaze on the interior of the vessel, all of the others decorated in various shades of brown.

White Granite/Ironstone. White granite or ironstone, as used in this context, should be considered separately from the white stoneware or stone china described in Chapter 3. While these latter often have a slight bluish tinge added to the paste, in order that they more closely resemble Chinese porcelains, white granite tends to have a perfectly white body, which is enhanced by a colourless glaze (Collard 1984:125; Miller

1991:9-10). It is typically undecorated, save for some unpainted moulding, often in the form of wheat, oats, or corn (Sussman 1985:7). Starting in the mid-nineteenth century, white granite became immensely popular, even gaining market dominance, due to its durability and simple table appeal (Miller 1991:10). As a result, it tends to be a better indicator of temporal patterns than socioeconomic ones, at least for the purposes of this thesis.

Six sherds of white granite were identified in the collection, with a pure white body and clear glaze. Only one of these is moulded in the manner typical of white granite, with a grain or corn motif in low relief. No minimum vessels could be identified from these sherds due to their small size and lack of diagnostic features.

Yellowware. Yellow wares, a deep buff coloured refined earthenware with a clear glaze that gave it a rich yellow colour, was often used for more utilitarian vessel types, at least by the middle of the nineteenth century (Collard 1984:141; Sussman 1997:77).

A minimum of six hollowware vessels was represented by 56 yellow ware sherds. These were most likely in the form of small beakers or cups.

Decorative Techniques

Canary. Canary is a term that can be used to describe yellow-glazed earthenware. Typically dating to the late eighteenth and early nineteenth centuries, canary wares were covered in a bright yellow glaze (Miller 1974:1-2). Sponged or painted decoration can be included on top of the glaze, which may then be secured by a second clear glaze. Only one cup or mug could be identified with this canary glaze, of the 18 sherds in the collection. Seven of the sherds included red sponged decoration, and one other was sponged in blue.

Flow-printed. Transfer printed vessels were occasionally treated chemically in order to induce a softening of the lines (Sussman 1979:233). This form of decoration generally post-dates the 1840s, after which point it became very popular before the introduction of moulded white granite (Miller 1991:9). It was also possible to introduce flowing colours on handpainted ceramics, usually in blue and purple (Miller 1991:8). Fifteen sherds were identified in the collection that had the characteristic softening of the pattern, though no minimum vessels could be identified. One was printed with black ink, while the rest were dark blue. All of the sherds with an identifiable decorative motif had a geometric theme, save one, which had a scenic pattern. Numerous sherds were affected by a slight degree of flow, which was probably accidental. Higher than usual heating, or poor workmanship, could have been responsible for the manufacture of some of these 'seconds'.

Lustre. In creating lustre decorated wares, potters often used a thin metallic film combined with paint, often to emulate metallic vessels, or to create fanciful shimmers (Majewski and O'Brien 1987:164; Sussman 1979:233). Two forms of lustre decoration noted in the Operation 1FY3 collection are worthy of note. The first, often called 'poor man's silver,' is a rim sherd from a jug with an exterior moulded in the form of a face, and covered in a silver lustre. The interior of the vessel was not similarly decorated, instead being simply glazed in white. The second major category was often termed 'Moonlight.' This specialized pink or purple and gold lustre, created with gold covering a light coloured background, could be applied either in solid bands or as a sponge-like layer (John and Simcox 1963:4-5; Majewski and O'Brien 1987:164). A minimum of two porcelain cups, with bands around the exterior rim on one, and around the interior rim on

the other, as well as one sponge covered chamber pot were represented in the collection by the 26 sherds exhibiting Moonlight lustre.

Sponge-stamped. A specialized form of sponge decoration, in which a pattern cut into a sponge or root was stamped repeatedly on the surface of the vessel. When the stamped design was applied to the unfired biscuit, this technique can be termed 'Portneuf,' though the practice was relatively rare (Collard 1984:144-145). Only four sherds were identified with a sponge stamped motif, including at least one chamber pot. A blue and brown floral and geometric motif was observed on the chamber pot, surrounding the exterior of the rim. The rim was also stamped in a light blue.

Glass

The majority of glass artifacts in the Operation 1FY3 collection could be catalogued as tableware, containers, or flat glass. Stemware and tumblers were described in Chapter 3 for use in analysis, while flat glass, typically for windows, is analyzed in Appendix III. The vast majority of container glass (844 fragments) could not be identified beyond having been a bottle, based largely on colour. While these are likely from wine bottles, it was not possible to differentiate them any further based on the guidelines and requirements dictated in Appendix I. The forms that could be identified in the collection are described below.

Bead. One glass bead was identified in the collection. The colour of the bead cannot be determined as a result of glass decay. It is rounded, and elongated, about 0.5 cm long.

Case Bottle. A minimum of one case bottle was identified in the collection. It was identified by its square shape, and dark green colour.

Decanter. Five fragments from the neck of a decanter were identified in the collection. They represent the collar of the decanter, and are not decorated. The age of the decanter cannot be determined.

Dish. Two fragments representing at least one dish were identified in the collection. The use of the dish is uncertain, but was roughly rectangular with rounded corners, and had ribbing moulded onto the body.

Light Bulb. Eight light bulb fragments were identified in the collection, which appear to represent only one bulb. The glass is frosted, and all come from a similar context.

Vial. Four fragments of a minimum of three vials were identified in the collection. One of these was a light blue-green colour, while the other two were colourless. One of the colourless vials had an octagonal body, while the other two vials had cylindrical bodies.

Wine Bottle. A minimum of seven wine bottles was identified from eleven fragments in the collection based on the characteristics of their bodies, finishes and necks, and bases (Figure II.6). Undoubtedly, many of the 884 bottle fragments in the collection were parts of wine bottles as well. Those that were identified were all manufactured by hand.

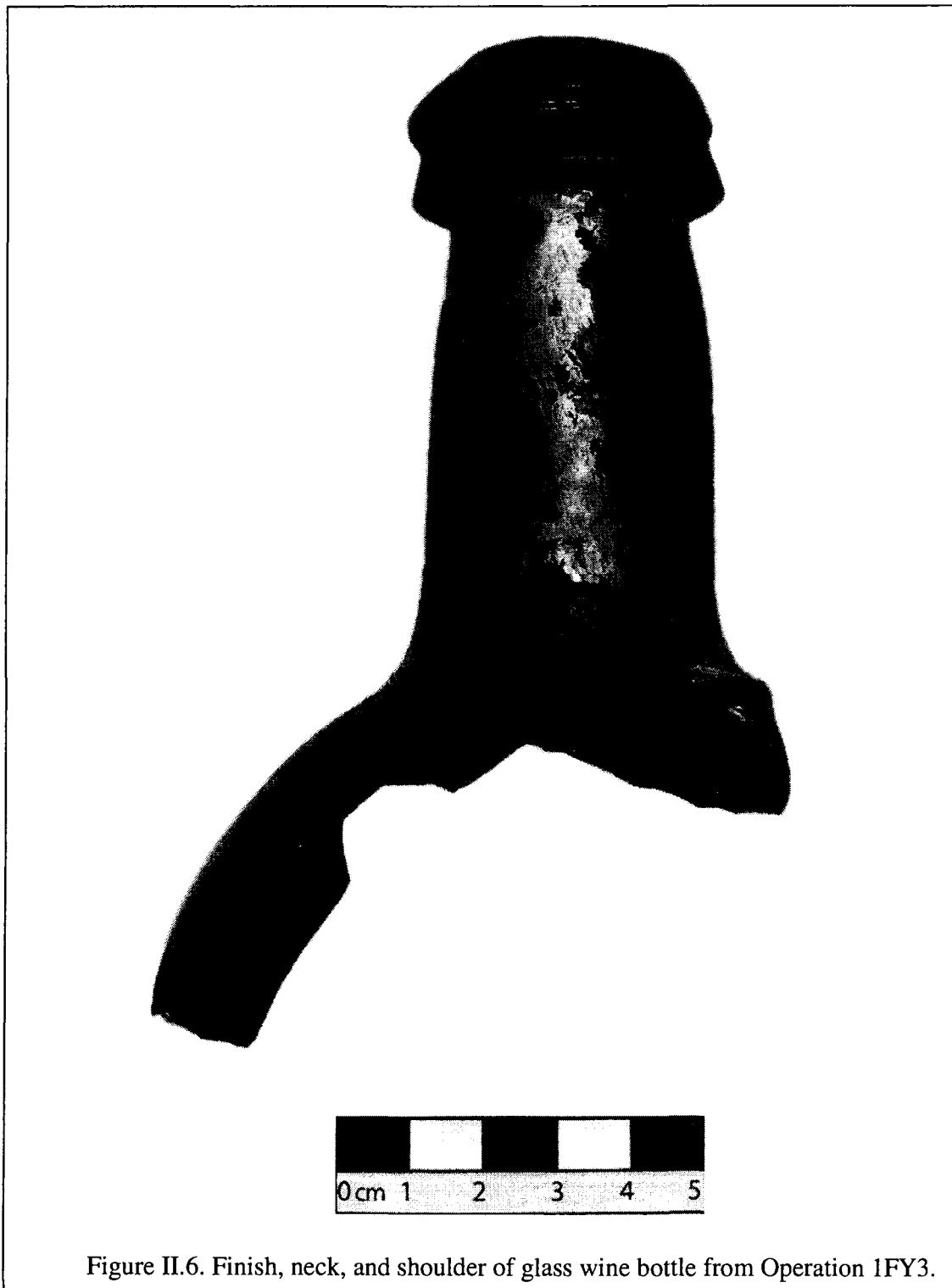


Figure II.6. Finish, neck, and shoulder of glass wine bottle from Operation 1FY3.

Faunal

Faunal remains were only minimally analyzed and identified only to taxonomic class. Further analysis of this component of the assemblage should focus on species identification, especially of mammalian remains, and on butchering marks. While these latter were not recorded, due primarily to limitations of time and scope, they were observed on a substantial proportion of the mammal bones in the collection. Foodways have enormous potential in the inference of socioeconomic status (Lyman 1987), and this would be an intriguing means by which to evaluate the methods used in the above thesis research.

Avian. There were 67 bones belonging to the taxonomic class *Aves* identified in the collection. Few of these showed signs of butchering, though some were undoubtedly domestic fowl.

Eggshell. There were at least five fragments of eggshell identified in the collection, though it is impossible to say how many eggs were represented due to their brittle nature.

Fish. There were 174 bones belonging to the various taxonomic classes of fish identified in the collection. Individual classes and species could not be assayed without a comparative collection.

Mammal. By far the most common faunal remains in the Operation 1FY3 collection, 740 bones belonging to the taxonomic class *Mammalia* were identified. There were numerous indications of butchering, including cut marks and saw marks. Cow, pig, and deer were identified, though a greater variety was undoubtedly represented.

Shellfish. There were 160 fragments of shell belonging to the taxonomic classes *Bivalvia* and *Crustacea* identified in the collection. Included among these were oysters, clams, and mussels.

Snail. There was one shell belonging to a member of the taxonomic class *Gastropoda* identified in the collection. Given the small size of the snail shell, it was likely an environmental inclusion.

Metal

The vast majority (98.5%) of the 3,902 metal artifacts identified in the Operation 1FY3 collection were composed of iron, a category used to denote ferrous metals with significant signs of corrosion. Aluminum, asbestos, copper, and steel (identified as a ferrous metal lacking corrosion), were also observed in the assemblage, in much smaller quantities. Most of the metal artifacts were badly decayed, making it difficult to assay their original form or function, as a result of the damp conditions at the site. It was possible to consult the original, incomplete catalogue created in 1987 for some of the identifications, which were used whenever available. Metal artifacts were only minimally analyzed, catalogued primarily for form, due to limitations of time, space, and experience. The following forms were identified in the collection.

Bar. Five iron bars, and one copper bar, were observed. These solid, rounded bars of metal served an unknown purpose, although at least one of them may have been a curtain rod.

Bolt. One iron bolt was identified in the collection, with a rounded, threaded shank, and octagonal head.

Buckle. One square iron single-bar buckle was observed. Its size (~ 3 cm) suggests it was probably part of a belt buckle.

Chicken Wire. One small fragment of chicken wire was identified in the collection. It is unclear whether it was used with fowl or in construction.

Coin. Five coins were identified in the collection, including two Canadian pennies, dated 1977 and 1985, one Canadian nickel, dated 1969, one Canadian dime, dated 1972, and one United States penny, dated 1962. Older coins were retained by Fort York, hence were not included in this analysis.

Foil. Ten fragments of aluminum foil were identified in the collection. Their use and origin is unclear.

Fork. One fragment of a three-tined iron fork was identified in the collection. It is badly corroded, and the tines are incomplete.

Handle. One iron handle was observed in the collection. It has a round head, but its origin is uncertain. It is possible that it was from an article of furniture, based on its size (~ 1 cm across).

Hinge. Four iron hinge fragments were identified in the collection. All four are of a size suggesting they came from smaller furniture items, such as chests, rather than from doors.

Hollow Tube. Four fragments of metal were in the form of a hollow tube. Three of these were identified as iron, while the other could not be identified by visual inspection. These tubes are no more than 1 cm. wide, and are thin-walled. Their use is unclear.

Hook. One iron hook was identified in the collection. It was in the form of an eyehook, a screw with an open loop at one end. Though its use in this context is

uncertain, this form of hook is often used to connect lines to permanent objects, like walls.

Knife. Five iron knife fragments were identified in the collection. All were blade fragments, including one that included a rounded tip. As all of them lack the tang portion of the knife, it is impossible to say whether they were table knives or clasp knives.

Light Bulb Base. Three aluminum bases from incandescent light bulbs were identified in the collection.

Nails. A total of 2,940 nail fragments were identified in the collection. The majority of these were either unidentifiable, due to their state of corrosion, or machine cut, based on the cross-section of their shank. While it is typically more reliable to differentiate between wrought, machine cut, and wire cut nails based on characteristics such as head attachment, and fibre direction, these were rendered impossible to observe due to decay. The majority of these were iron, with only four showing no signs of degradation, hence these last are considered steel. It was similarly not possible to measure the nails, in an effort to determine function (cf. Wilson and Southwood 1976:34-44), because very few were complete specimens.

Nut. Two octagonal iron nuts were identified in the collection, based on their shape and internal threading. It was not possible to measure the diameter of the hole due to corrosion.

Paperclip. Two iron paperclips were identified in the collection. Neither was plastic coated.

Pin. Two pins, one iron and one copper, were identified in the collection. Both had closed heads made of metal and sharpened tips.

Pipe. Two fragments of thick-walled, iron pipe were identified in the collection. Both had a threaded interior on one side, and threaded exterior on the other.

Pull tab. Four aluminum pull tabs, devices included on pop and beer cans for opening the container, were identified in the collection. All were of the stay tab style, which were designed to stay connected to the can.

Screw. Six screw fragments were identified in the collection. Of these, only one had a head that could be described, which was a slotted flathead screw. All of the shanks were suggestive of woodscrews, with a tapered, threaded shaft.

Spike. Six large spikes, five of which were catalogued as iron, were identified in the collection. The last was made of an unidentifiable metal. These large, nail-like spikes were of an uncertain function.

Strapping. At least 49 fragments of iron strapping were identified in the collection. It is likely that some of the unidentified flat or sheet metal was of a similar origin. Strapping was commonly used as binding for wooden barrels.

Tack. One iron tack was identified in the collection, with a wide head and short shank.

Tin can. Five fragments of tin cans were identified in the collection. One of these was from a can with a rounded rectangular shape, while the others were distorted beyond recognition. All were in poor condition, and their use is uncertain.

Washer. Two washers, one copper and one iron, were identified in the collection. Both had a bore of about ¼", their function unclear.

Wire. Nine electrical copper wires, six of which included their plastic insulation coating, were identified in the collection. In addition, one ferrous wire was also identified, its function uncertain.

Other

A total of 725 artifacts were assigned to the material category 'Other,' used to indicate material types that were either extremely infrequent or lacked interpretive potential. Many of these artifacts can be considered modern, suggesting that they are intrusive in the deposit. The majority of those that can be identified definitively as recent are accordingly high in the stratigraphic profile of the site, with the exception of a number of plastic wire casings and junction caps found in 1FY3B25, well below the surface. These are probably related the introduction or upgrade of electrical fixtures at the Officers' Barracks some time around the 1960s (Brown 1988:64). The following forms were identified in the collection.

Brick. Fourteen fragments of brick were identified in the collection. It is uncertain whether most of these are related to the structure, or perhaps even predate it, given that the Operation 1FY3 deposit was removed from its original context. One of the brick fragments is of particular note, as it has the word "RICE" adorned upon it in positive relief. Most of the bricks were of a reddish colour, with the exception of one buff fragment that appears to have been part of the original brick drainage system in the base of the areaway.

Bottle Cap Liner. One complete plastic bottle cap liner was identified in the collection. It is gray, and marked with "PEPSI" on one side.

Burnt Glass/Slag/Clinker. This catch-all category for heat modified glass, metal, or coal, was represented by 598 specimens in the collection. They are of little interpretive value as waste products.

Button. Four plastic buttons were identified in the collection. All were four-holed, and there were two gray, one white, and one red button. Each button was excavated from a lot that was very recent in the stratigraphic profile, suggesting they were modern additions.

Camera Film. One fragment of undeveloped, standard sized 35 mm camera film, was identified in the collection.

Clothing Tab. One translucent, white plastic clothing tab was identified in the collection. It was used to attach a label to a garment. Its origin in the assemblage is unclear.

Crayon. One black wax crayon was identified in the collection. Its use and origin is unclear.

Cup. Five fragments of plastic cups, two of which conjoined, were identified in the collection. They represent at least two white plastic cups, one with ridges and one without.

Electrical Wire Cap. Five electrical wire joining caps, used to join leads together safely at junction points, were identified in the collection. All of these were black, with ridged exteriors and threaded interiors.

Foil Wrapper. Three fragments of foil wrappers were identified in the collection, only one of which could be tentatively identified as cigarette packaging.

Game Piece. One stone piece was tentatively identified as a gaming figure (Figure II.7). It is made of ground stone, with four thin incised lines circumnavigating its body. It is roughly bullet-shaped, with a slightly concave base and a rounded tip.

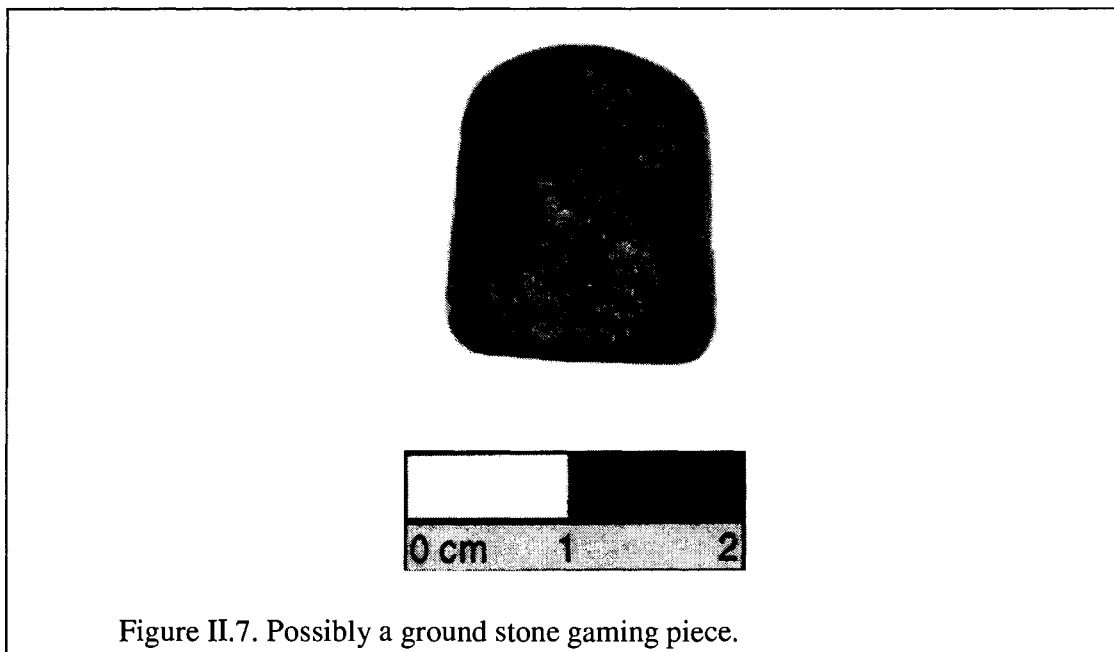


Figure II.7. Possibly a ground stone gaming piece.

Insulating Tape. Six fragments of black insulating tape, probably vinyl based, were identified in the collection. They were probably used during the installation of electrical fixtures at the fort.

Mortar. Five fragments of mortar, the cement-based material used as a buffer between bricks, were identified in the collection.

Pen. One fragment of a ball point pen was identified in the collection. It was a piece of the plastic exterior shell, clear, and roughly hexagonal.

Pencil Lead. Nine fragments of pencil lead, composed of graphite, were identified in the collection. Their origin and association is uncertain.

Plaster. Two fragments of plaster were identified in the collection. These gypsum-based materials are often used in the construction of walls. It is also possible that a thin parge coat lined the areaway.

Plastic Sheeting. Nine fragments of translucent plastic sheeting of various sizes were identified in the collection. They are probably associated with construction, possibly including insulation lining.

Shingles. Seven fragments of slate shingles were identified in the collection. All were a blue-gray coloured slate.

Stir Stick. One plastic stir stick was identified in the collection. It was colourless, and hollow with a central constriction.

Straw. One plastic straw was identified in the collection. It was white, and a standard 1/8" size straw.

Wire Casing. Seven fragments of plastic electrical wire casing were identified in the collection, all of which were black. It is likely that they were stripped from the electrical wire, though it is possible that the metal decomposed in place.

Wood. Three small fragments of largely unmodified wood were identified in the collection. All of these were directly associated with nails or nail fragments, and were thus probably related to construction or furnishings.

Wrapper. One small fragment of cellophane wrapper was identified in the collection. It was colourless and had no indication of manufacturer or product.

Appendix III – Window Glass Thickness

Flat glass, generally associated with window panes, has been used to some effect to date nineteenth century historic archaeological sites, though with limitations (Kenyon 1980). Though colour, indicative of metallic oxides present in the glass, may be associated with age, it is unreliable at best (Frank 1982:142). Only a small amount of a trace element in the glass, such as iron, can cause significant colouring, and it would be nearly impossible to define colouration accurately, as it can vary substantially depending on the thickness of the glass (Roenke 1978:19, 107).

Rather, it is the thickness of the glass pane that has generally been considered most indicative of age (Kenyon 1980; Roenke 1978). Changes in the production of window glass, mainly the conversion from the crown glass method to newer techniques, like the cylinder process, between 1845 and 1850, resulted in a significant thickening of the flat glass shipped to North America from Britain (Roenke 1978:35, 116). Through experience and experimental analyses, Kenyon (1980) has shown that sites dating to the first half of the nineteenth century will have an average window glass thickness of less than 1.6 mm, while later nineteenth century sites will have an average closer to 2.0 mm. Roenke (1978:116) was able to derive a more detailed chronological chart, based on his analysis of window glass from 15 Pacific Northwest nineteenth century sites. Jones and Sullivan (1989:172) reject this use of window glass, based especially on issues related to time lag. They suggest that window glass is unreliable because panes could remain a part of the fixture so long as it did not break, and that alternative artifact categories are more reliable instead. Window glass thickness, according to Jones and Sullivan (1989:172), is

useful only insofar as being indicative of the date of earliest occupation. Nevertheless, Roenke (1978:118) finds it a useful measurement, as long as strict control over the deposit, with recognition of any possible intrusive events, is maintained, and there is an extensive knowledge of the site's history.

Window glass was arguably the most common artifact form in the Operation 1FY3 collection, with 3,811 fragments identified. It is possible that the various social classes used different grades of window glass; although double grade glass was available, it was not economical in the early nineteenth century, especially when it had to be shipped across the ocean and through half a continent (Roenke 1978:35-36), hence it could have been viewed as another means by which to express one's superior socioeconomic status. Accordingly, I decided to measure the thickness of the window glass in the Operation 1FY3 collection for two purposes. First, it was a simple means by which to confirm the dates assigned to the assemblage, thereby testing the degree to which the east areaway may have been used subsequent to its closure ca. 1827. Second, it will allow others to consider doing the same with other collections, comparing in terms of socioeconomic status.

These fragments of window glass were thus separated by lot, or stratigraphic level, and all lots with more than 30 fragments were analyzed for mean, median, and standard deviation (Table III.1). Mean, or average, was considered the most appropriate measure, following Kenyon (1980) rather than the modal approach advocated by Roenke (1978), due to the relatively small sample size of some of the lots. In this way, the flat glass component of 34 lots was assessed in terms of thickness, measured to the nearest

0.1 mm. No attempt was made to differentiate panes of glass, due to time requirements, the degree of fragmentation, and the degree of mixture at the site.

Provenience	Count	Mean	Median	Standard Deviation
1FY3B2	253	1.52	1.5	0.41
1FY3B4	37	1.62	1.6	0.41
1FY3B7	101	1.41	1.3	0.35
1FY3B8	106	1.50	1.4	0.39
1FY3B10	108	1.33	1.2	0.39
1FY3B11	141	1.41	1.3	0.47
1FY3B13	245	1.41	1.3	0.30
1FY3B14	123	1.41	1.3	0.36
1FY3B14/15	126	1.39	1.4	0.42
1FY3B16	232	1.37	1.3	0.28
1FY3B17	123	1.40	1.3	0.28
1FY3B18	117	1.45	1.3	0.41
1FY3B21	38	1.37	1.3	0.22
1FY3B24	48	1.37	1.3	0.36
1FY3B25	86	1.36	1.3	0.35
1FY3C2	30	1.86	1.9	0.41
1FY3C3	59	1.83	1.7	0.68
1FY3C6	52	1.89	1.9	0.25
1FY3C8	54	1.85	1.8	0.34
1FY3D2	41	1.78	1.6	0.64
1FY3D12	32	1.55	1.6	0.30
1FY3D22	39	1.42	1.4	0.42
1FY3E4	126	1.52	1.4	0.36
1FY3E6	99	1.61	1.5	0.43
1FY3E8	75	1.45	1.4	0.30
1FY3E9	60	1.47	1.5	0.39
1FY3E11	52	1.50	1.5	0.32
1FY3E14	45	1.28	1.2	0.23
1FY3E15	53	1.42	1.4	0.34
1FY3E16	149	1.45	1.4	0.35
1FY3E17	197	1.34	1.3	0.27
1FY3E18	110	1.43	1.4	0.38
1FY3E20	153	1.39	1.4	0.22
1FY3F7	59	1.52	1.5	0.31

Table III.1. Mean, Median, and Standard Deviation of window glass thickness (in mm) by stratigraphic lot.

The results of this analysis (Table III.1) suggest that the vast majority of the lots predate the ca. 1850 changes in window glass production technologies. Only seven of the lots averaged more than 1.6 mm, two of which (1FY3B4 and 1FY3E6) were only slightly thicker, at 1.62 mm and 1.61 mm, respectively. Four of the other lots all originated in suboperation 1FY3C, at the north end of the areaway, where there was also excavated a concrete light base (Brown 1988:65). Lot 1FY3D2, the last of those with an average window glass thickness over 1.6 mm, also showed evidence of disturbance, possibly related to the installation of a clay and tile drain in the 1960s (Brown 1988:65-66).

The medians of these seven lots are in accord with an early nineteenth century occupation and deposition, with the exception of the four units from suboperation 1FY3C. This suggests that the other lots – 1FY3B4, 1FY3D2, and 1FY3E6 – have had their distributions skewed as a result of the inclusion of relatively few very thick fragments. This is supported by the raw data. For example, in lot 1FY3D2, three fragments measuring 3.3 mm were observed, which with only 41 fragments could heavily bias the mean measurement.

Standard deviations were derived for each of the 34 lots represented in Table III.1, with the intention that it may be possible to associate it with the degree of mixture within a lot. The mean of these standard deviations is 0.36. Seven of the lots fall outside of one standard deviation of the mean: 1FY3B11 ($\sigma = 0.47$), 1FY3B21 ($\sigma = 0.22$), 1FY3C3 ($\sigma = 0.68$), 1FY3C6 ($\sigma = 0.25$), 1FY3D2 ($\sigma = 0.64$), 1FY3E14 ($\sigma = 0.23$), and 1FY3E20 ($\sigma = 0.22$). Whether these values represent greater and lesser degrees of mixture cannot be determined without more stratigraphic information. It is worth noting, however, that some directly associated lots have wildly differing values, such as 1FY3C2

and 1FY3C3. Additional data and experimentation with more controlled sources is required in order to validate this theory.

Appendix IV – Ware Types

The primary goal of this section is to describe the ceramic ware types used in the analysis in Chapters 3 and 4, as derived from the degree of vitrification (Class) and colour of the paste (see Appendix I), including glaze colour when appropriate. Decorative technique must also be considered in differentiating between white granite and white stoneware.

Black Basalt. Matte black paste, semi-vitrified body (stoneware), unglazed.

Blue Stoneware. Solid light blue paste, semi-vitrified body (stoneware).

Coarse Red Earthenware. Red/orange/brown paste, coarse non-vitrified body (coarse earthenware).

Gray Stoneware. Gray or gray-brown paste, semi-vitrified body (stoneware).

Parian. Soft white paste, semi-vitrified or vitrified body (stoneware or porcelain), unglazed or lightly glazed, clear.

Porcelain. White or blue-tinged paste, vitrified body (porcelain).

Refined Cream-coloured Earthenware. Light off-white to white paste (cream-coloured), refined non-vitrified body (refined earthenware), light yellow-green tinged to clear glaze.

Refined Red Earthenware. Red/orange/brown paste, refined non-vitrified body (refined earthenware), unglazed.

Refined White Earthenware. Light off-white to white paste (white), refined non-vitrified body (refined earthenware), light blue-green tinged to clear glaze.

Stone China. Blue-gray tinged to white paste, semi-vitrified body (stoneware), clear glaze.

White Granite. White paste, semi-vitrified body (stoneware), clear glaze, only decorated by moulding.

White Stoneware. White paste, semi-vitrified body (stoneware), blue tinged to clear glaze, may be decorated by painting, enamelling, or transfer printing.

Yellowware. Yellow paste, non-vitrified to semi-vitrified paste (refined earthenware or stoneware), clear glaze.