

Some Thoughts on the Impact of Epidemic Disease and European Contact on Ceramic Production in Seventeenth Century Huronia

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This paper provides an overview of the contributions of Martha Latta to the study of Huron women's pottery production in the seventeenth century and offers some preliminary thoughts on the impact of European contact on the manufacture and use of earthenware vessels. The high quality of contact-period vessels, as well as their elaborate and standardized forms, is explained as a consequence of the emergence of pottery specialists. Specialization is described as a form of task differentiation whereby a small number of women are producing vessels for a large communal group. Such an arrangement would have been an efficient way to organize labour in light of women's increasingly heavy agricultural and food processing work loads following the intensification of European trade. A temporary decline in the quality of pottery is noted for the epidemic period and some consideration is given to understanding the degree to which trade kettles replaced traditional earthenwares. My goal is to identify major trends in vessel design and manufacture and relate them to changes in socio-economic circumstances brought about by the intensification of Native-European interaction and trade.

Honouring Martha Latta

This article is an appropriate venue in which to honour a scholar who has committed so much of her career to the study of Huron pottery. When Marti first took an interest in Huron ceramics, she was one of many scholars who were working to define culturally and temporally sensitive pottery types and attributes that could be used in the study of Huron origins, the recognition of tribal boundaries and village relocations, and the identification of sites of historic interest, among other themes in Huron research. Although she made important contributions to mainstream discussions regarding the identification of ethnic (i.e., tribal) groups (Latta 1976a; 1987a), historic mission sites (Latta 1985a; 1988) and village relocations (Curtis and Latta 2000) in Huronia, Marti also moved beyond these more popular research questions, pursuing an interest in the technological and functional aspects of ceramic vessels (not rim sherds!).

Marti was one of the first researchers to use the "ware" concept in Huron archaeology (Latta 1987b) and to define formally (both descriptively and quantitatively) functional categories of Huron vessels, offering comprehensive discussions in both field school manuals (Latta 1995a)

and site reports (Latta 1994, 1995b). In her summary of the Beeton site ceramic collection, co-authored with Pat Reed (1993), Marti used a design theory approach to define several functional categories of Huron vessels based on general trends in vessel size, shape, fabric and decoration. Her research on Iroquoian stemware (1987b) was the first formal and published attempt to describe a vessel (rather than rim sherd) type and to document its spatio-temporal distribution. In it, she describes unusual "goblet-like" vessels that have been recovered from contact-period Huron and Neutral sites in southern Ontario. She interprets these vessels as native imitations of European chalices, perhaps those used by Jesuit priests during communion rites. While some have criticized this view, citing a Mississippian influence for their origin (Ramsden and Fitzgerald 1990), there is no question that the stems of several of these specimens bear an uncanny resemblance to modern day wine glasses (Latta 1990a). A notable example from the Ball site, for example, consists of a flat circular disk (or base) attached to a cylindrical stem. Some of the problems we encounter in interpreting these vessels come from the fact that they are never found intact. Bowl and stem fragments are rarely found

together and cannot be mended to provide a better picture of the overall vessel form. Regardless of how one interprets stemmed vessels, Latta's description was important, since it had long been believed that Huron pots were only used for cooking. Due to a lack of detailed functional studies (but see Martelle 2002; Strauss 2000), Iroquoian scholars have often (and by necessity) worked under the assumption that there is very little or little significant functional diversity in Iroquoian assemblages (e.g., Allen 1999; Warrick 1984). This assumption negates the need to take functional (and use-life) considerations into account when performing even the most basic of rim sherd comparisons to address questions of site similarity and relocation.

Marti's interest in pots also led her to seek insight into the thought processes, motor habits and design sequences of Huron potters, culminating in two separate conference presentations, "Evidence of Laterality in Prehistoric Ceramic Technology" (1976b), and "In Search of the Individual in Prehistory: The Huron Potter" (1985b), and her 1980 article published in the *Proceedings of the 1979 Iroquois Pottery Conference*. This last work was insightful for its day and is relevant to modern theoretical discourse and studies of *chaîne opératoire* and potting *habitus* (e.g., Dietler and Herbich 1989, 1998; Gosselain 1992, 1998; Mahias 1993; van der Leeuw 1993). In this article Latta relates "the differences between finished pots, represented by types and attributes" to the differences in the "behaviour structures" used in their creation (Latta 1980:159). Common "behaviour structures" were identified through the reconstruction of sequences of decorative and motor acts used in applying motifs to the pot surface. Overlapping lines and clay distortions helped to define those aspects of the design, called collar outlines and major motifs, that were applied early in the planning and decorative process—those elements, in other words, that served both to organize and compartmentalize the decorative space. Applied later, secondary motifs and modifying elements were used to enhance or alter the appearance (and perhaps meaning) of major motifs and decorative spaces. This perceptual ordering of decorative acts,

defined therein as the "decision structure" of ceramic decoration, was found to be stable through pre- and post-contact times (Latta 1980:160-161). Marti's analysis of the decorative paradigm inspired and framed recent studies of micro-variation in rim, vessel and potting styles at several Huron sites (Gromoff 2000; Martelle 2002).

Her ceramic research was closely tied to her interest in Huron women. These two foci intersected in her 1991 article "The Captive Bride Syndrome: Iroquoian Behaviour or Archaeological Myth?" published in *The Archaeology of Gender: Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. This publication (and the conference itself) helped launch mainstream archaeological interest in both women and gender, not only by critiquing and unveiling the biases of previous research, but also by bringing attention to how gender helped shape the archaeological record through the varied experiences of individuals in the past. Although Marti's interest in Huron women informed even her early work (e.g., Latta 1976a), it was in this forum that it was brought to the fore in a strongly voiced critique of the more commonplace androcentric and western biases inherent in early studies of Huron pottery.

Marti's concern regarding the portrayal of women went beyond the Huron past to issues of gender balance in the discipline of archaeology (Latta 2002). Together with Pat Reed and me (Latta et al. 1998), Marti sought to make known the hidden and overlooked contributions of early women scholars in Ontario archaeology by retelling their nearly forgotten stories and acknowledging their roles in the unfolding of our field. These women were not just wives, cooks and assistants, but were fine researchers in their own right.

As this brief survey reveals, Marti Latta's interest in Huron ceramics has taken her down many paths. In her effort to consider the totality of Huron ceramic systems, that is, the technological, social, ideological, symbolic and economic aspects of pottery manufacture and use, and her refusal to study pottery "at a distance," or outside of a detailed consideration of systemic context

and the women responsible for it, Marti has profoundly influenced a generation of students and scholars and set the direction for future studies.

Some Thoughts on the Impact of European Contact on Ceramic Production in Seventeenth Century Huronia

Prior to 1980, Huronia was a major focus of archaeological research in Ontario. Since that time, scholars have shifted their attention to other, seemingly less-understood geographic areas, time periods and topics. Since 1990, there has been little focused study of Huron sites or populations except, perhaps, for topics for which there was little prior knowledge (e.g., Monckton 1992). This trend has only intensified with the relative paucity of research-driven field projects and the dominance of cultural resource management archaeology in Ontario. However, in the last few years, Huron scholarship has revived, partly due to a renewed interest in our understanding of contact between native and European people in this and other parts of the continent. Contact-period studies, too, have gained momentum of late largely resulting from the relative abandonment of the acculturation paradigm, the once paramount interpretive framework used to model post-contact changes in native societies. Through their inheritance of late nineteenth and early twentieth century Eurocentric and colonial biases, acculturation studies generally portrayed a very narrow view of Native-European interaction, all too frequently depicting native individuals as passive recipients of European goods and customs. Overall, this change in theoretical direction has opened doors to a better understanding of the lives and experiences of Huron men and women in the seventeenth century.

There is no question that European contact brought many changes to Huron society. The exposure of Huron populations to a fundamentally different worldview—to the missionization efforts of religious zealots and to increased economic competition following the intensification of the fur trade—radically altered the social and economic tapestry of local communities. Part of

the new economic reality was a heightened demand for dried and pounded corn, processed beaver pelts and craft goods—things traded either directly or indirectly for European novelties, such as metal cooking utensils, firearms, glass beads and woven cloth. Undoubtedly, these new demands placed an incredible stress on traditional modes of labour mobilization and production in Huron communities. Yet, given that contact-period Huron studies have traditionally been historical rather than anthropological in focus, there has been little direct discussion of the intricacies of Native-European interaction at the most basic level as experienced by individuals, families, clans and work groups in the course of everyday life. Nor has there been much time given to understanding the “materiality” of European contact, including epidemic disease, and how such things as increased labour demands, the arrival of new utilitarian items, and population loss altered day-to-day interactions involving the procurement, production and use of goods for both regular and ceremonial use.

Given their distinct roles in Huron society, men and women would have experienced and reacted to the novelty, strains and stresses of their altered existence in very different ways. In *Chain Her By One Foot*, Karen Anderson (1991) describes tumultuous times for Huron women following the arrival of the Jesuits and the establishment of missions dedicated to the inculcation of Christian beliefs and, in turn, the “Europeanization” of native society (see also Anderson 1985). With this came strong challenges to the social and ideological underpinnings of the gendered balance-of-power in Huron society, as the autonomy and authority of women was undermined by the missionaries’ persistence in instilling notions of rightful male dominance. In their attempt to replace the symmetry and complementarity of male and female roles in Huron society with asymmetrical and hierarchical gender relations, the Jesuits found stern opposition in Huron women who, more often than not, refused to conform to the kinds of behaviours that were expected of good Christian women and necessary for the establishment of an “appropriate social and moral order”

in Huron communities. On the other hand, the moral and economic 'fringe' benefits of Christianity were often enough to make conversion attractive to many Huron men (at least temporarily), despite the fact that a common consequence of the adoption of Christian values was isolation and ostracism (Anderson 1991:3). The adoption of Christianity and the institution of Christian marriage drew lines between Huron men and women, especially when women were expected to swear obedience to their husbands (Anderson 1991:1-2) and as long as men were instructed to use every measure possible to constrain the "devilish inclinations" in their spouses.

Like their resistance to French and Christian ideals, women's adoption of European items was sometimes slow (Latta 1976a:130-131), often individualistic and mostly opportunistic, resulting in the persistence of traditional values and the meshing of new and old traditions. Material items recovered from seventeenth century Huron sites reflect such persistence and change. By the early 1600s, European goods become common on Huron sites, reflecting an increase in both direct trade with the French and intermediary exchanges with neighbouring native groups. Archaeological assemblages from the contact period contain a diversity of European items. Some of them, like Jesuit finger rings, rosaries, glassware and stoneware, are likely the personal belongings of the French missionaries who lived among the various Huron nations. Others, like glass beads, blankets, woven cloth and various metal implements (e.g., axes, knives, awls and scissors) were likely adopted for the function for which they were originally manufactured. Some of these items would have been quickly welcomed as substitutes for traditional implements like bone awls, ground stone celts and flaked stone tools, items that may have been overly time-consuming to manufacture, were traditionally acquired by trade or whose raw materials were becoming increasingly difficult to procure. Other items of European manufacture were put to more unusual or unintended uses. For example, Iroquoian artisans often transformed thimbles and various other items into decorative accoutrements that were fastened directly to

clothing or perforated and then suspended from sinew to form a fringe (van Dongen 1996:115).

This new technological inventory broadened the range of choices for men and women to meet the productive challenges of their daily lives. While it was true that Native-made items were reliable, predictable and well-adapted to the tasks for which they were used, European goods often fashioned quick alternatives in the growing and ever busier fur trade economy. Nonetheless, Huron recipients were often selective in their acquisition and adoption of these new items (often choosing implements that best fit with existing practices or *habitus*) and continued to manufacture many traditional items long after the arrival of seemingly equivalent European substitutes. Some of the more enduring native industries, like pipe-making and house-construction, remain vibrant through the contact period and show little, if any, signs of abandonment. Iroquoian women's agricultural and food processing technologies are thought to have been especially resistant to change, as traditional practices remained in use by New York State groups into the early twentieth century (Parker 1968; Waugh 1916).

The Huron ceramic industry reiterates these themes of persistence and change. During this period, there are several notable changes in Huron ceramics, all of which suggest that women were not abandoning their production but, instead, actively negotiating and perhaps re-envisioning their craft in light of their changing circumstances. The remainder of this paper concentrates on the varied effects of European contact on Huron women's production and use of earthenware vessels. It examines how the intensified labour loads of women might have encouraged incipient specialization in the production of vessels, which continued to play important social, ideological and functional roles in Huron life despite the availability of European metal kettles and following the loss of local artisans to epidemic disease.

Our knowledge of the contact period in Huronia comes from two main sources: an extensive but incomplete archaeological record; and the written and cartographic records of European

explorers and missionaries who visited and lived among the Huron in the seventeenth century, most notably Samuel de Champlain (Biggar 1929), Gabriel Sagard (Wrong 1968) and several notable Jesuit priests (Thwaites 1959). These sources are complementary to the extent that the historic texts most often discuss matters of politics, warfare and diplomacy, religious conversion, ritual and belief systems whereas the archaeological data provide evidence for more intimate and mundane aspects of everyday life. Unfortunately, the historic documentation provides only a brief and unquestionably biased view of Huron life, with most of the details of interest tucked away in thick and rhetoric-laden descriptions of political and religious events that dominate the writers' recollections of their encounters with the Huron and their attempts at religious and social conversion. In general, many of the tidbits of information that archaeologists wish to have (descriptions of material culture, house construction, labour organization, economics, craft production, refuse disposal, food procurement and processing), and that we otherwise use to reconstruct both the day-to-day behaviours of site inhabitants and less material facets of behaviour and identity, are absent from these textual records. Furthermore, because the European observers were men, we gain only marginal insight into lives and activities of Huron women.

In the end, we are left with an archaeological record dominated by broken bits of pottery and only a few, brief textual entries regarding how pots were made and used. Pottery-making receives only quick mention, often in a list of the "trifling and petty household duties" of women (Wrong 1968:133; see also Boucher 1964:101-102) or embedded in generalizing but essential descriptions of "the lifeways of the savages." Sagard's narrative of A.D. 1632 (Wrong 1968:109) provides the best-written summary of the manufacturing process, although it too provides only basic details. We are left with innumerable questions about the range of choices for potters regarding materials, tools and techniques, the meaning of vessel forms and decoration, the range of skill and capacities for development in potters and potting traditions, the mechanisms

for the transmission of pottery knowledge, the scale and intensity of production, not to mention fundamentals of pottery use. Fortunately, ethnographic analogy, experimental archaeology and detailed studies of archaeological specimens can help us to address these enduring issues and make sense of the transformations that took place in Huron potting after contact.

Huron Pottery in the Contact Period

A preview of contact-period ceramic assemblages suggests that, like so many other native traditions, pottery production was a dynamic, evolving industry. Contact-period vessels demonstrate a pattern of increased standardization and elaboration of vessel form and design. By the early 1600s, Huron pots appear in a variety of sizes and shapes, testifying to both the vitality and importance of the craft and the wide range of roles that pots played in Huron society. The features of many vessel forms (for example, paste, shape, exterior surface treatment and decoration, rim form and shape, use-wear, presence/absence of appendages) are sufficiently consistent to suggest that women were producing standard vessel types for various uses (Latta and Reed 1993; Martelle 2002:196-255).

Small serving vessels like cups and bowls (Ramsden 1990; Wintemberg 1946:159-160), although rare, were likely used during the consumption of liquid foods and beverages. Narrow-mouthed, tall-shouldered storage jars (Figure 1) are common on historic Huron sites; modern analogues suggest they would have been well adapted to dry and liquid storage (Rice 1987:238). Cooking pots occur in a variety of sizes, presumably relating to the size of the family, or consuming group, or the type of food being prepared. Although the size (capacity) of cooking vessels appears to range from between one and two litres to between eight and ten litres, modal categories can be identified. The smallest cooking pots (about 20 cm high and 17 cm round; Figure 2) would have been used by individuals who ate alone (for example, hunters, warriors and travellers away from the village and menstruating women [Wrong 1968:67]; see Latta



Figure 1. Pottery jar with incised shoulders from the Ball site (BdGv-3).



Figure 2. Small cooking pot from the Ball site (BdGv-3).

1991; Snow 1994:107), or they may have been employed to process foodstuffs that were prepared in smaller portions. Medium-sized cooking pots (approximately four to five litres in capacity) would have supplied the needs of a nuclear family, whereas large kettles (Figure 3) would have been useful for events like feasts,



Figure 3. Large cooking pot (kettle) from the Ball site (BdGv-3).



Figure 4. Small “canoe” vessel with handles from the Ball site (BdGv-3). This specimen was recovered complete, likely due to its hard, heavily burnished surfaces.

where dishes were prepared in batches or for a large number of people. Unlike other vessel types, kettles generally lack castellations or other appendages. Small vessels with strongly-projecting, handled rims and heavily burnished surfaces (Figure 4) were likely used as transport vessels (see Latta 1991; Martelle 2002:229-230) and were carried by hunters, traders and other individuals who journeyed away from the village. These vessels were durable, multipurpose pots, whose compact design and Teflon-like interior and exterior surfaces made them more resistant to breakage and more practical for long-distance

travel. Perhaps not so coincidentally, some of the vessels have been recovered intact or have suffered only minor cracking. Many of these “canoe vessels” (Latta 1991) have sharp, ‘prow-like’ projections beneath the castellation. Some of these vessels resemble ones that are found in the Mississippi River Valley, the American Southwest and Central America and which have a “prolongation of one side of the body into a round point” (Holmes 1903:181), forming a shoe or moccasin shape which, in profile, also takes on the form of a bird (Holmes 1903:181-182)—perhaps symbolic associations tied directly to travel.

Huron ceramic assemblages often contain miniature forms of many of these vessel types. Prior to the detailed research of Patricia Smith (2003), Iroquoian scholars often thought these miniature forms to be toys or the work of children but this category of vessels, defined primarily by size, exhibits a wide range of technical and formal variability. While many poorly made tiny vessels might rightly be termed “juvenile,” some small pots are very skilfully made and share virtually all of the characteristics of their normal-sized counterparts. This diversity is amply demonstrated in the collection of miniature jars (Figure 5), kettles and pots from the Ball site, some of which are near-replicas of larger vessels. There are other potential uses for these smaller, well-made pots. First, small pots might have served as props in storytelling and ritual. Several Iroquoian tales (e.g., Hewitt 1903:224-246) mention miniature implements of various sorts (pestles, mortars, bone skewers, pots), all of which are magically transformed into larger functional implements. Miniature pots and pipes also played a role in dream-guessing (Tooker 1970:81; Tuck 1971:40-41), curing and witchcraft (Parker 1923:368,369) and in ceremonies related to the Dance of the Little People devoted to the appeasement of a group of “little folk,” whose good will is sought by all (Cornplanter 1963:46; Parker 1909:168). Second, small pots would have been useful for storing seeds, pigments, medicinal products and other small portions of dried and semi-liquid goods. One small vessel from the Ball site (with a diameter of 8 cm and a height of 10 cm) has a red-stained interior and may have been used, therefore, for mixing or storing paint or pigment.



Figure 5. *Miniature jar with incised shoulders from the Ball site (BdGv-3).*

It is clear that by the contact period (if not before) all pots were not of equal value or function. The varied pieces just discussed likely formed the basis of women’s cooking or pottery tool kits (Latta 1995a:72; Latta and Reed 1993:24-26). In addition, there may have been vessels for both everyday and special-occasion use (Martelle 2002:196-255). Some vessels are much simpler than others which, instead, are subject to a considerable degree of either formal or decorative embellishment. Alongside their utilitarian importance, pots had significant ideological worth. This value is evident in the production of an assortment of unusual, perhaps foreign-inspired, vessel types that, by inference from modern analogues (Blumer 2004:139; Hardin 1983), might have been used to celebrate or symbolize various rites of passage, including birth, death, marriage and political alliance. The symbolic act of unity may be represented in two of the most prominent of these forms: the double (or multiple) orifice vessel, in which two pots are joined side by side; and the nested vessel (Figure 6), a multiple-rimmed pot that gives the impression of multiple (usually two or three) stacked pots (one on top of another) or nested pots (one sitting inside another). This stacking concept is clearly evident in precontact times (Finlayson et al. 1987:24) but becomes

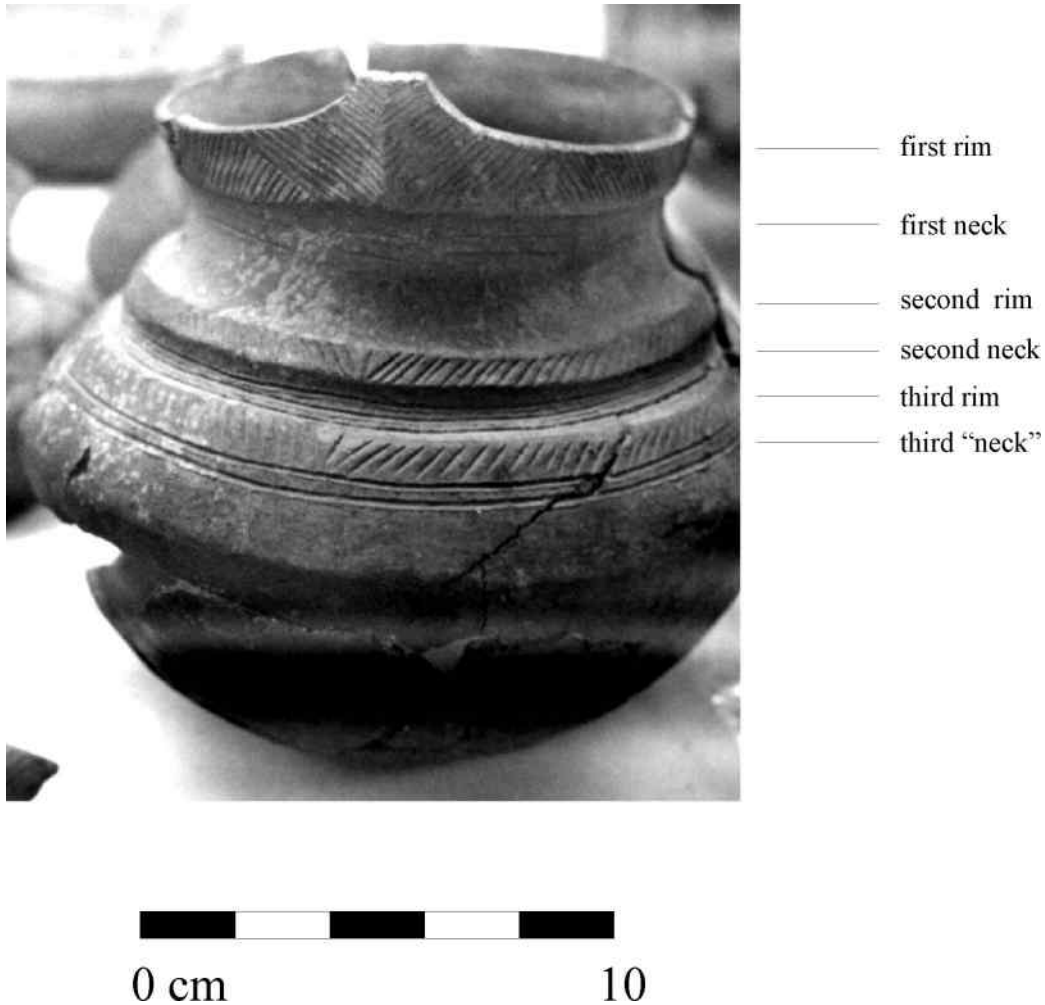


Figure 6. “Nested” vessel with multiple “rims” from the Ball site (BdGv-3). Note that the first, second and third “rims” all have oblique decorations with a chevron motif on the “castellation.” The first, second and third “necks” have horizontal decoration.

more stylized in the seventeenth century. Contact-period nested vessels have multiple necks and rims, although the second and third “rims” are represented by thickened, raised bands that are decorated in exactly the same way as the main rim, even insofar as they contain a “semi-castellation” at the front of the pot. Both of these multiple pot concepts have an almost pan-American distribution, suggesting a possible symbolic and ideological association. Local variants of double-mouthed and stacked pots have been identified on other Iroquoian and Susquehannock sites (primarily in mortuary contexts; e.g., Kenyon 1982:Plates 8,

41, 199; Strauss 2000:143). Based on a brief literature review, they also appear in the American Southwest (where they are referred to as wedding vessels; e.g., Hardin 1983), the Ohio and Mississippi River valleys (e.g., Griffin 1943; Holmes 1903:Plate 162), South Carolina and coastal Florida (Blumer 2004:139; Fundaburk and Fundaburk Foreman 1957:167, 172, 180; Squier and Davis 1998:Plate 46), although their date of origin is not well-documented. Such vessels likely occur in other areas as well. Their appearance on Huron sites may reflect both the group’s participation in a pan-regional symbolic

economy and the increasingly cosmopolitan nature of their communities.

This morphological diversity and standardization coincides with a rise in the production of increasingly elaborate vessel designs and a peak in the quality of manufacture. Although this trend may begin slightly earlier, by the time of the contact period vessels have complex shapes incorporating elegant curvatures, multiple and sometimes sharply projecting castellations, one or more handles and sharp carinations at the shoulder (e.g., Holmes 1903:Plate 148; Lennox 2000:Figures 20, 21; Martelle 2002:Plate 1). By modern potting standards, all of these features are tricky and cumbersome to mould and even more difficult to see successfully through the firing process. Sharp changes in wall direction and thickness can create thermal differentials in the pot body during heating, causing various parts of the vessel to expand and contract at different rates. This may result in cracking, explosion and vessel failure (Rice 1987:237). In modern contexts, the production of complex forms is left to the most skilled potters who, through their experience, have learned to craft vessels and manipulate firing temperature in such a way as to control for this potential source of disaster.

By the early seventeenth century, the majority of Huron pots are more than competently made. Both historic observers and Iroquoian scholars have regularly praised the skill and competence of Huron potters (Jury and Jury 1955:49; Kapches 1981:1; Quimby 1966:34; Lafitau in Waugh 1916:54; Wray et al. 1987:63; Sagard in Wrong 1968:109). Intuitively, many pots are “things of beauty” (Lennox 2000:57) and sheer works of art, something that has earned Huron women the reputation of being some of the best potters in the Northeast (Lennox 2000:57; Wray et al. 1987:84). On the whole, contact-period vessels are carefully formed and smoothed, masterfully decorated and well-fired. By this time, the standard wall thickness is significantly reduced from earlier periods, with many vessels having walls of only three millimetres thickness (Martelle 2002; Lennox 2000:57)—a remarkable technical achievement in modern potting contexts (Simmonds 1984:63). At the Molson

site “the thinness and hardness of many of the...vessels is extraordinary—they almost ring at the tap of a fingertip” (Lennox 2000:57). Although rim motifs may be simpler and more standardized compared to earlier periods, vessel decoration is nonetheless complex, carefully planned and well executed. There are few instances of obvious ‘mistakes’ in planning and judgement. Although these facets of Huron ceramics cannot always be appreciated in studies of rim sherds alone, they are readily evident in the numerous reconstructed vessels from various contact-period sites, including Auger and Molson (Lennox 2000), but particularly Ball, where several hundred pots have been wholly or partially reconstructed (Martelle 2002). By all modern ethnographic and crafting standards, these accomplishments signal a high degree of technical and artistic competence.

There is also evidence of increased standardization in the work and *chaîne opératoire* of potters. In contact-period assemblages it is often possible to recognize the work of the same individual, both superficially (Lennox 2000) and quantitatively (Martelle 2002), based on strong similarities in the execution of rim shape and decoration. The coefficient of variation for rim size and shape variables, as well as the placement, size and spacing of decorative elements for various vessel categories from the Ball and Auger sites (Martelle 2002:397-399), are within the statistical range (10% variability or less) of those observed for modern potters who practice their craft to make their living (see Benco 1987, 1988; Longacre et al. 1988; Stark 1995). This standardization index is often used as a proxy measure for judging the skill, efficiency and regularity in production. It is based on the notion that, with more regular and frequent practice, a potter’s motor skills and procedures become more routine and habitualized, fewer deviations appear in their products and variability is minimized (Stark 1995:233).

The Emergence of Pottery Specialists

I attribute these peaks in the quality and diversity of Huron vessels to the continued importance of ceramics and to the social arenas in which they were actors, and perhaps also to the solidification

of specialist roles in manufacture. Modern ethnoarchaeological studies of apprenticeship and practice in indigenous pottery-producing societies suggest that such a high level of standardization and skill is only achieved by repeated and prolonged engagement in the craft and certainly not by intermittent production geared toward personal replacement. A form of specialization, whereby a small number of women made pottery, may have been the only way that potters achieved such high levels of artistic and technical skill, particularly since pottery production was not a year-round activity (see Allen and Zubrow 1989).

If specialization existed, pottery production was likely restricted to a small subset of women who showed natural talent for the craft, were otherwise unable to contribute to subsistence tasks, or who inherited the obligation or right to perform this duty, as was true among the Mandan and Hidatsa of the Plains (Bowers 1965; Wilson 1977). This type of productive organization would not have been so different from other means of labour mobilization in Iroquoian societies, like mutual aid societies and cooperative work groups, whereby a small number of individuals performed some task (for example, harvesting or gathering) and, through their labour, provisioned a much larger communal group. This type of system not only encourages social and economic interdependency but also fosters the advancement of technical and artistic skill, whether that be dancing, the recitation of myths and oral histories, hunting, arrow manufacture or pottery making. Such an important division of labour is critical to the advancement and preservation of technological knowledge, which might otherwise (with seasonal and infrequent production) be lost. Specialization may have provided women with an opportunity to gain social prestige through the acquisition and use of their skills and through the display and distribution of their products. It may also have contributed importantly to risk management by creating social and economic ties among members of different households and individuals with diverse interests and talents that could be called upon in times of crisis.

An economic incentive for “restricted production” or “incipient specialization” in pottery

manufacture was the increased time and physical demands of Huron women’s work that accompanied the intensification of European trade (Martelle 1999). While also responsible for a number of physical and social labours, women were the primary subsistence producers in Huron society, with their agricultural products contributing up to 75 percent of the diet (Biggar 1929:125; Heidenreich 1971:162-164; Kroeber 1939:146; Monckton 1992:3-5, 86; Popham 1950:88; Schwarcz et al. 1985; Tooker 1964:62; Trigger 1976:34-36). Based on demographic and caloric estimates, it has been suggested that women’s seasonal cultivation was equal to 0.6 kg (1.3 lbs) of corn per day per person (Heidenreich 1971:197; Trigger 1969:28; 1976:34-36), not entirely accounting for crop loss and in addition to the annual production of a two-to-four year surplus used in communal feasting during times of crisis and for trade (Parker 1968:24; Tooker 1964:61; Waugh 1916:6). In order to achieve these yields, women would have had to work hard. The numerous hours spent planting, hoeing, monitoring, and harvesting would have been followed by the laborious task of corn processing. The pounding, grinding, and sifting of corn are traditionally time-consuming and physically demanding tasks taking up a considerable portion of a woman’s day (P. Arnold 1991; Brumfiel 1991; Cornplanter 1963:30; Dorsey 1899; Ember 1983:290). This might well explain why historic observers describe the lives of Huron (and Iroquoian) women as laborious, industrious and “slavish” (see Du Creux 1952:85; O’Brien 1996:319; Waugh 1916:4).

Based on Huron cosmology, crop production fell squarely within the realm of women so that, even with intensified workloads, the prevailing gender ideology precluded the large-scale involvement of men. For this reason, the management of female labour was likely always a major concern for the Huron and other Iroquoian groups who, from the time of their origins, relied extensively on the products of women’s horticulture. By the pre-contact period, the Huron had developed an intensive system of corn cultivation that placed more and more time and physical demands on individual women and matrilineal work groups, a

burden that was compounded after contact by a rise in the need for corn as a commodity regularly traded for European goods (Martelle 1999, 2002; Trigger 1976:413, 1978:62). The fact that much of the corn traded or consumed during hunting and warring expeditions is often described as meal (Biggar 1929:53; Trigger 1976:63; Wrong 1968:101-102) suggests that women's involvement in corn processing would have also increased following contact.

That women's lives were already busy raises concerns about how pottery making was integrated into daily and seasonal work schedules. Pottery manufacture is itself a labour intensive activity. It requires: locating, digging and transporting raw materials; processing clays into a mass of suitable size and consistency through pounding, sieving, sorting and mixing; forming through coiling, drawing, shaping and scraping; and finishing by decorating, smoothing and polishing. Preparation entails not just the collection of raw materials (e.g., clay, temper, water) but also the gathering of suitable fuels and the construction of firing facilities. The processes of moulding, smoothing, burnishing and decorating require both time and patience.

Recent archaeological studies throughout North America have questioned how women were able to cope with changes in their work schedules following the adoption and intensification of cereal agriculture (Claassen 1991:286; Crown and Wills 1995; Spielmann 1995). James Brown's (1989) controversial model to explain the origins of pottery production posits that women, rather than men, were more likely to become potters both because their work was confined to the household or household periphery (and pottery manufacture can be easily carried out there) and because men had no time to engage in the activity—as they were constantly engaged in subsistence agriculture. His model does not, however, account for societies like the Huron in which women are both potters and the primary subsistence producers. Nor does it acknowledge the equally time-consuming female-dominated tasks of food processing. In the American Southwest, the time required for dried corn processing alone is thought to have

encouraged the development of task differentiation among women (see discussion in Rautman 1997). It seems unlikely that pottery-making would have easily fit into every Huron woman's work schedule, particularly since it was conducted during the most labour-intensive months of the year. Specialization, as a form of labour or task allocation, may have been a way for women to divide their communal workload in an efficient manner while also ensuring the production of durable, high-quality end products.

The Impact of Epidemic Disease

Following the establishment of Jesuit missions in Huronia in the 1630s, and coincident with the onset of large-scale epidemics, pottery of depreciable quality appears on a select number of sites. One of these is Thomson-Walker, a village described by Andrew Hunter (1902) and investigated by various avocational and academic researchers since the late 1940s, including the Royal Ontario Museum (Penny 1971), and the University of Toronto (Latta 1995a,b). In stark contrast to earlier contact-period sites, a good proportion of ceramics from Thomson-Walker are crudely formed and decorated (Martelle 2002:256-307). Many pots have irregularly shaped rims, thick and bulky walls, and sloppily executed decoration (Figure 7). There is considerable intra-vessel variability for rim and wall thickness, temper, collar height and finishing, among other variables. In most cases, it results from a lack of sufficient and consistent shaping, forming, smoothing or scraping of surfaces and, in the case of decoration, poor planning. Paste matrices are often loose and crumbly, indicating inadequate mixing and compaction during forming. Paste inclusions of quartz and mica are often too large or too plentiful to allow good bonding. Large particles project from the vessel surfaces, causing cracking. Whereas potters resident on other sites applied decoration with considerable control, many Thomson-Walker potters did not and, instead, made noticeable mistakes. Some vessels have unsmoothed and jagged lips, irregularly spaced, incomplete or non-continuous rim decoration, or lines of incisions started and then

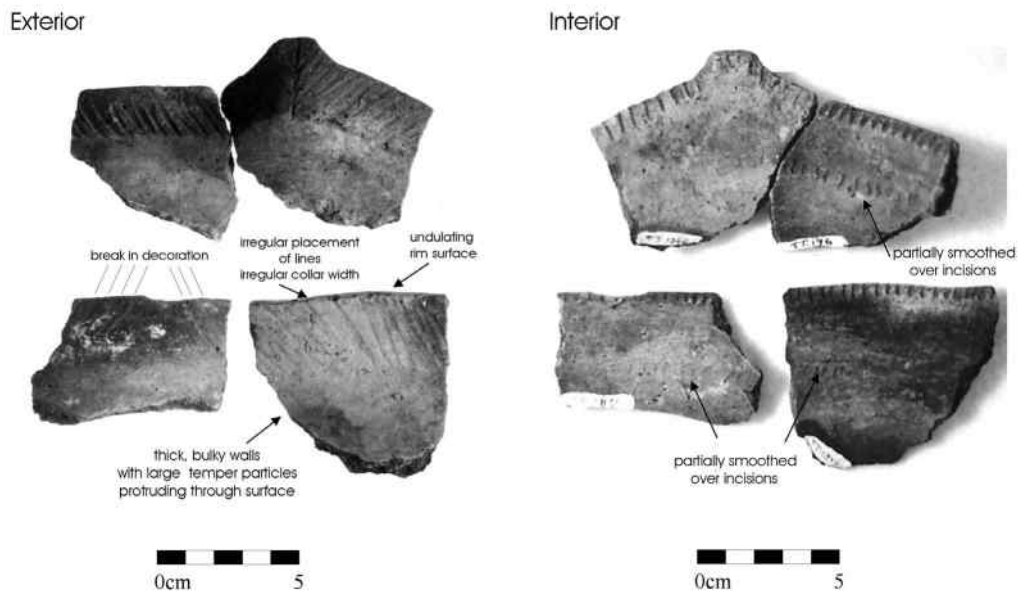


Figure 7. Sloppily decorated interior incised vessel from the Thomson-Walker site. Note the undulating rim contour and the second (and sometimes third) set of partially smoothed over incisions below the lip.

hastily smoothed over. It would seem that the latter (smoothing over) indicates a potter with little experience in how to apply obliquely oriented lines when working around a curved surface that is never entirely in the field of vision. These substandard vessels appear to be the work of novice potters who had little familiarity with the process and were practicing without the benefit of long seasons of apprenticeship.

I argue that this decline in quality and craftsmanship signals the abrupt and premature death of skilled and experienced potters as a result of European-introduced diseases (Martelle 1999; 2002). The death of practiced (or specialist) potters would have occurred before they were able to pass on their knowledge to younger artisans, who were subsequently forced to take up the craft with little guidance. This is not to ignore the fact that poor quality wares can and have been explained otherwise. For example, Huron potters might have also lowered their potting standards in an attempt to expedite the manufacturing process and free up time for other, more pressing activities. Krause (1985:168-169) has offered this explanation for the appearance of thicker, less exactly decorated ceramics on contact-period Arikara sites after increased demand for agricultural produce

left less time for making pottery. In this instance, many of the non-critical steps in the manufacturing process were left out or altered in order to save time. Although Huron women faced a similar circumstance, the incongruous traits of Thomson-Walker vessels are not ones that would arise from a simple speeding up of the manufacturing process. A well-trained potter is efficient and well aware of the potentially disastrous effects of such things as over-tempering and under-firing. I think this explanation has more value when combined with the impact of epidemic disease and the loss of skilled artisans. In 1637, Father LeJeune states that epidemics had hit Huron villages hard. So many were sick that individuals were not attending to their normal tasks and even the most essential tasks, like fishing and the harvesting of crops, were seriously impaired (Thwaites 1959:13:87-89; Trigger 1976:501). Healthy individuals, who now had to both care for the sick and provide for themselves, had little time to participate in non-essential activities. The effects of epidemic disease must have been cataclysmic given that historic records do not mention a decline in the volume of trade following devastating population losses (Trigger 1976:603-604). Women's individual labour

loads must have been particularly burdensome and families would have quickly depleted their stored surpluses for both personal consumption and exchange. It may be that both of these factors, the loss of skilled potters to epidemic disease and intensified workloads, along with a third factor—the restriction of the craft to a small number of women—all contributed to the disruption in pottery manufacture at Thomson-Walker and other epidemic-period sites. Historically, these factors played a role in the decline in quality of ceramics made by Mandan and Hidatsa women, whose villages were reduced by as much as three-quarters of their population by smallpox in the late 1700s (Krause 1985; Wilson 1977).

Crudely made Huron-like or Iroquoian-like vessels have also been attributed, however, to Algonquian potters (e.g., Wright 1981:46). I do not believe that this explanation is adequate for the Thomson-Walker case, although the work of non-local potters on Huron sites should be expected given the multi-ethnic character of many communities. A statistical comparison of these ceramics with ceramics of the nearby Auger site does not support the idea that Thomson-

Walker vessels were crafted using foreign templates or non-local *habitus*. There is a remarkable similarity between community, group and individual level potting styles at the two sites (Martelle 2002:256-307). Both Auger and Thomson-Walker are situated on the Mount St. Louis Ridge (Figure 8), traditionally viewed as the territory of the Attigneenongnahac or Cord Nation. Using traditional glass bead chronologies, Auger has been dated to GBP II (A.D. 1600 and 1625/30, Latta 1990b:15) and Thomson-Walker to the first part of GBP III (A.D. 1635-1649, Latta 1995a:16; Figure 9). Given the close geographic proximity of the two sites, they could be part of the same community relocation sequence. Principal components analyses and a comparison of sample means for rim and decoration metrics of selected vessel types (Martelle 2002:256-307) confirmed that there were relatively few differences in the ceramic samples analyzed from the two sites. Thus, the potters from these respective villages had a shared understanding of what certain vessel types should look like and employed the same basic procedural schemata for shaping the rim, as well as for orienting and

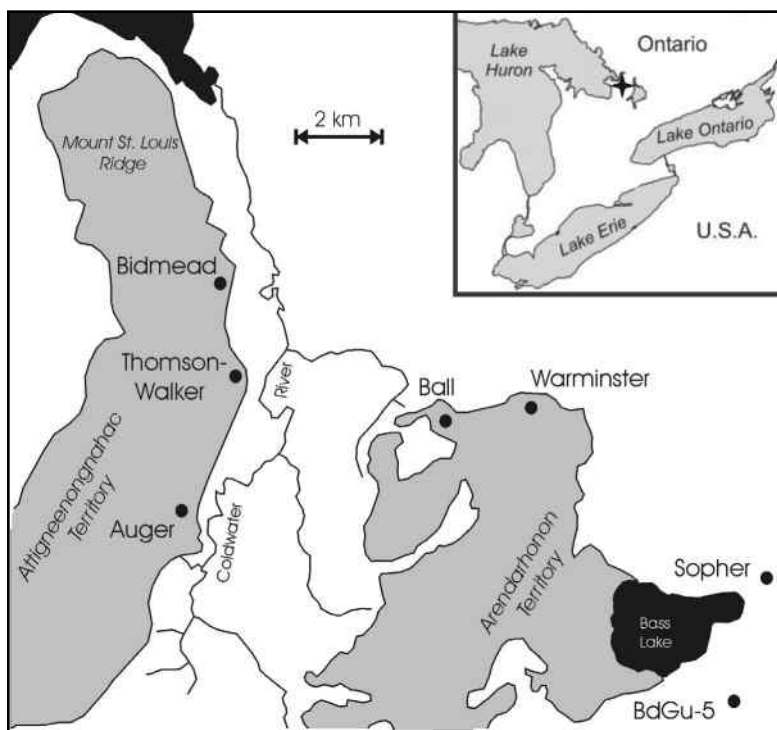


Figure 8. Sites in the Mount St. Louis area of Huronia.

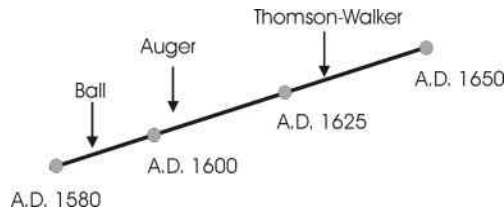


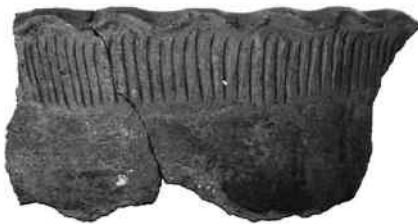
Figure 9. Temporal placement of the sites mentioned in this article.

applying decorative motifs (Figure 10). These similarities are related to either community or tribal level traditions, evident from the fact that vessels from the Auger and Thomson-Walker sites are significantly different from vessels from the Ball site (Martelle 2002:256-307), a probable Arendahronon or Rock Nation village located on the opposite side of the Coldwater River (Figure 8). The only obvious difference between Auger and Thomson-Walker ceramics is quality. Several vessels from both sites appear to be made by the same potter, or potting group, and have decorative motifs that appear to have been incised using the same tool. Based on these observations, I am more inclined to attribute the substandard

Thomson-Walker pottery to a disruption or change in potting due to the loss of expert potters and practice of less experienced artisans. The characteristics of Thomson-Walker pots suggest their manufacture by potters with a visual rather than experiential knowledge of local traditions of pottery manufacture. If the Thomson-Walker vessels were made by Algonquian potters, one would expect to see more statistically-significant differences in technical and formal variables.

Throughout the epidemic period, there are other changes in Iroquoian material culture that might be related to changes in the production, acquisition, alteration and use of material items brought about by population loss, rise in medicine societies, use of curing rituals, and general disruptions in the normal rhythms of everyday life. For example, on Attawandaron (Neutral) sites, longhouse size diminishes and ossuary interments appear for the first time or become more frequent (Lennox and Fitzgerald 1990:432). Various healing-related artifacts like sucking tubes, perhaps associated with shamanistic curing (Lennox and Fitzgerald 1990:423), and effigy or pinch-faced

a) Auger



b) Thomson-Walker



- no thickening at collar base
- vertical to near vertical incised lines
- closely spaced scallops

c) Ball



- thickening at collar base
- oblique incised lines
- widely spaced scallops

Figure 10. Scalloped lip vessels from the Auger, Thomson-Walker and Ball sites.

pipes (see Kearsley 1998) become more common. The abandonment of stone projectile point manufacture in Neutralia, followed by the introduction and use of pots cut from copper and brass kettles, has been attributed to the death of local artisans (Lennox and Fitzgerald 1990:423; Trigger 1976:601). At the Thomson-Walker site, the stone tools, like the ceramics, are of poor quality and the village palisade is rather flimsily constructed (Latta 1995b:8). Thus, changes in manufacturing traditions are not undocumented on Huron sites dating to epidemic or post-epidemic times (Jackson et al. 1992; Jury and Jury 1955:32, 34, 37; Trigger 1976:425).

The Impact of European Metal Kettles

I am also convinced that the appearance of this aberrant pottery is not attributable to the abandonment of craft due to the growing availability and use of European metal kettles. While in some circumstances the loss of artisans may have encouraged dependence on European trade goods, there is as yet no good evidence for the cessation of pottery production in Huronia through the epidemic period or even following the dispersion of 1649 (see discussion in Trigger 1976:410-411). Although under an acculturation paradigm one might be tempted to assume that the “superior” European metal wares replaced traditional clay pots, there is no good evidence of this. We cannot yet say how plentiful or steady the supply of metal kettles was (see discussion in Moreau 1998), whether metal implements were perceived as technological or ideological equivalents, or how well they fit with existing culinary practices. Further, we cannot turn to historic texts for assistance since there are limited references to “pots,” “vessels,” and “kettles,” but no mention of the material. Rarely is it obvious whether the writer is referring to a metal or ceramic vessel. Sagard (Wrong 1968:84) describes the Huron’s use of metal kettles for feasts but notes that they were borrowed from the Jesuits and later returned. The situation he describes is one of casual adoption due to a shortage of pots rather than one of regular use.

Patterns in the archaeological recovery of metal kettles hint at other possible uses for these

implements. Whole metal kettles (even large fragments thereof) are rarely recovered on Huron sites. More common are small kettle pieces that have been cut into a variety of shapes and reworked into various implements, including projectile points, expedient cutting tools, rings, bracelets, tubes, tinkling cones and pendants (Anselmi 2003). It has often been assumed that this reworking occurred after the kettles wore out (Trigger 1976:411; see also Fitzgerald et al. 1993:55), although it is equally plausible that kettles were acquired solely for their raw material and were not used for cooking (Latta 1976a:229; Evans 2002:52, 91). This latter hypothesis is supported by uncertainty about how serviceable trade kettles were, particularly after 1600, when the market was flooded with poor quality brass varieties that were less durable than their earlier copper counterparts (Fitzgerald 1982; Fitzgerald et al. 1993). At this time, European manufacturers sought to increase their profit by using less copper, spending less time hammering the kettles into shape and employing simplified rim support mechanisms, less sturdy handles and bale attachments (Fitzgerald 1982:10). The potential consequence of these manufacturing decisions was the production of a cheaper but shorter-lasting item that was easily misshapen and worn.

Further, archaeological specimens speak to another problem—the early onset of wear and corrosion due to residual flaws in the processed material. Many kettles from archaeological sites throughout the Northeast are lacking bases (e.g., Kenyon 1982:Plates 7, 55, 57-58, 62, 107, 116; Fitzgerald et al. 1993). While this could be the result of post-depositional factors and “ritual killing” (Martin 1975:115), it may also derive from stresses acquired during the manufacturing process. As discussed briefly by Fitzgerald (1982:10), brass becomes brittle after cold-working so that kettles that had been hammered and shaped retain microscopic stress fractures or cracks (called season cracking or stress-corrosion cracking) that weaken the material (Avner 1964:349). Stress cracks accumulate at the point of juncture between the base and kettle wall and grow larger through time, making the brass more

vulnerable to corrosion. They eventually result in fractures and the separation of parts of the vessel body. Dezincification, the release of zinc from the surface material, resulted in surface pitting and may have been an additional source of wear and corrosion, depending on the percentage of antimony and tin in the brass (Avner 1964:349). These issues raise questions about the duration or life span of metal kettles in Huron contexts and prompt more detailed study of technological and material aspects of metal kettles. Earthenware research will be required in order to conduct a detailed comparison of the use-lives of metal and ceramic containers.

Nevertheless, there are equally pressing technological questions about whether metal and earthenwares performed in the same way and, therefore, whether copper and brass kettles would have been equal to, or at least adequate substitutes for, ceramic pots. This question of technical equivalency can only be addressed through a detailed study of traditional Huron culinary practices and the performance characteristics of both metals and earthenwares considered from a design theory and materials science perspective.

On the one hand, copper and brass are excellent conductors of heat. That is, they are able to absorb and transfer heat at a rapid rate (Avner 1964:344). Thus, metal kettles can achieve boiling temperature quickly. One consequence of their high rate of thermal conductivity is that their contents tend to burn or boil over very quickly, especially if the kettle is not removed from heat. Ceramic has a much lower rate of thermal conductivity and is, instead, a good insulator. Porous terra cottas and earthenwares absorb heat and trap it in their vessel walls, slowly releasing it to the vessel contents. This distinction is critical because Huron meals were left on the fire all day for people to help themselves as they became hungry. The meal was prepared and the pot placed on the fire and left unattended as women proceeded with the rest of their daily chores (Vaugh 1916:46; Thwaites 1959:8:113; 15:183). If Huron women adopted metal pots for cooking, they would have had to make adjustments to this practice. Stews and soups

cooked in a metal pot placed in or on top the fire for the same period would quickly boil, evaporate, dry out and burn, particularly without frequent stirring and attention. In contrast, pottery vessels would have slow-cooked the food and kept it warm for a considerable time without pronounced boiling over (Martelle 1996). Slow cooking or simmering of starchy or corn-based foods is required to achieve the maximum viscosity, palatability and flavour. Natural starches generally require relatively high and prolonged heating (i.e., simmering) at temperatures between 85 and 96 degrees Celsius (Ceserani et al. 1970), after which time they thicken too much and begin to burn.

Unfortunately metal kettles are rarely preserved well enough to allow the kinds of use-wear or residue to be preserved for analysis required to determine if metal kettles were used in cooking. There are no reported cases of carbonized metal kettles in Huronia. One metal kettle from the Neutral Grimsby site has been patched and repaired (Kenyon 1982:Plate 208), something that is a good indication of use but not necessarily of use in cooking. Two metal kettles from the same site have decorative motifs along the rim (Kenyon 1982:Plates 136, 210), perhaps suggesting that metal wares were sometimes subject to the same kind of decorative treatment as traditional earthenwares. Similar occurrences have yet to be reported for Huronia.

In modern contexts, one of the factors that most often deters the use and acceptance of metal cooking implements is the undesirable taste of food prepared in them (D. Arnold 1978:337; 1985:138; P. Arnold 1991:44; Hardin 1983:4; Nicklin 1971:18, 19; Peacock 1982:25; Roth 1935:227; Watson 1955:125; Wilson 1979:120). For example, women in Mexico complain that the tortillas they cook on metal griddles burn too quickly and lack the desired toasted corn flavour (D. Arnold 1985:143). In Guatemala, beans are said to taste better when cooked in ceramic pots (D. Arnold 1978:350). Many of the chemical constituents of copper and brass are poisonous, bitter in taste, or irritating to the stomach and can encourage inflammation of the digestive tract, diarrhoea, nausea and vomiting (Monier-Williams 1950:10,

322). The zinc and arsenic found in brass kettles could have imparted a bitter taste to some foods and would have been potentially dangerous to consumers. In both ancient and modern culinary contexts, manufacturers compensated for this by applying a thin wash of another metal to the pot interior. The Romans, for example, lined their bronze and copper wares with lead (although this too was a bad choice! Dutrizac et al. 1989:15). Today, tin and stainless steel are more commonly used. Although it appears that copper pots used in Europe during the seventeenth century were tin-lined, it is less certain what percentage of French trade kettles were given this protective treatment. Given their state of preservation and the extent of corrosion, the presence of a tin lining on archaeological specimens can only be determined by detailed microscopic and metallurgical studies (Anselmi, personal communication 2002). Regardless, tin is a soft metal and, like modern Teflon coatings, a tin coating is easily scratched and thins with use. Modern chefs have the tin wash replaced on their aging copper and brass cooking wares. However, re-tinning would not have been an option in the indigenous Northeast. Thus, one would logically suppose that there would be notable differences in the taste of foods prepared in trade kettles. Historically, the Huron and other Iroquoian groups expressed their distaste for foods processed or served with metal implements of any kind. The Huron disliked corn that was ground in the Jesuits' mill, preferring corn that had been pounded by a traditional mortar and pestle (Thwaites 1959:8:111), and the Seneca did not care for corn meal that had been sifted through a wire (rather than basket) sieve, or food eaten from a metal spoon (Parker 1968:51,57).

From this brief discussion, there is clearly still uncertainty about whether, and to what extent, metal kettles were employed for cooking. It seems more probable, given the continuation of pottery manufacture, that metal implements were used on an intermittent or casual basis. Metal kettles may have been viewed as useful containers for activities like fetching water or transport but it is unlikely they ever replaced earthenwares completely. Given the limited morphological diversity of metal kettles,

it is unlikely they filled all of the various niches of Huron earthenwares. Resistance to change might have also come from the fact that pots played important ideological and social roles in Huron societies and potters gained prestige from their production.

Conclusion

While it is clear that European contact brought many changes to Huron society, less is known about how changing socio-economic circumstances altered production by individuals, families and communities. More work is needed to document how contact specifically altered the interaction of individuals on a daily basis, or encouraged either persistence or change in the meaning, acquisition, production and use of new and traditional classes of material goods. I have offered some preliminary thoughts on the changes that took place in pottery production and design during this transitional period. Future research, including a more detailed comparison of pre- and post-contact trends in vessel manufacture and design, as well as technological comparisons of metal and earthenware containers, may provide additional insight into the role of pottery containers in Huron society. However, as demonstrated by so much of the work of Martha Latta, it is clear that this can only come about through detailed studies of vessels, not rim sherds, and a consideration of pottery production and use within the wider context of women's labour and the social and ideological underpinnings of Huron society.

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Cet article présente une vue d'ensemble des études de Martha Latta quant à la production de la poterie par les femmes huronnes au XVIIe siècle et offre quelques idées préliminaires concernant l'impact du contact européen face à la manufacture et à l'usage des vases en terre cuite. On croit que la haute qualité des vases produits à la période de contact, ainsi que leurs formes élaborées et standardisées, s'explique par l'émergence de potiers spécialistes (quelques femmes produisant des vases pour une bonne partie de la communauté). La spécialisation aurait été une façon efficace d'organiser le travail communautaire là où, en raison de l'intensification du commerce européen, le processus agricole et le traitement de la nourriture reposaient de plus en plus lourdement sur les épaules des femmes. La qualité de la poterie a décliné temporairement durant la période de l'épidémie et je considère à quel point les chaudrons de commerce ont remplacé les pots en terre cuite traditionnels. Mon but est d'identifier les tendances majeures qui ont marqué la conception et la manufacture des vases, et de les relier aux changements des conditions socio-économiques engendrés par l'intensification de l'interaction et du commerce Autochtones-Européens.

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