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Classification and Economic Scaling of 19th Century Ceramics

ABSTRACT

Archaeological classification of ceramics is an outgrowth of the study of material from 17th and 18th century sites and as such they reflect the classification system in use during those centuries. By the 19th century the range of wares available was greatly reduced due to the success of the English ceramic industry which displaced many fine ware types such as white salt glazed stoneware and tin-glazed earthenware. The major type available in the 19th century was English white earthenware which included creamware, pearlware, whiteware, and the stone chinas. By the 19th century classification of these wares by potters, merchants, and people who used them was by how they were decorated (i.e., painted, edged, dipped, printed etc.) rather than the ware types as defined by archaeologists. Using a classification based on decoration will achieve two things: an ability to integrate archaeological data with historical data and establishment of a more consistent classification system than is now possible using ware types.

The second part of this paper generates a set of index values from price lists, bills of lading, and account books which can be used to study the expenditures made on cups, plates, and bowls from archaeological assemblages from the first half of the 19th century. Expenditure patterns from five sites are discussed.

Introduction

Ceramic classification by historical archaeologists has developed through a synthesis of ceramic history and knowledge of the common ceramic types recovered from excavations. Prior to the mid-1960s, most historical archaeology projects involved 17th and 18th century projects such as Jamestown, Williamsburg, Fort Michilimakinac, and Louisbourg. The study of ceramics from these sites established a typology based on ware types which are a breakdown of a classification system that separates ceramics into porcelain, stoneware, and earthenware. Each of these broad categories are subdivided into wares. Porcelain for example is subdivided into hard paste, soft paste, bone china, and often by country of origin. Stoneware and earthenware are broken into types based on observable differences in glaze, decoration, and paste, e.g., tin-glazed earthenware, lead-glazed redware, white salt-glazed stoneware, combed slipware, German salt-glazed stoneware, creamware, rockingham ware, pearlware, lustreware, and many others.

Classification of 17th and 18th century wares do not present great difficulties because of major recognizable differences between them. In addition to ease of classification, most of them can be identified as to country of origin, which facilitates the study of trade relationships. The terminology used for archaeological assemblages follows that used by the potters, merchants, and the people who bought the ceramics, thus facilitating synthesis of archaeological and historic information. However, in the 19th century things changed.

In the second half of the 18th century, a revolution took place in the English ceramic industry. This period saw the introduction of transfer printing, calcinated flint, liquid glazes, Cornish clays, calcinated bone, canals for transporting raw materials and finished products into and out of the potteries, steam power for working clay and pottery, tariffs against Chinese porcelain, favorable trade treaties with the Continent, and astute marketing of creamware which culminated in English domination of the world ceramic tableware trade by the 1790s.

Marketing of creamware wrecked havoc in the pottery industries of England and the continent. Tin-glazed ware, white salt-glazed stoneware, and to some extent even oriental porcelain were displaced from the market. The pervasiveness of English tableware is well illustrated by the following comment from B. Faujas de Saint-Font from his travels to

England, Scotland and the Hebrides which was published in 1797:

> Its excellent workmanship, its solidity, the advantage which it possesses of sustaining the action of fire, its fine glaze, impenetrable to acids, the beauty and convenience of its form, and the cheapness of its price, have given rise to a commerce so active and so universal that in travelling from Paris to Petersburg, from Amsterdam to the furthest part of Sweden, and from Dunkirk to the extremity of the South of France, one is served at every inn with English ware. Spain, Portugal, and Italy are supplied, and vessels are loaded with it for the East and West Indies and the continent of America. (as quoted by Arthur Hayden 1952:135–36).

England's conquest of the world tableware market was through the vehicle of creamware. This ware is an 18th century product, and in that context it functions like any other ware i.e., it is easy to identify through the characteristics of its glaze and paste. Out of creamware evolved pearlware in the 1780s. Later stone china, ironstone, and whiteware were developed. These emerged out of creamware and pearlware and are not nearly as identifiable by differences of glaze and paste.

Table, tea, and toiletware assemblages from the 19th century consist almost entirely of creamware, pearlware, whiteware, stone china, and porcelain along with some fairly rare types such as basalt and lustre glazed redware. Differences between creamware, pearlware, whiteware, and stone china are minor when compared to the differences between ware types in the 17th and 18th centuries.

When archaeological interests advanced to include 19th century sites, it was quite natural to expand the ware type classification system as an evolution of the 18th century types such as creamware and pearlware. However, by the 19th century, ceramics were being described by the type of decoration they received, and ware types became less important. Ware types used by archaeologists for classification of 19th century assemblages often depend on such things as a slight amount of blueing in the glaze, absence of blueing in the glaze, a slight cream-like color to the paste, and density or compactness of the ware.

These differences in the 19th century are the result of an evolution of one type out of another such as whiteware out of pearlware. Whiteware does not have a date of introduction, but it is known that by the 1820s it was developing from pearlware. If an assemblage of ceramics from the first half of the 19th century is placed before six archaeologists and they are asked for counts of creamware, pearlware, whiteware, and stone china wares, the results will probably be six different enumerations. The question of how much blueing the glaze has to have before it is pearlware or which sherds have the density to be classified as stone china all hinge on personal opinions. Attempts have been made to define pearlware using the Munsel Color Book (Lofstrom 1976:6); however, there is no way of knowing if the archaeological definition of pearlware is the same as that of 19th century potters and merchants.

Archaeological reports dealing with the first half of the 19th century leave the reader with the impression that pearlware is one of the major products of that period. However, when examining 19th century documents such as price fixing lists, account books, bills of lading, and newspaper advertisements, the term pearlware rarely occurs. Simeon Shaw's *The History of the Staffordshire Potteries* (1829) and *Chemistry of. . . . Compounds used in the Manufacture of Porcelain, Glass and Pottery* (1837), does not mention pearlware except as an unglazed white body developed by Chetham and Woolley which was similar to jasper and basalt (Shaw 1829:225). Ivor Nöel Hume has shown that the term "china-glazed" was used for pearlware in the late 18th century, but even this term seems to be rather limited in its occurrences (Nöel Hume 1969a). The term "PEARL WARE" as part of the potter's mark was used by two firms, one being Chetham and Woolley (1796–1810) which used it for its unglazed white stoneware

discussed above. The other firm was Skinner and Walker which was in business during the 1870s (Godden 1964:580). At least 10 other potters used the world "PEARL" as part of ceramic marks in such combinations as "PEARL STONE CHINA," "PEARL WHITE," "PEARL CHINA," and "PEARL IRONSTONE" (see Appendix A). Most of these firms began operating in the 1830s and 1840s, and they were producing whitewares, often with a slight blue tint to the ceramic body rather than the glaze (Godden 1964). Archaeologists have defined pearlware as though it was something static; however, an article titled "Pearlware" by Mellany Delhom presents a sequence of eight recipes for pearlware from the Wedgwood factory dating from 1815 to 1846 (Delhom 1977:62–3). Two Wedgwood plates marked "PEARL" in the author's collection would fall under our classification of whiteware. One of these pieces has a date code for 1861. Blue tinted wares from the 1850s through the 1860s are discussed in Appendix A. Documents examined for this paper suggest that pearlware or "Pearl White Ware" existed throughout most of the 19th century, but its characteristics were continually evolving.

Creamware also lasts out the century. However, from the 1820s on it is rarely found decorated, and the variety of forms in which it was available became limited to such things as large kitchen bowls, chamber pots, and bed pans. In almost all 19th century price lists and potter's and merchant's bills, it is referred to as "CC ware" and is almost never decorated. In short, the ware types archaeologists are attempting to use to classify their collections are elusive as to their definitions in the 19th century.

What does the present classification system for the 19th century ceramics by ware types give us?

A. Chronology? Yes, in a rough sort of way.
B. Country of origin? It is not a question usually asked because almost all fine wares with the exception of porcelains in 19th century sites are English.
C. Ease of classification? Definitely not.
D. Consistency in classification? Definitely not.
E. An ability to integrate data with historical documents? Definitely not.
F. Information on social status? Nothing seems to indicate that the ware type is related to status with the exception of porcelain.

Social status of any commodity is related to how much the objects costs. Prices for pottery were determined by how they were decorated. Fortunately, the Staffordshire potters had a series of price fixing agreements in the 18th and 19th centuries and some of them have survived. Price fixing lists are available for 1770, 1783, 1795, 1796, 1814, 1833, and 1846 (see Appendix B for citations). These price lists provide cost information for the various sizes of vessels according to how they are decorated. They reveal the classification system used by the potters for their products.

These price ctaegories, based on decoration, were well established by the 1790s. Many of these types were used throughout the 19th century. Terms like pearlware, whiteware, stone china, and ironstone rarely appear in the price lists and account books. Creamware is the only ware type appearing in the lists, and it appears as "CC" for cream color. On every list so far examined, CC was used for undecorated vessels, and it was the cheapest type available. All other types are defined by the process used to decorate the object.

Four groups based on decoration become evident from examining these lists. A breakdown of the groups are as follows:

First or lowest level: Undecorated—almost always referred to as CC, but in the second half of the 19th century, the terms "Common" and "white' earthenware" or "Earthenware" sometimes are used. Undecorated vessels after the 1820s tend to be chamber pots, plates, bowls, and forms related to kitchem use. Plain white ironstone is also called stone china, and white granite became popular in the 1850s and is an exception to the above. It was higher priced than CC vessels.

Second level: Minimal decoration by minimally skilled operatives. Types in this group include shell

edge, sponge decorated, banded, mocha, and "common cable" (finger trailed slip). In all of these types, there is a fairly wide range in the decoration on one vessel compared to another of the same size and form. For example, two mocha bowls are never exactly alike. Shell edge plates are another good example; the color can be applied by a worker of low skill level because all that is involved is a series of short brush strokes along the rim. Later, in the 1840s and 1850s shell edge vessels just have the color applied parallel to the rim, and they depend on the molding to lend an effect to the edge. The second level encompasses the cheapest ceramics available with decoration.

Third level: This level is made up of painted wares with motifs such as flowers, leaves, stylized Chinese landscapes or geometric patterns. With this group the painters needed to have enough skill to duplicate patterns so that sets of matched pieces could be assembled. Painting at this simple level produced wares which were priced between the second level and transfer printed wares. While painted decoration on utilitarian tea, table, and toilet wares were relatively inexpensive, there is another group of painted wares of much higher quality done by very skilled artist-craftsmen which would rank among the most expensive wares available. However, most of the painted wares from North American sites bear simple stylized motifs which required minimal artistic skill and were almost always cheaper than transfer printed vessels. Exceptions to this may be cases where the transfer print is used as an outline for the application of colors. Unfortunately, none of the price lists consulted have provided price information on objects which are decorated by printing in combination with painting.

Fourth level: Transfer printing represents one of the great English innovations in decorated ceramics. By the 1790s underglazed transfer printing was becoming a common way of decorating ceramics in the Staffordshire potteries, as indicated by the price fixing lists of 1795 and 1796 (Mountford 1975:10–11). With transfer printing it was possible to have intricately decorated and exactly matching pieces at a cost far below similarly hand painted pieces. In the 1790s, transfer printed vessels were three to five times more expensive than undecorated CC vessels, but the price differential of printed and CC vessels decreased to between one and a half to two times the cost of CC by mid-19th century.

Early in the 19th century, willow pattern was designated as the cheapest transfer printed pattern available, and, as such, it was given its own column in the price fixing lists. None of the price lists examined indicate any price differential based on the color of the transfer print. However, at least until the 1850s flow printed patterns were higher priced than regular transfer printed patterns. Most North American archaeological assemblages dating to the first half of the 19th century have few wares which exceed transfer printed wares in terms of cost status. The major exception to this is porcelain for which little has been found in the way of prices. As transfer printed wares became cheaper compared to CC wares, their consumption greatly increased. This is particularly observable on sites dating after the War of 1812.

The above four categories are especially valid for the first half of the 19th century and account for most of the table, kitchen, and toilet wares recovered from North American sites dating to this period. Porcelain is the major exception to this; its relationship to the Staffordshire earthenwares will be worked out when more price information has been collected.

Beginning in the mid-1850s, a major change takes place in ceramic prices and tastes. Until that point, undecorated wares were the cheapest type available. By the mid 1850s price lists and bills begin listing large quantities of undecorated white ironstone or white granite. Prices for this new type are often equal to prices for transfer printed vessels of the same form and size. Bills of sale for ceramics from the late 1850s through the 1870s contain few transfer printed wares, and they appear to have been replaced by undecorated ironstone. From the mid-19th century, there appears to be a weaker relationship between final cost of the vessels and their decoration. An analysis of the movement of undecorated ironstone into a position of status comparable to transfer printed wares would provide an interesting insight into ceramic marketing at mid-century.

Those who are familiar with ceramics from the first half of the 19th century will realize that the types discussed above encompass a large proportion of the ceramics recovered from excavations of that period. The major type missing from the above discussion is porcelain. It too can be segregated into decorative categories. However, porcelain rarely occurs undecorated, and the author has never seen porcelain decorated at what is labeled level two, i.e., shell edge, sponged, mocha, banded, or common cable. It would appear that persons decorating porcelain had more skill than was needed for level two decoration.

Ceramic Prices

Little research has been done on ceramic prices. This is probably due to the paucity of documents, complexity of the subject, and the relatively small contribution ceramics made to the over-all economy. A variety of documents from different levels in the ceramic marketing structure contain ceramic prices and descriptions. Potters' wholesale prices for example, can be recovered from bills, statements, and price lists sent by potters. Potters' wholesale prices are also available from price fixing lists published by potters associations. Some of the larger potters such as Josiah Wedgwood and John Davenport also maintained retail outlets in London which means there were potters retail and wholesale prices (Lockett 1972:10). The amount of pottery sold directly to the consumer by the potters through their own retail outlets appears to be quite small. Most ceramics were purchased wholesale by two types of middlemen. One was the wholesale jobber who resold the wares at a jobbers wholesale price, and the other was the merchant who resold the ceramics at a retail price to the ultimate user. The number of middlemen can vary from one (potter to user) to many. Each establishment along the chain of sales added their profit to the ultimate cost of the wares to the consumers. From this discussion it can be seen that there are three basic groups of businessmen dealing with ceramics: potters, jobbers, and retail merchants, all of whom could have wholesale and retail prices. Two additional sources of ceramic prices are probate inventories and accounts of estate sales which for the most part deal with second hand goods. However, second hand prices will not be dealt with in this study.

Besides the mercantile structure, ceramic prices are affected by transportation costs, tariffs, changed in technology, inflation, deflation, and currency fluctuations. Further complicating the study of ceramic prices is the nature of the product. Ceramics range from being a basic necessity to a high status luxury good. These divergent roles are covered by a wide range of forms, types of decorations, and sizes of vessels, and all of these variables affect prices. Such a range of complexities combined with the relatively minor role ceramics play in the overall economic picture probably account for why price studies such as Tooke and Newmarch's classic six volume work, *A History of Prices . . . from 1792 to 1856 (1928)* do not deal with ceramics.

The study of ceramic prices can be approached from several directions. One would be to attempt the study of prices from one geographic location, such as a port like Montreal or New York. Success of such a study would depend upon the quantity and quality of records that have survived. Research so far indicates that few records are available. A detailed study of ceramic prices and descriptions from a city of importation could provide knowledge of the range of types, forms, and sizes being imported, and cost information which would have application for the immediate surrounding area. Unfortunately, it is not possible to have ceramic price studies for all of the communities where they will be useful. Even if the records were extant, the cost of such a large project would be immense.

A second approach would be to work with potters' wholesale prices; this makes a great deal of sense because of the dominant role played by the Staffordshire potteries. These records tend to be easy to identify, and they usually contain a high level of descriptive information, but documents containing potters' wholesale prices are not common. However, the potters' price fixing lists of 1796, 1814, 1833, and 1846 along with the 1855 price list from the Fife Pottery in Scotland are detailed and provide an excellent starting point for studying ceramic prices (Appendix B). From these lists, prices for CC, edged, and transfer printed platters, plates, muffin dishes, soup tureens, and sauce boats have been

abstracted (Appendix C). Using the cost of 16 different shapes and sizes of vessels in CC, edged, and transfer printed styles, a ceramic price index was generated and plotted against the *New York all Commodities Index of Wholesale Prices for 1798 to 1860* (Figure 1). Even though there are only five data points for the ceramic prices, it is still possible to get an impression of the relationship of the cost of ceramics in comparison to the cost of other commodities. It appears that ceramic prices were falling somewhat faster than the other commodities. This picture may change as more price information is collected and such things as porcelain and tea ware are worked into the cumulative price data.

In addition to allowing for a comparison of the relationship between ceramic prices and the cost of other relationships between CC, edged, and transfer printed vessels. Figure 2 illustrates the cumulative prices for each of the three groups (CC, edged, and transfer printed) used in Figure 1. It is clear that most of the price decline took place in decorated wares. This graph also illustrates the great stability of the prices for the CC vessels. From 1796 to 1855 transfer printed vessels dropped almost 70% in wholesale price while shell edged vessels only fell about 37%. However, CC prices only fell about 19% over the same 60 year period. The five price lists used to generate Figures 1 and 2 clearly illustrate the productivity of studying potters' wholesale prices. However, this approach is limited because of the scarcity of price lists.

A third approach to ceramic prices is to

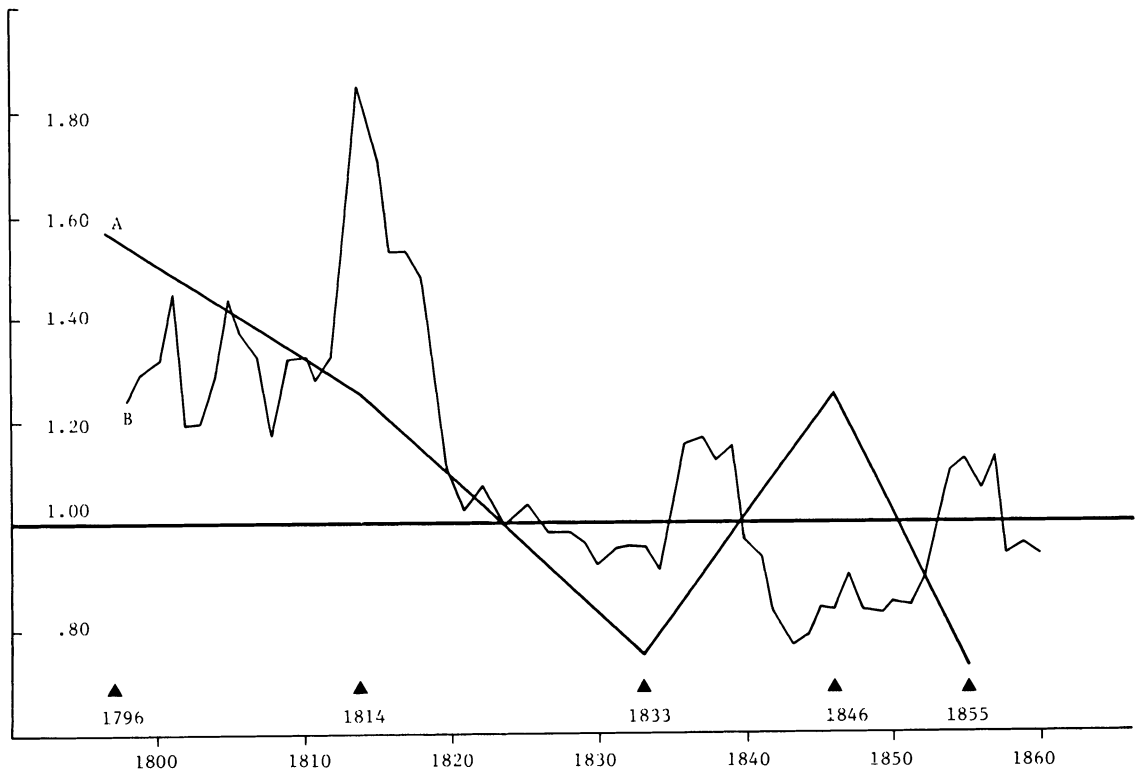

FIGURE 1. Comparison of ceramic prices and other commodities prices. A = Ceramic prices using the average costs for 1833 and 1846 as a base. Prices derived from 48 vessels (one-third CC, edged, and printed) for the year 1796, 1814, 1833, 1846, and 1855 (Appendix 3). B = The New York all commodities Index of Wholesale Prices using the base period 1824–1842 (Cole 1969:135–6).

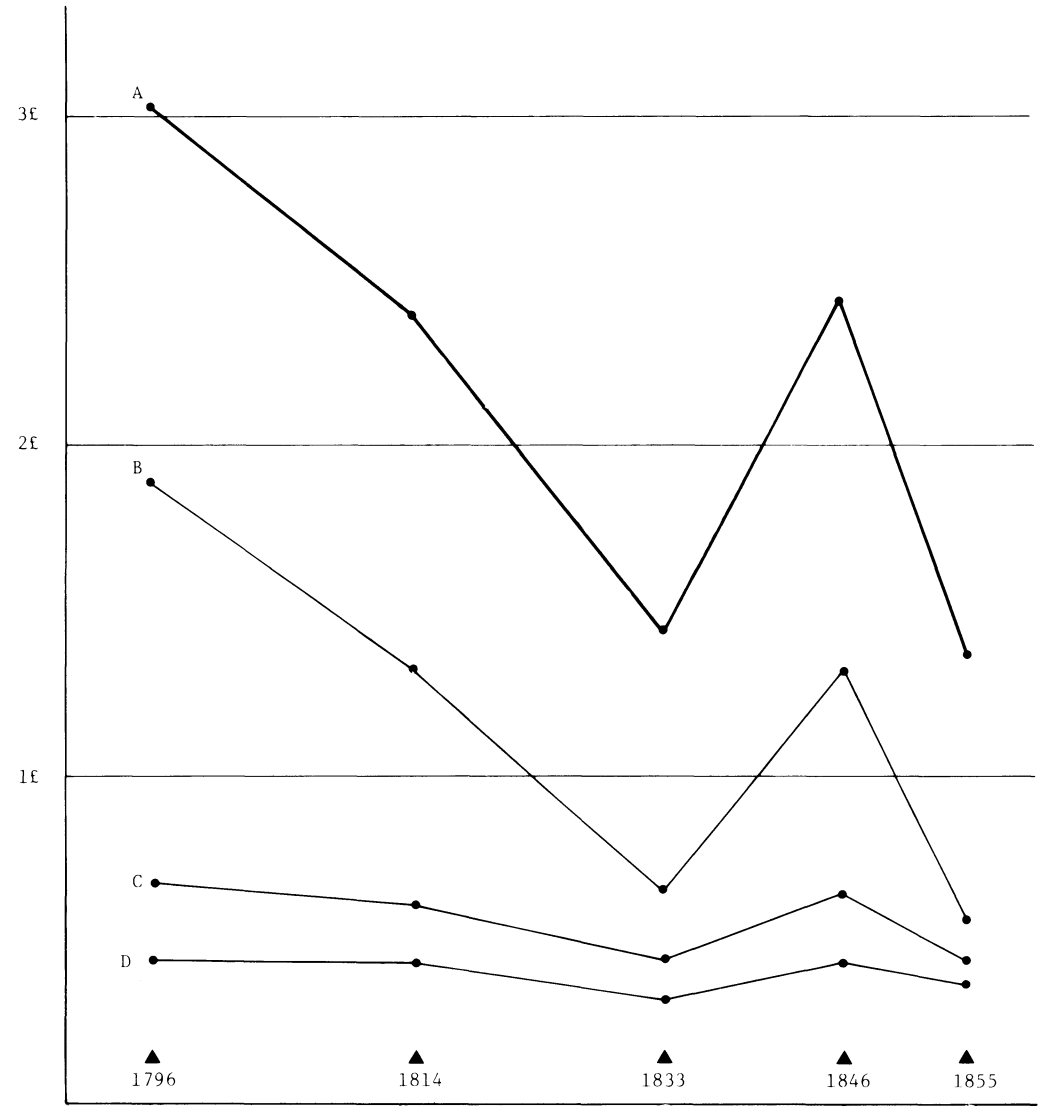

FIGURE 2. Cumulative prices for 16 vessels for the years 1796, 1814, 1833, 1846 and 1855. A = cumulative totals of lines B, C, & D. B = prices for the cheapest type of transfer printed vessels, usually willow ware. C = prices for the same vessels in edged (shell edged). D = prices for the same vessels in CC.

study the changing cost relationships between the various decorative types. Potters' wholesale prices from the 1790s through the 1850s indicate exceptional stability in the prices of undecorated CC ware. This stability makes CC vessel prices a convenient scale for observing changing cost ratios among the various decorative types. For example Figure 3 illustrates the number of eight inch plates available in shell edged, undecorated ironstone, willow pattern, and other transfer printed patterns that one could purchase for the cost of one dozen CC plates of the same size from 1796 to 1874. Documents used to

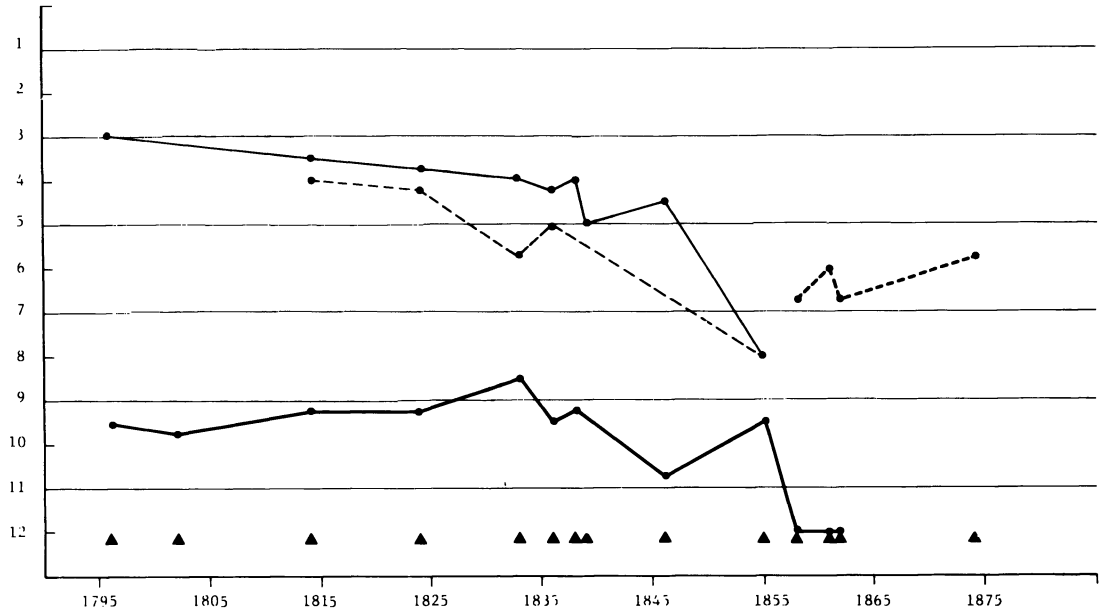

FIGURE 3. The number of 8 inch plates available in shell edge, willow pattern, other transfer printed patterns, and undecorated ironstone for the cost of 12 CC plates of the same size.

Δ = years for which there is data
——— = other transfer printed patterns
– – – – = willow pattern
------ = plain white ironstone
——— = shell edge

generate this graph include potter's and wholesale merchants prices (Appendix B).

Two things are clear from examining Figure 3. One is that the prices of the decorative types were declining through time towards the price of CC plates. The second point is that the price of one decorative type does not drop below the price of another decorative type although they may meet as in the case of shell edge plates and CC plates. This suggests that even though the relationships between the types are changing, the classification of them seems to hold.

Figure 4 graphically represents the number of painted, printed, and undecorated ironstone and porcelain cups and saucers that could have been purchased for the cost of a dozen CC cups and saucers. With cups and saucers there appears to be less of a decline towards the price of CC ware. Here again, the types do not cross price lines except for undecorated ironstone. When white ironstone became popular in the 1850s, it came into the market at a status level comparable to transfer printed wares.

Figure 5 presents the same information for bowls. It again shows prices declining towards CC ware with a maintenance of the decorative classes over time. All three of these figures illustrate the usefulness of CC ware in observing status changes over time. Documents used to create these graphs included Staffordshire potters' wholesale prices, English merchants' wholesale prices, and North American merchants' wholesale prices. By studying price relationships rather than actual cost, the number of usable documents are greatly increased.

The above discussion has demonstrated the

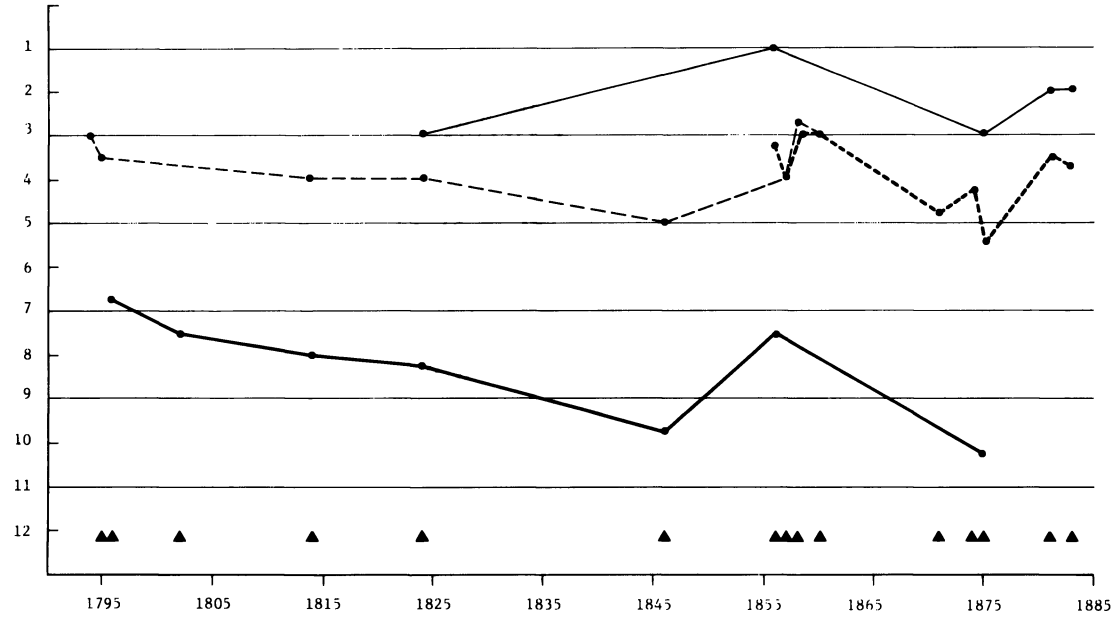

FIGURE 4. Number of London size handless cups and saucers in painted, printed, undecorated ironstone, and porcelain available for the cost of 12 CC cups and saucers of the same size.

Δ = years for which there is data
——— = porcelain
– – – – = transfer printed
------ = plain white ironstone
——— = painted

usefulness of CC ware as a vehicle for filtering out price differences related to factors discussed earlier. Stability of CC prices provide an excellent scale to measure changes in other decorative types. The examination of the cost ratio between CC and other decorative types suggest that prices decline over time towards the cheapest type available. The ability of the cheapest type to decline in price was limited to its margin above production cost. Because the cheapest type probably already enjoyed economy of scale in production, the only way for its price to decrease was through declines in material cost or improvements in technology. Such changes of course would affect all types. Josiah Wedgwood made an astute observation on the price cycle of ceramics when he began his 1759 notebook of experiments. He summarized the declining of prices for white salt-glazed stoneware as follows:

> White stoneware was the principle article of our manufacture; but this had been made a long time, and the prices were now reduced so low that the potter could not afford to bestow much expense upon it. . .
>
> The article next in consequence to stoneware was an imitation of tortoise-shell, but as no improvement had been made in this branch for several years, the consumer had grown tired of it; and although the price had been lowered from time to time in order to increase the sales, the expedient did not answer, and something new was wanted to give a little spirit to the business (Mankowitz 1966:27).

Increasing demands by lowering prices appears to be a one way process in which consumption is increased, status declines and, when the market is saturated, the demand falls. This cycle can be repeated until the selling price bottoms out at the point where it can

FIGURE 5. The number of size 12 bowls available in dipped, painted, printed, and basalt for the cost of 12 CC bowls of the same size.

Δ = years for which there is data
——— = basalt
– – – – = transfer printed
------ = painted
——— = dipped

no longer be lowered because of production costs. If demand continues to fall beyond this point, then production stops and the consumer is left with the choice of the next more expensive or the next cheaper type. With CC ware, the next lower level was tinware.

Shell edge plates provide an excellent example of this process. By the 1850s, the price for shell edge plates was close to the price of CC plates. Three bills from the Fahnestock Papers from 1858, 1861, and 1862 list the price for blue edge plates as equal to the price for CC plates (Appendix B). Archaeological assemblages and ceramic bills after the 1860s rarely contain shell edge plates. The demand did not exist at the price the potters had to have for production so it was greatly reduced.

For the archaeologist, or any other scholar studying material culture, the ability to scale assemblages in socio-economic terms is very important. Until now archaeologists have ranked assemblages from sites in relative terms such as the purchase pattern, presence of matched sets, presence of expensive forms such as tureens, and the decorative type present, i.e., sites with transfer printed ware were ranked higher than sites with shell edge wares (Miller 1974a, 1974b; Teller 1968; Stone 1970).

Ranking without an interval-value scale limits the ability to do socio-economic analysis of collections. For example, it is easy to say that an assemblage with a matching set of teaware represents a higher status than one which lacks it. However, if one site has a matching set of transfer printed teaware and another has a matching set of transfer printed tableware, then the ability to rank begins to break down. Even when assemblages can be ranked as to status, it is not possible to know

how close or far apart two assemblages are from each other. Time adds another dimension to the problem. For example, does an assemblage from 1790 with a matched set of shell edge plates rank above an assemblage from 1855 with a matched set of willow plates? It is easy to see the significance of developing an interval scale of value.

Potters' wholesale prices indicate a high degree of stability in the prices of CC ware. Figures 3, 4 and 5 illustrate the usefulness of CC ware in observing changes in the cost of decorative types. Given this evidence, a series of index values has been generated for plates, cups, and bowls using the price of CC vessels. These are presented in Appendices D, E, and F.

Generation of CC index values is quite simple. Because plain CC vessels are the cheapest refined earthenware available in the 19th century they are given a value of one. Index values are generated by dividing the cost of a CC vessel into the cost of other types for which the index value is wanted. In generating the CC index numbers, the following guide lines were used. Foremost was that each document used was treated as an assemblage. To put it another way, prices from one document were not used against prices in another document. For a document to be usable, it had to have CC wares and size information in addition to the decorative types for which the index values were being calculated. Controlling these factors means the only variable being observed is decoration. In other words, the cost of a seven inch shell edge plate has to be divided by the cost of a seven inch CC plate from the same bill, or the cost of a London-size transfer printed cup has to be divided by the cost of a London-size CC cup. In this way the variables are controlled. The resulting index numbers have a great deal of consistency. For example, consider the CC index values for inch shell edge plates worked out from potters' and jobbers' wholesale prices in England and North America (Table 1).

These documents are more fully described in Appendix B. The consistency of the CC index value regardless of the type and origin of the document suggests something about marketing practices. If the standard practice was for jobbers and retailers to base their prices on a percentage increase of the potters wholesale prices, then the ratios between the cost of CC and the other decorative types would be intact through the various levels of the mercantile system. Using an index value system based on CC wares greatly increases the number of documents that can be used together to create an overview of the changing relationships of the various types of ceramics available throughout the 19th century. If the right documents can be found, it will even be possible to relate tin and glassware to ceramic index values. Catalogs from Sears and Roebuck, Montgomery Ward, and Eatons will be useful for this in the very late 19th century.

TABLE 1
CC INDEX VALUES FOR TEN INCH SHELL EDGE PLATES

Date	CC Index value	Document type	Origin of price list
1796	1.33	Potter's price list	Staffordshire
1802	1.37	Jobber's bill	Montreal
1814	1.33	Potter's price list	Staffordshire
1824	1.33	Jobber's account book	Philadelphia
1833	1.29	Potter's price list	Staffordshire
1836	1.33	Potter's bill	Staffordshire
1838	1.33	Potter's bill	Staffordshire
1839	1.20	Potter's bill	Staffordshire
1855	1.20	Potter's price list	Scotland
1858	1.00	Jobber's bill	Philadelphia

CC Index Numbers and Archaeological Assemblages

Using CC index values is quite simple. Once the minimal vessel count has been completed, the plates, cups, and bowls should be grouped by decorative type. Then a year is selected from the tables presented in Appendices D, E and F. If the site has a long occupation, then it might be best to break the assemblages into time units and use more than one scale be-

cause the index values change through time. Next, the index values are multiplied times the number of vessels recovered of each type. For example, consider the plates from the factory area of the Franklin Glass Works of Portage County, Ohio, This site was occupied from 1824 to ca. 1832 (Miller 1974b). The CC scale used for this collection is for the year 1824 which is as close as the present set of scales can come to the period of occupation. The index values used are for eight inch plates (Table 2). The average expenditure on plates for this collection is about 1½ times as expensive as the cost of plain CC plates. Average CC index values were also worked out for cups, bowls, and for the same vessel forms from the assemblage of a house area on the site (Table 3). From the above index values, it can be seen how this system will allow the economic scaling of assemblages and scaling within assemblages.

For example, consider the difference in expenditure levels between cups, plates, and bowls. Figure 6 is a graphical representation of the average CC index values for cups, plates, and bowls for six ceramic assemblages from four sites. Data used to create this graph is contained in Appendix G. In four of the six assemblages, the average expenditure above the cost of CC ware is the highest for cups. The cumulative average for cups is 18% higher than plates and 31% higher than bowls. This suggests that tea ware functioned more in a role of status display than plates or bowls. The low average value of bowls in the CC index scale may be related to their dual functions, i.e., less expensive kitchen ware bowls being averaged with more expensive tableware bowls. From these six assemblages, it is easy to see the usefulness of the CC index numbers in dealing with archaeological assemblages. They would also be useful in dealing with probate inventories which contain descriptions of the decorative types. A comparison of scaling of second hand prices to one done with CC index numbers would be interesting and could provide information on whether used goods maintained the relative value positions between decorative types or they declined value in a disproportional pattern. Having an interval value scale for ceramics is going to increase our ability to perform socio-economic analysis of archaeological collections.

Availability Value Range

When considering an interval value scale, it is quite natural to wonder what the ends of the scale look like and how great the distance is between the bottom and top. For refined earthenware, plain undecorated CC is the cheapest, and, as such, it is the measuring device for the scale. However, redware and yelloware bowls and possibly mugs all probably have an index value of less than one. Plain and enamelled tinware vessels also

TABLE 2
CC INDEX VALUES FOR PLATES FROM THE FRANKLIN GLASS WORK SITE

Type	CC index value		times		Number recovered		value
CC	1.00		×		5	=	5.00
Edged	1.29		×		24	=	30.96
Willow	2.86		×		1	=	2.86
Other printed	3.21		×		3	=	9.63
totals					33 plates		48.45
average value	48.45 / 33	= 1.47					

TABLE 3
CC INDEX VALUES FOR PLATES, CUPS, AND BOWLS FROM THE FACTORY AND HOME AREAS OF THE FRANKLIN GLASS WORKS SITE.

	Factory Collection	Home Collection
Plates	1.47	1.86
Cups	2.11	2.15
Bowls	1.37	1.54

should have a value less than one, and when documents are found allowing index values to be created for these types, they will be added to the system.

The upper end of the scale is more difficult to define. Some idea of how far above the cost of CC the market went is provided by the commissioned table service Josiah Wedgwood made for Catherine the Great of Russia in 1775. This service cost about £3,500. If the equivalent vessels were purchased in undecorated creamware, they would have cost 51 pounds, 8 shillings and 4 pence (Mankowitz 1953:46). Catherine the Great's set cost 68 times as much as plain creamware. Commissioned services tell us little about the range of what was available as standard production, but a printed price list by Ridgeway from 1813 provides some insight into this question. It is titled "SCALE FOR CHINA, TEA, AND BREAKFAST SETS" and lists 21 price ranges for a number of vessel forms (Ridgeway 1813). Prices given and use of the term "China" suggest that the vessels are porcelain. Unfortunately, none of the price categories have decorative type descriptions, or information other than vessel form. Twelve cups and saucers range in price from 9 shillings to 4 pounds 3 shillings. Another problem with this list is that it is not clear whether the prices are wholesale or retail. In the 1814 price fixing agreement of the Staffordshire potters, a dozen CC cups and saucers sold for 18 pence. If the 1813 Ridgeway list represents wholesale prices for porcelain, then it would appear that the cheapest English porcelain set of 12 cups and saucers was at least 6 times as expensive as the equivalent CC cups and saucers. The upper end of the scale indicates that the most expensive Ridgeway cups and saucers were 53 times more expensive than plain CC ones. If the Ridgeway list represents retail prices, then the differences would not be so great. However, the 53 to 1 difference does seem to indicate the great range that was available in tea and tableware.

The range of values suggested above does not begin to be reflected in the six assemblages plotted on Figure 6. The highest average value above the cost of CC ware comes from the Walker Tavern in Cambridge Junction, Michigan (Grosscup and Miller 1968). None of the average values for this site exceed 2½ times the value of CC and these are typical assemblages for 19th century sites in North America.

In considering the low average CC index value from archaeological assemblages, it is necessary to keep in mind the process of deposition. Excavated collections usually represent an accumulation of what was broken or discarded. For tableware there are differential breakage rates and potential for discard to be taken into consideration. For example, tin cups or silver mugs will outlast ceramic or glass mugs, and even when they are beyond use, the silver would not be discarded. Different ceramic forms also have differential breakage rates. Cups for example are more subject to breaking than saucers because of the amount of handling they receive and their repeated exposure to abrupt temperature changes as they are filled and refilled with hot and cold beverages. Some perspective on this differential breakage can be gained by observing the high ratio of saucers to cups in second hand stores and at church bazaars.

In addition to differences in breakage rates in various vessel forms, there are differential rates of breakage which are related to how frequently vessels are used. The example which most readily comes to mind is the set of "best" dishes versus the every day dishes. If the "best" dishes are only used to serve

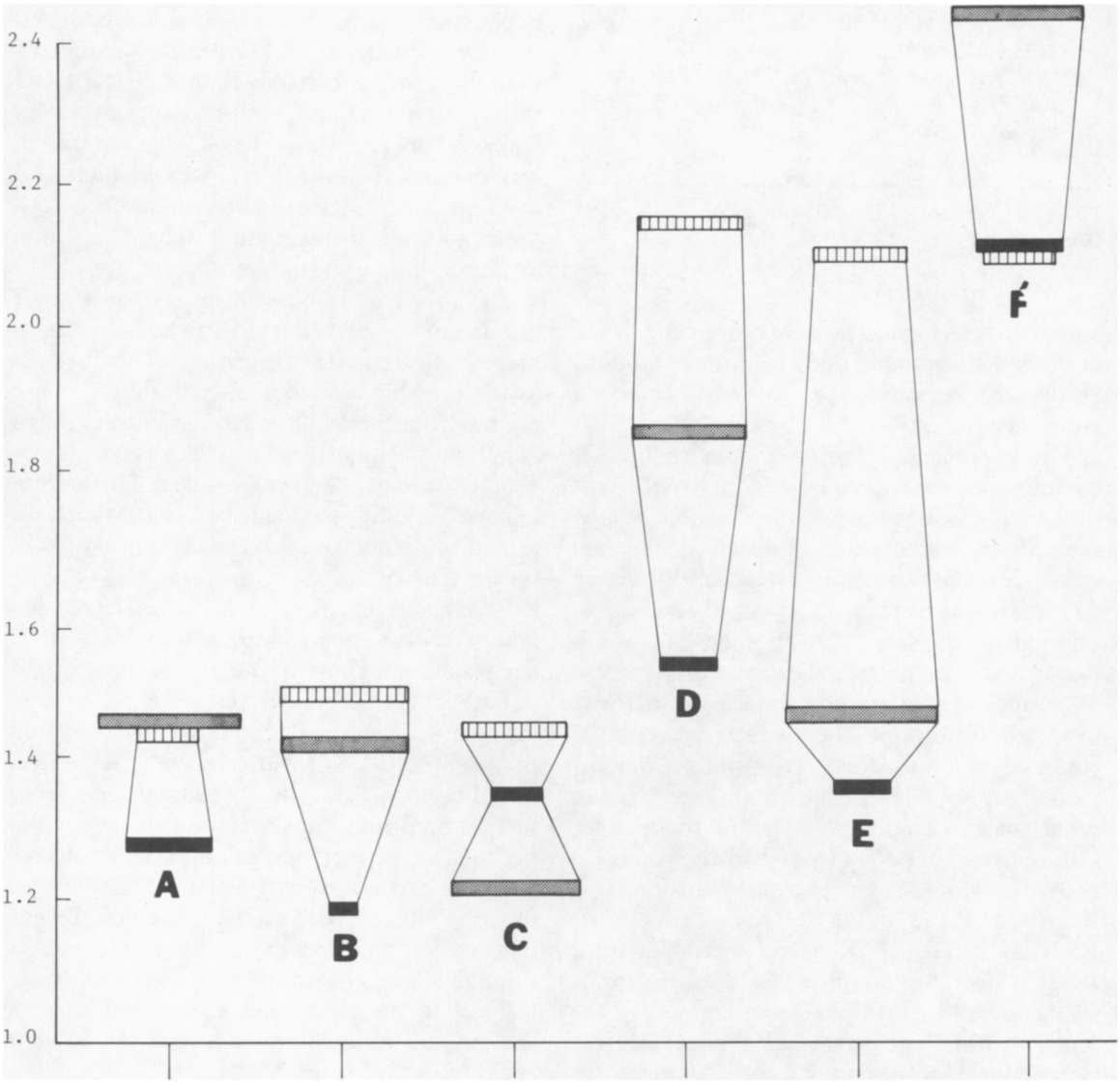

FIGURE 6. The average value of cups, plates, and bowls above the cost of CC vessels from four sites. Plates plus cups plus bowls equal 100%.

= Plates = cups = bowls

TYPE OF SITE	DATE	SCALE	APPENDIX	ITEM
A. Tenant farmer	ca. 1800–1840s	1824	G	A
B. Tenant farmer	ca 1840–1860s	1846	G	A
C. Frontier log cabin	1840 to ca 1830s	1824	G	B
D. Glass worker's house	1824 to ca 1832	1824	G	C
E. Glass factory	1824 to ca 1832	1824	G	C
F. Country tavern	ca 1834 to 1850s	1846	G	D

Sunday dinner, then they are only used for one meal a week, whereas the everyday dishes average 20 meals a week. In other words, the everyday dishes have 20 times the chance of winding up as part of the archaeological sample. Thus, when the average CC index value is worked out for plates, cups, and bowls from a site, it will probably be weighted towards the everyday dishes and provide a value somewhat on the low side.

Probate inventories, on the other hand represent accumulations of what has survived and been saved rather than what was broken and discarded. Therefore, if CC index values are averaged for plates, cups, and bowls from probate inventories, the higher ratio of "best" dishes would provide a higher average value than the archaeological assemblage.

When using CC index values on archaeological assemblages, the researcher must remember that the sample generally represents what was broken and discarded over time. Probate inventories represent what survived and was present in a household at one point in time. It is very important to use the historical records available to round out a view of what was in use. The CC index values are a tool which provide a start towards analysis of collections.

Conclusions

1. Wares types can only provide chronological information during the 19th century. Their identification is questionable at times, and there is little evidence that ware types were used during the 19th century in the same way that they were used in the 18th century.

2. Decorative types such as plain CC, edged, painted, dipped, and printed were the major classification used during the 19th century. Classification based on the decorative types has several advantages.

A. Integration of historical and archaeologic data,

B. Consistency of identification, and

C. Classification will reflect economic classes.

3. During the 19th century ceramic prices appear to have declined somewhat faster than general commodity prices.

4. Prices of undecorated CC vessels were fairly stable during the 19th century providing an excellent scale against which to measure changes in the value of other decorative types.

5. Using the price of CC vessels, index values have been created from a variety of documents such as bills of lading, price lists, price fixing lists, account books, and invoice statements.

6. These index numbers can be used to calculate the average cost above CC vessels for plates, cups, and bowls from archaeological sites and inventories, allowing sites to be scaled in terms of their expenditure on ceramics.

Appendix A, Part 1
Pearlware in the 19th Century

Pearlware development in the late 18th century was influenced by three events. One was the right for potters to use Cornish china clays. That right was won in a court case in 1775 which allowed for the production of wares other than porcelain to be made from the clays (Finer and Savage 1965:17). The second factor was that the demand for creamware was beginning to subside as markets were saturated and people became tired of it (Finer and Savage 1965:237). The fact that pearlware resembles hard paste porcelain does not appear to be an accident. Consider Josiah Wedgwood's comments to his partner Thomas Bentley when he was developing pearlware in March 1779:

> I find to my grief that I cannot make any great improvement in my present body but it will be China, . . . However, to give the brat a name you may set a cream-color plate and one of the best blue and white one before you, and suppose the one you are to name

> another degree whiter and finer still, but not transparent, and consequently not china, for transparency will be the general test of China (Finer and Savage 1965:231).

A further comment in August 1779 reiterates the above:

> Your idea of the cream color having the merit of an original, and pearl white being considered as an imitation of some of the blue and white fabriques, either earthenware or porcelain, is perfectly right, . . . (Finer and Savage 1965:237).

The impression is given that Wedgwood and Bentley both realized that in copying hard paste porcelain their product was limited in the heights of its status by porcelain. With creamware, Josiah Wedgwood was able, through dynamic marketing, to place his product in a very high status position, and it made great inroads into the market traditionally occupied by porcelain. For example, consider his commissions for sets of creamware to the Royal families of England and Russia as well as lesser nobility of other countries. Never before had earthenware competed with porcelain in status. However, time was taking its toll on creamware, and the taste makers of 18th century Europe were beginning to become tired of it. The rights to produce porcelain in England was held by patent (Finer and Savage 1965:17). Given these circumstances Wedgwood was attempting to come up with a new product to market. That product was pearlware which both he and his partner seem to have recognized as a copy of porcelain, and it was approached with hesistancy.

To "gain a place in the sun" for pearlware, had to depend on its decoration rather than the nature of the ware. Undecorated pearlware is a rare occurrence. The transition to decoration as the important vehicle of marketing rather than the ware seems to begin with pearlware. The term pearlware itself is rarely used in account books, advertisements, or bills of lading. Instead, vessels were described according to how they were decorated.

The third factor affecting pearlware was a series of increasingly high protective English tariffs against the importation of porcelain. By 1799 the duty rate was over 100% on Chinese porcelain (Haggar 1972:185). Pearlware's development came at the time when a void was being created and it moved into that void.

Pearlware decoration in the late 18th and early 19th centuries was dominated by a plethora of pseudo-chinese motifs that have been labeled chinoiserie. These types of decoration also occur on early ironstone and stone china. Like pearlware, these wares often have a blue tint to their glaze in imitation of porcelain. The appearance and motifs of these wares suggest they took the place of Chinese porcelain in the English market. Adoption of terms like China glaze and stone china lend further weight to this argument. Ivor Nöel Hume has demonstrated the use of the term china glaze for pearlware in the late 18th century (Nöel Hume 1969).

Production of pearlware was taken up by a host of potters in Staffordshire and other areas of England. When these potters moved into the production of pearlware they naturally had to develop body and glaze formulas for its production. Adjustments of these formulas and evolution of them through time created a range of products with gradually decreasing amounts of bluing in the glaze. This led to what archaeologists have been classifying as whiteware. Unfortunately whiteware was not the invention of any one potter, and there is no fixed date for its introduction. Any archaeologist that has dealt with ceramics from the first half of the 19th century knows that when identifying the wares from that period, three groups emerge: one that is obviously pearlware, one that is obviously whiteware, and a third group which is in between the first two. Unfortunately archaeologists have picked a static definition for pearlware which works well in the 18th century but breaks down in the 19th century because pearlware was continually evolving. For example, Mellany Delhom in her article "Pearlware" presents a series of

six formulas for pearl body used in the Wedgwood factory from 1815 to 1846 (Delhom 1977).

What the factors were that led to a gradual whitening of pearlware are open to speculation. Technology obviously could have been a factor, but alone it does not seem to be a reason for moving towards a whiteware. Perhaps the introduction of bone china by Josiah Spode around 1800 and its greatly increasing popularity during the first quarter of the 19th century was the reason. Bone china, unlike oriental hard paste porcelain does not have a bluish cast to it, and it is very white. Its popularity was such that the Wedgwood factory began producing it by 1812 because their customers were turning from their products to bone china produced by others (des Fontaines 1977:135–36). With the new taste being for a whiter procelain, it would follow that blue tinted pearlware was subject to pressure to copy the new porcelain. The fact that the Wedgwood Pearlware formulas date from 1815 to 1846 and post-date their introduction of bone china, suggests that bone china may have been a factor in these changes.

Two different approaches to whitening pearlware seem to have been taken. Many potters just reduced the amount of cobalt in the glaze. The second solution was to add cobalt to the body and give it a very light blue tint which through a clear glaze looks much whiter than pearlware defined by archaeologists. These adjustments do not appear to be major changes in the potteries, and there is almost no discussion of them in the historical literature. The potter's perception of how unimportant these changes were is reflected by two things—one is the lack of information on them, and the second is that in some cases the name pearl stays with the new ware. For example, at the end of the Staffordshire potters price fixing list of 1846, there is a brief discussion of the discount rates for special shapes in cream colored ware in terms of costs for pearl white granite and pearl white ware.

The potters seem to have made no distinction between whiteware and pearlware. The blue in the glaze is gone but the name lingers on. According to Godden, the Wedgwood factory reintroduced the term "pearl" as an impressed mark around 1840 and continued to use it until 1868 when they switched to an impressed "P" (Godden 1964:658). Llewellynn Jewitt commented on this latter-day-pearlware in 1865 when he observed that it was "not a pearl of great price, but one for ordinary use and of moderate cost." (Nöel Hume 1969:396). The author has two Wedgwood plates with the impressed mark "PEARL," and one has a date code for 1861. Both of these would be classified as whitewares if the definition of bluing in the glaze is used to define pearlware.

Around the 1840s use of the term pearl seems to have undergone a revival in popularity. This can be seen in the list of potters that incorporated the term pearl in some of their marks. Along with this came blue tinted ironstone in which the bluing is very obvious. This appears to be related to the growing popularity of undecorated ironstone in the 1850s. There is a reference to blue tinted ironstone produced by Thomas Till and Son's which was exhibited in the Crystal Palace Exhibition of 1851. They offered two pattern shapes, one called Albany and the other Virginia. Both were available in "White Granite" or "Pearl White Granite" (Godden 1971:95). What was meant by these terms is clear from the following description of William Taylor's pottery in Hanley as described by Jewitt:

> In 1860 the works passed into the hands of William Taylor, who commenced making white Granite and common colour and painted ware, but he discontinued, and confined himself to white granite ware for the United States and Canadian markets, of both qualities—the bluish tinted for the provinces and the purer white for the city trade (Godden 1971:95).

A clue as to the popularity of blue tinted ironstone is provided by a description of wares exhibited at the American Centennial Exhibition of 1876 in Philadelphia.

> The Dresden Pottery Works, of East Liverpool, Ohio, exhibited ironstone china table and chamber ware. This ware is shaded with blue, and resembles the well known Liverpool ironstone (*The Potters Gazette*, 9 December 1876:6).

In another description from the Centennial Exhibition, the term pearl white takes on a different meaning:

> The Centennial, then, has been of great benefit to the American manufacturers of earthenware. . . . the demand for plain white goods has been cultivated, and a beautiful pearl-white article is now demanded in lieu of the old blue-gray tinted wares of Staffordshire (*The Potters Gazette* 27 January 1877:2).

How long the term "pearl" lasted and how strongly it was associated with blue tinted bodies is not clear as indicated by the last quotation which associated pearl-white with wares that showed no trace of bluing. Fifteen of the 16 marks which incorporate the word "Pearl" (second part of this appendix) predate the McKinley Tariff of 1890 which required many English potters to add England to their marks.

Adding cobalt to the body to whiten the slight yellow color of the clays was a fairly wide spread practice and probably is still being done today. Karl Langenbeck in his 1895 *Chemistry of Pottery* states that ". . . it is customary in the case of whiter bodies, to add a small amount of cobalt, to neutralize any faintly yellowish cast, which they may show" (Langenbeck 1895:120). *The Manual of Practical Potting* published in 1907 states that: "In some cases, the chief differences between granite and CC is that the former is stained white, while the latter is not (Binns 1907:24). The 1924 *Clay Products Cyclopedia* offers the following definition:

> QUEEN'S WARE' IRONSTONE' and GRANITE WARE—These terms are used indiscriminately by potters to indicate a grade of white earthenware for dining room service one grade higher than c.c. ware. They are made of superior quality materials, the body being slightly stained by a solution of cobalt, which gives it a bluish-white cast (Guignon 1924:185).

Summary

In the 19th century, it would appear that pearlware went through a complex evolution. Up to around the 1820s the glaze had a distinctly blue tint. When bone china became popular in the first quarter of the 19th century, it probably influenced the earthenware manufacturers to create a whiter ware. Gradually, the cobalt in the glaze was decreased, and, in some cases, a small amount was added to the body to create a whiteware without a blue tint. Later, probably in the 1840s, there was a renewed interest in whiteware with a bluish tint. A manifestation of this was the addition of cobalt to the body resulting in a bluish white which was more subtle than pearlware with its blue tinted glaze. Beginning in the 1850s plain undecorated ironstone became popular and was available in two types—one of which had a blue tinted body which in several cases was referred to as pearl white, pearl stone china, pearl ironstone, and pearl white granite. At the same time, there was also a pearl whiteware available. This suggests that the potters did not perceive the differences which archaeologists have chosen to call pearlware and whiteware. Use of the term pearl became more common when undecorated ironstone became popular, perhaps because decorative terms obviously could not be applied to plain objects.

Beyond chronology, there are few, if any, reasons to organize ceramics by ware types. Interpretation and synthesis of archaeological data with historical sources will be greatly facilitated by organizing ceramics according to their form and the decoration they bear. For example, it makes little sense to separate shell edge plates into creamware, pearlware, and whiteware.

Appendix A, Part 2

Ceramic Markers Incorporating the Word "Pearl" in Their Makers Mark.

Term	Potter	Dates	Source
Pearl (impressed)	Wedgwood	Post 1779	page 55, Eliza Meteyard *The Wedgwood Handbook*, first published in 1875 "Sugar basin, in white ware; edged in gold, and decorated with flowers . . ." (Meteyard 1963).
PEARL or P (impressed)	Wedgwood	ca. 1840–1868 for full word - letter used after 1868	(Godden 1964:558)
PEARL	Wedgwood	Date mark "NSP" 1861	George L. Miller collection, GLM 16, transfer printed and painted plate.
PEARL WARE	Chetham & Woolley	1796–1810	(Godden 1964:14) This is described as a white Jasper by S. Shaw (1829:225).
PEARL STONE WARE	Podmore, Walker & Co	1834–1859	9G7B1 Parks Canada Collection G514 Gordon L. Grosscup Collection X101 Arnold R. Pilling Collection X320 Arnold R. Pilling Collection
PEARL WHITE	Wood & Brownfield	ca. 1838–1850	(Godden 1964:684)
Pearl China	Samuel Alcock & Co	1839	From a cache of pottery dated 1839, see Arnold R. Mountford 1967, page 31. Time capsule buried by S. Alcock, most pieces dated 1839.
PEARL CHINA PW IRONSTONE	W. Baker & Co	1839–1893	George L. Miller Collection, GM9, both marks are on the same piece.
OPAQUE PEARL	J. Clementson	ca. 1839–1864	George L. Miller Collection, GM84
PEARL CHINA	E. & E. Wood	ca. 1840–1846	Enoch and Edward Wood (Godden 1964:686) X113 Arnold R. Pilling Collection
PEARL WHITE	Goodwin Pottery Co	1844–	(Barber 1904:105)
PEARL WHITE IRONSTONE	Cork & Edge	1846–1860	(Godden 1964:174)
Pearl China	B & Co (probably Bodly & Co)	1863–1865	George L. Miller Collection, GM8 (Godden 1964:82)
PEARL IRONSTONE CHINA	Ford, Challinor & Co	1865–1880	George L. Miller Collection, GM67 (Godden 1964:254)
PEARL WARE	Skinner & Walker	ca. 1870–1880	(Godden 1964:580)
PEARL WHITE	Baker & Co. Ltd.	1893–1932	(Godden 1964:51)

Appendix B
Sources for Ceramic Prices

Date	Types present and used	Documents
1770 Feb. 14	Contains mostly CC prices with a few blue painted pieces	Pricing fixing list, Staffordshire Potters (Mountford 1975:3–8)
1783 Sept. 23	Mostly blue edged with some painted wares	Price fixing list, Staffordshire Potters (Mountford 1975:9)
1787 Dec. 27	CC and painted wares	Ceramic Bill from Bristol, England. Hugh Owen, 1883, *Two Centuries of Ceramic Art in Bristol: Being a History of the True Porcelain by Richard Champion . . .*, London, Bell and Dalby.
1795 June 24	Three lists, basalt ware, and "common cream-coloured ware."	Price fixing list, Staffordshire Potters (Mountford 1975:9–10)
1796 Jan. 8	CC ware prices and definitions of sizes for chamber pots, bowls and tea pots.	Price fixing list, Staffordshire Potters (Mountford 1975:11)
1796 April 21	CC, edged, painted, dipped, basalt and printed	Price fixing list, Staffordshire Potters (Mountford 1975:11)
1802 Dec. 31	CC, edged and painted	Ceramic bill from Montreal, Canada Public Archives of Canada, Thomas Cummings Papers Manuscript MG24/D44
1814	CC, edged, underglazed lined, willow, transfer printed, dipped, painted, white glaze, and Egyptian black.	Price fixing list, Staffordshire Potters "Staffordshire Potteries. Prices Current of Eathenware," n.d. Sheet printed by Tregontha, Burslem. 1814 is hand written on the document and the 1846 price fixing list refers to re-establishing the prices of 1814—the two lists have many prices in common.

1824	CC, edged, willow, printed, dipped, and painted	An account book of the Philadelphia China merchant, George M. Coates. Courtesy of the Henry Francis Du Pont, Winterthur Museum, Winterthur, Delaware. Joseph Downs Manuscript Collection, No. 64 X 18.
1833 Nov 11	CC, edged, willow, printed, dipped, and painted	Price fixing list, Staffordshire Potters "Staffordshire Potteries: At a General meeting of Manufactures Held . . . in Hanley . . . Mr. Ralph Stevenson in the Chair . . . NET LIST . . . adopted from the 11th of NOVEMBER, 1833" printed by W. Rowley, Hanley, Staffordshire.
1836 Feb 26	CC, edged, painted, willow, printed, and dipped.	Bill of Lading from John Wilkinson of the Whitehaven Pottery to John Dawson and shipped to Maitland, Kennedy & Co., Philadelphia. Uncatalogued document in the Warshaw Collection of Business Americana, Smithsonian Institution, Washington D.C.
1838 Jan. 20	CC, edged, painted, and printed.	Bill of Lading from William Adams & Sons Pottery in Stoke-upon-Trent—name of customer not on bill—however it is stamped by the U.S. Customs at Philadelphia. Uncatalogued document in the Warshaw Collection of Business Americana, Smithsonian Institution, Washington D.C.
1838 Feb. 1	CC, edged, painted printed, and dipped.	Bill of Lading from William Adams & Sons Pottery in Stoke-upon-Trent to Adams Brothers—place unknown. Uncatalogued document in the Warshaw Collection of Business Americana, Smithsonian Institution, Washington D.C.
1839 Feb. 20	CC, edged, and printed.	Bill of Lading from Ridgway, Morley, Wear & Co. Pottery in Shelton, Staffordshire to George Breed of Pittsburgh. Uncatalogued document in the Warshaw Collection of Business Americana, Smithsonian Institution, Washington D.C.
1846 Jan. 26	CC, edged, dipped, printed, and Egyptian black.	Price fixing agreement of the Staffordshire Potters (Mountford 1975:12–14)
1855 March	CC, edged, sponged, willow, printed, and flow.	Price list, Robert Heron, Fife Pottery, Scotland (Finalyson 1972:118).
1856 April 5 1856 June 6	Common teas, painted, white granite, white china, and White French china.	Two bills from Marston & Brothers of Baltimore to Fahnestock Brothers, Gettysburg, Pennsylvania. Fahnestock papers in possession of George L. Miller.

1857 Feb. 4 Feb. 5 Sept. 28 Oct. 16	Common teas, printed, white granite, and white china.	Four bills from Marston & Brothers of Baltimore to Fahnestock Brothers, Gettysburg, Pennsylvania. Fahnestock papers in possession of George L. Miller.
1858 Feb. 9 Oct. 2	CC, common teas, edged, printed, white granite, and coloured.	Two bills from Turnbull & Co. of Philadelphia to Fahnestock Brothers of Gettysburg, Pennsylvania. Fahnestock papers in possession of George L. Miller.
1860 March 19	Common teas, printed, and white stone.	A bill from Samuel Schober of Philadelphia to Fahnestock Brothers of Gettysburg, Pennsylvania. Fahnestock papers in possession of George L. Miller.
1861 March 25	White earthenware, and white granite.	A bill from Stirk, Field & Co. to Fahnestock Brothers of Gettysburg, Pennsylvania. Fahnestock papers in possession of George L. Miller.
1871 March 31	CC, sponged, white granite	Bill from J. Clemenston Brothers of Hanley, Staffordshire to Warner, Kline and Co. of Philadelphia. Uncatalogued manuscript in the Warshaw Collection of Business Americana, Smithsonian Institution, Washington, D.C.
1874 Feb. 19 Feb. 25	CC, ironstone	Bills of Lading from Goddard & Burgess Pottery Longton, Staffordshire to their own firm of Burgess and Goddard in Philadelphia. Originals are in the possession of George L. Miller.
1881 May 11	CC, white granite	Bill from J. Leopold & Co. of Baltimore to Thomas Wood & Co. of Max Meadows, Virginia. Original in the possession of George L. Miller.

Appendix C

Prices of CC, Edged, and Transfer Printed Vessels

The following prices are for CC vessels and are quoted in English Pence per dozen. Sources are given in Appendix B.

	Inch size	1796	1814	1833	1846	1855
Flat dishes (oval)	10	24	30	22	30	24
	11	36	36	27	36	30
	12	48	42	33	42	36
	14	72	66	51	66	54
	16	120	108	81	108	84
	18	180	168	126	168	126
Covered dishes	10	144	144	108	144	108
Bakers	10	36	42	30	42	33
	12	72	60	54	60	54
Table plates		18	18	14	21	15
Twifflers		14	14	10	16	12
Muffins	7	12	12	9	14	10
	6	10	10	7½	12	8
Tureens	11	360	360	252	360	324
Sauce tureens	5	120	120	96	120	108
Sauce boats	largest	36	36	24	36	30
Totals		1302	1266	944.5	1275	1056

The following prices are for transfer printed vessel and are quoted in English Pence per dozen Sources are given in Appendix B.

	Inch size	1796	1814 Willow	1814 Other	1833 Willow	1833 Other	1846	1855 Willow	1855 Other
Flat dishes	10	180	108	144	42	78	108	36	54
(oval)	11	216	144	180	60	108	144	48	72
	12	252	180	252	84	144	180	54	96
	14	432	252	360	108	192	252	78	120
	16	504	396	504	144	288	396	120	180
	18	720	576	648	252	432	576	216	288
Covered dishes	10	504	360	432	144	252	360	144	216
Bakers	10	252	180	216	72	126	180	81	108
	12	324	252	360	120	192	252	108	144
Table plates		78	48	60	27	36	48	24	24
Twifflers		54	42	48	21	30	42	18	18
Muffins	7	48	36	42	18	27	36	15	15
	6	42	30	36	15	22	30	12	12
Tureens	11	1296	792	1008	432	576*	792	432	684
Sauce tureens	5	432	360	432	288	324	360	216	288
Sauce boats	large	78	72	84	54	60	72	42	60
Totals		5412	3828	4806	1881	2887	3828	1644	2379

*Interpolated price

The following prices are for shell edged vessels and are quoted in English Pence per dozen. Sources are given in Appendix B.

	Inch size	1796	1814	1833	1846	1855
Flat dishes (oval)	10	36	36	27	36	30
	11	48	48	36	48	36
	12	60	66	48	66	48
	14	120	108	81	108	66
	16	180	168	126	168	96
	18	252	240	180	240	168
Covered dishes	10	216	216	120	216	120
Bakers	10	60	60	48	60	36
	12	108	108	78	108	60
Table plates		24	24	18	24	18
Twifflers		18	18	14	18	15
Muffins	7	16	16	12	16	12
	6	14	14	10	14	10
Tureens	11	576	432	324	432	360
Sauce tureens	5	180	180	120	180	132
Sauce boats	largest	48	48	30	48	36
Totals		1956	1782	1272	1782	1243

Appendix D, Part 1
CC Index Values for:
Plates, Twifflers and Muffins

		1787	1796	1802	1814	1824	1833	1836	1838	1839	1846	1855	1858	1861	1862	1874
	inch															
CC, all sizes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Edged	10		1.33	1.37	1.33	1.33	1.29	1.33	1.33	1.20		1.20	1.00			
	8		1.29	1.23	1.29	1.29	1.40	1.25	1.29		1.13	1.25	1.00	1.00	1.00	
	7		1.33		1.33	1.33		1.38	1.33	1.33	1.14	1.20	1.00	1.00	1.00	
	6		1.40		1.40	1.33	1.33	1.45	1.40		1.17	1.25			1.00	
Sponged	10											1.20				
	8											1.25				
	7											1.20				
	6											1.25				
Underglazed lined	10				1.67											
	8				1.71											
	7				1.67											
	6				1.70											
Painted	10								2.17							
	8		1.67						2.36							
	7								2.25							
	6							2.18	2.10							
Ironstone	10												1.69	1.69		
	8												1.80	2.00	1.80	2.25
	7												1.78	2.00	1.78	2.17
	6													2.00	1.75	
Willow	10				2.67		1.93	2.50				1.60				
	8				3.00	2.86	2.10	2.44				1.50				
	7				3.00			2.77				1.50				
	6				3.00		2.00	2.73				1.50				
Other Transfer printed	10		4.33		3.33	3.22	2.57	3.00	2.27	2.20		1.60				
	8		3.86	3.43	3.43	3.21	3.00	2.81	3.00	2.45	2.63	1.50				
	7		4.00	3.50	3.50	2.92			3.00	2.44	2.57	1.50				
	6		4.20	3.60	3.60	2.50	2.93	3.00	3.00		2.50	1.50				
Flow	10											2.40				
	8											2.50				
	7											2.40				
	6											2.25				
Porcelain "enamelled"	10															
	8															
	7															
	6								4.80							

Appendix D, Part 2

Decorative Types, Description for Plates:

The following terms are commonly used in describing plates: dishes, table plates, soup plates, twifflers, muffin plates, bread and butter plates, dessert plates, and cup plates. Dishes almost always refer to platters. None of the documents consulted contain the word platter. Table plates, supper plates, and twifflers are size classes, and none of the documents listed more than one size for these objects. However, different potteries sometimes had a half an inch difference between their table plates. The Staffordshire potter's price fixing lists for 1814, 1833, and 1846 give the following sizes:

Table plates	10 inches
Supper plates	9 inches
Twifflers	8 inches
Muffin plates	7, 6, 5, and 4 inches

Anyone who has measured plates from the first half of the 19th century realizes that they do not fall into such nice even measurements. Perhaps these sizes represents a pre-firing measurement. The Henry Francis Du Pont, Winterthur Museum has a copy of a thrower's and turner's handbook from ca. 1820 for the Spode Factory which lists 8 inch bread and butter plates as being 9¼ inches in diameter when thrown and 5 11/16 inches when fired (Spode 1820:166–67). Once again, it is hoped that further research will shed more light on this subject. Creamware index values have been generated for 10, 8, 7, and 6 inch plates. When dealing with archaeological assemblages, the index value for 8 inch plates (twifflers) was used for calculating the average cost of plates above CC ware.

Decorative Types:

CC

Common acronym for cream colored or creamware. The term lasted well into the 20th century; however, by the 1860s other terms began to replace it, such as common color, common body, and white earthenware. Plain white creamware is available today in such places as dime stores and some department stores. Its color is slightly lighter than the creamware from the 1820s, but when it is held next to a piece of ironstone there is no doubt as to what it is. *The Manual of Practical Potting*, published in 1907, states that: "In some cases the chief difference between granite and CC ware is that the former is stained white, while the latter is not" (Binns 1907:24). CC ware represents the cheapest whiteware available from the 1790s on through today. In the price fixing list of 1814, only four forms were not available in CC ware. By the price fixing list of 1833, over three dozen different forms were not available in CC ware. In archaeological assemblages from the 1820s on, the usual forms recovered in CC ware are plates, bowls and chamber pots. In today's market, CC ware is usually limited to plates, bowls and cups. Nineteenth century documents always have CC ware as the cheapest type, and nothing suggests that it was decorated.

Edged

The most commonly used term for what is called shell edge. The potters price fixing list of 1783 deals largely with shell edge which it lists as "edged with blue." This list indicates it was an item of considerable production by that date. In addition to plates and dishes,

edged ware was available in salad dishes, soup tureens, sauce boats, and butter tubs. By the 19th century, most shell edge vessels were plates and dishes. Blue and green were the most common edge colors and there is no indication of any difference in price between them. Shell edge remained common in ceramic bills into the 1860s, by which time it was sometimes the same price as CC plates of the same size.

Sponge

Not common in flatware. More often it is found on teaware and bowls. The 1855 price list of Robert Heron's Fife pottery prices sponge decorated plates at the same level as edged decorated.

Underglaze Lined

A simple line or sometimes two lines painted on the rim and the inner edge of the marley. Correspondence from Josiah Wedgwood to his partner in 1771 and 1772 indicates that they were using a mechanical device for guiding the application of bands on their creamware (Finer and Savage 1965:116–18). The Wedgwood Catalog for 1774 lists green double lines, brown double lines, and blue lines as decorative types (Mankowitz 1953:57). The only price information found was from the 1814 price fixing list which described the type as "Under Glazed Lined." The simplicity of this design can be misleading as to its economic status. Its price is above edged plates. Creamware and pearlware plates with one or two simple brown or blue lines around the rim are fairly common in collections from Parks Canada sites from the War of 1812 period.

Painted

Plates with painted designs are not common in the 19th century. For the late 18th century, a price was found for blue painted plates, and some prices were found for painted plates in 1836 and 1838. Motifs on the earlier painted plates were probably stylized chinese scenery of floral motifs while the later ones are almost certainly floral types. Interestingly, none of the price fixing lists showed prices for flatware. Nothing was found to suggest that blue painted and polychrome represented a price difference.

Willow

The "old war horse" of transfer printed patterns. Willow was one of the first patterns to be transfer printed under-the-glaze. By 1814, the potters fixed its price below that of other transfer printed patterns. It is still available today.

Transfer Printed Patterns

With the separation of willow ware as a cheaper type of transfer printed ware, other patterns assumed a higher status. Part of this may have been due to smaller economy of scale and the speed with which patterns lost their popularity. The price fixing lists of 1814 and 1833 both list willow as a cheaper form of printed ware. However, the 1846 price fixing list only has one price level for printed wares, and it repeats the prices for willow ware from the 1814 list. The 1846 list claims to be restoring the prices of 1814 which except for transfer printed wares it does. Robert Heron's 1855 list also divides willow from other printed patterns. Willow was cheaper than other patterns except in plates from 10 down to 3 inches. For these the price for each size is the same. None of the documents consulted suggest that there is a price difference for different colors in printed wares. Nothing was found on prices of vessels which combined printed and painting.

Flowing Colors

Often referred to as blue flow. Flowing colors were almost always associated with transfer printed patterns. However there are examples of blue and purple painted vessels in flowing colors. Robert Heron's 1855 price list has flowing colors at almost 60% above the price of transfer printed plates and muffins plates. For other forms, the cost difference was not so great. More information will be needed to project the long term cost status of flowing colors.

White Granite or Ironstone

Until the late 1840s the stone chinas were usually decorated, sometimes combining transfer printing and painting. The only price data found for this early period is from a series of auctions held by the Mason Factory (Godden 1971:115–6). Price information from these auctions is limited to the minimum acceptable bid, and no attempt was made to work this information into index numbers. In the mid-1850s, plain white ironstone or granite came into popularity. It appears to have come in at a level comparable to transfer printed wares. None of the price lists examined had prices for white ironstone with embossed decoration as a separate price category. Perhaps some of the index numbers represent white ironstone with molding. More details are presented in Appendix E, Part 1.

Appendix E Part 1
CC Index Values for Tea Cups and Saucers

Types		1770	1795	1796	1802	1814	1824	1846	1856	1857	1858	1860	1871	1874	1875	1881
	not given				1.00				1.00	1.00	1.00	1.00		1.00		1.00
CC	unhd	1.00	1.00	1.00		1.00		1.00					1.00		1.00	
	hd.		2.09	1.80		1.67		1.55								
	not given															
Sponged	unhd.												1.17			
	hd.															
	not given															
White Glazed	unhd.					1.33										
	hd.					2.00										
	not given				1.60		1.44		1.60							
Painted	unhd.	1.33		1.80		1.50		1.23							1.17	
	hd.			2.60		2.17		1.77								
Ironstone	not															
or White	given															3.33
Granite	unhd.								3.60	3.00	4.00	4.00	2.50	2.77	2.00	
(undec-	hd.										5.00	5.00		3.23	2.75	
orated)	not															
	given						3.00				4.20	4.00				
Printed	unhd.		4.09	3.40		3.00		2.45		3.00						
	hd.		5.18	4.20		3.67		3.00		4.00						
	not															
Porcelain	given						4.00									6.00
undescribed	unhd.															
	hd.															
	not															
Porcelain	given															
Plain white	unhd.									5.83						
	hd.															
	not															
Porcelain	given														3.00	
Printed	unhd.															
	hd.															
	not															
Porcelain	given														4.00	
Lustre	unhd.															
	hd.															

hd.: with handle
unhd.: without handle
not given: not mentioned

Appendix E, Part 2

Decorative Types, Description for Tea Cups and Saucers

Teas are more difficult to deal with than flatware due to their size variations and because they came with or without handles. Size classes include: Norfolk, London, Irish, and Breakfast. London, in addition to being a size can also refer to the shape. Shapes include: Grecian, French, and Canova among others. Price fixing lists and potters' price lists suggest that the standard cost for handled cups was one shilling extra per dozen. In addition to handles, it was possible from roughly 1795 to 1814 to order cups and saucers with a brown line around the rims at one shilling extra per dozen. Parks Canada sites from the era of the War of 1812 occasionally have blue transfer printed cups and saucers with brown lined rims.

With these many variables, it is difficult to be sure that same size and type are being compared over time. Prior to the 1860s, most cups are unhandled and of London size. Bills of lading for ceramics coming to North America usually provide size and handle information; however, merchants' account books and wholesalers bills rarely do. When the latter mention handles, it is almost always because the cups are handled. This situation forces the researcher to use some information in which it has to be assumed that the cups are unhandled. When more information has been collected the cases where this assumption exists can be tested. For the present, a category of "handles not mentioned" has been provided. Figure 3 illustrates the number of painted, printed, ironstone, and porcelain cups and saucers available for one dozen CC cups and saucers. In this table, the data points for 1795, 1796, 1814, 1846, 1871, and 1875 are all based on unhandled London size cups and saucers. The other data points are assumed to also be unhandled London size cups and saucers. However, descriptions were often lacking for one or two of the decorative classes. The erratic behavior of the ironstone line in Figure 3 may indicate that some of the CC index numbers mix handled and unhandled cups.

When calculating CC index values for teas, handles were treated as an additional form of decoration. In other words, the cost of a handleless CC London size cup was divided into the cost of the same size CC cup with handles and all other decorative cups with and without handles. In several cases the cost of handled cups of one decorative type was equal to or more costly than handleless cups of the next decorative type. For example, in the price fixing list of 1796, a dozen CC cups and saucers with handles cost the same as a dozen painted cups and saucers without handles. In the price fixing lists of 1814 and 1833, a dozen CC cups and saucers with handles actually cost more than a dozen painted cups and saucers without handles. This may have been a factor in the persistence of handleless cups in the 19th century. Perhaps the next step up in decorative type was preferred over handles on a less expensive type.

Teaware decorative types

CC

Cream colored. Like plates, CC teas in the 19th century always refer to undecorated vessels. The term lasts into the 20th century. However, CC cups and saucers from the second half of the 19th century might be closer to what archaeologists would call whiteware. Bills from the 1850s and 1860s sometimes use the term "common teas" for the cheapest type available. Because of the low status of CC teas, their prices are often missing in the documents, complicating the building of an index of cost above CC teas. This was particularly true for the documents from the 1830s.

White glazed

This term is from the 1814 price fixing list and may represent plain undecorated pearlware. If this is the case, then pearlware definitely had a status above CC ware. Hollow wares and teawares are the only types available in "White Glaze." Plain undecorated pearlware teaware is rare and nobody that the author has consulted recalls observing any.

Painted

Prices for painted teas are common. Some earlier price lists list them as blue painted; however, there is no evidence at this point in the research to suggest that polychromes are any more expensive than blue painted teas. Another term used to describe painted cups and saucers is colored teas. No evidence has been found for such terms as peasant painted or gaudy dutch.

White granite or ironstone

Bills from 1857 and 1860 have ironstone and printed teas as being equal in price. This is the best evidence that plain white ironstone had a status comparable to transfer printed teas when the former became popular in the 1850s. From the 1850s into at least the 1880s, white ironstone is very common in the bills examined, and the amount of transfer printed teas greatly declines.

Flowing colors

Unfortunately only the 1855 price list of the Fife Pottery had flowing color teas, and it did not have CC teas which meant the price could not be scaled. The following color teas were 20% more expensive than regular transfer printed teas.

Porcelain

This is a major area where more information is needed. Potters that produced CC ware usually did not produce porcelain; therefore, documents containing porcelain prices rarely have the necessary CC ware prices to scale them. However, wholesalers' bills and account books often list porcelains, but the descriptions are a little brief. Terms like Porcelain teas, China teas, or French Porcelain are typical of the descriptions. Prices of the porcelain teas in the second half of the 19th century may be for German, Austrian, or Czechoslovakian porcelain which was making inroads on the traditional market for English and French porcelain. Teaware appears to have been available in porcelain more often than flatware and bowls. Judging from the documents examined, porcelain appear to represent the top of the line in price.

Appendix F, Part 1

CC index Values for Bowls

	1802	1814	1824	1833	1836	1838	1846	1855	1858
CC	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dipped		1.20	1.20	1.29	1.40	1.20	1.20		1.10
Sponged								1.10	
White glazed		1.60							
Painted	2.33	1.60	1.67	1.71	1.80	1.60	1.60	1.30	
Printed		2.80	2.50	2.57	3.00		2.80	2.00	2.00
Flow								2.40	
White granite or ironstone									2.00
Basalt		6.00					6.00		

Appendix F Part 2

Decorative Types, Description for Bowls

Bowls present another set of problems in studying ceramic prices. Marketing of bowls is directly related to their size. Common sizes for bowls are 3s, 6s, 9s, 12s, 18s, 24s, 30s, 36s, 42s, and 48s. These numbers are the quantity sold as a potters dozen, i.e., bowls classified as 6s come six to the dozen and those classified as 24s come 24 to the dozen. Potter's price lists often present the price per dozen which is variable according to the size of the bowls being ordered. For example, the price of the bowls in the 1833 price fixing list are presented as follows:

Type	Cost per dozen
CC	21d
Dipped	27d
Painted	36d
Printed	54d

Establishing the cost of an individual bowl of a given size, for example, a size 6, would be accomplished by dividing the dozen cost by six. The matrix table below gives the individual size of bowls as priced by the 1833 price fixing list.

Type	Cost per dozen	Cost per bowls			
		4s	6s	12s	24s
CC	21d	5¼	3½	1¾	⅞
Dipt	27d	6¾	4½	2¼	1⅛
Painted	36d	9	6	3	1½
Printed	54d	13½	9	4½	2¼

Knowledge of how the pricing structure works allows more flexibility in generating price scale relationships. Consider, for example, a bill which presents the following:

Ware	Unit price	Total
8 CC bowls 24s	7/8d@	7d
16 dipped bowls 12s	2¼d@	36d
4 painted bowls 4s	9d @	36d
8 printed bowls 6s	9d	72d

A cursory examination of the above list suggest that the differences in the size eliminates any scaling of their value in relation to CC, i.e., the same size for each decorative type is not represented. However, by multiplying the unit price times the size, the potter's dozen price can be derived. In the above case, the bill uses the values from the 1833 price fixing list. Other vessels commonly sold in potters' dozens include teapots, sugar-bowls, creamers, chamber pots, mugs, and jugs (pitcher). This pricing system appears to be an out growth of the system used to pay operatives in the potteries. Wages were fixed per dozen units completed, and the dozen was adjusted according to vessel size.

Wholesale and retail documents from North America indicate less use of the potter's dozen in favor of sizes such as half pint, pint, quart, two quart, and gallon sizes with 12 bowls to the dozen. In figure 5, the CC index values for 1802, 1814, 1833, 1836, 1838, 1846, and 1855 use the cost per potters' dozen in the calculations. The 1824 prices are based on pint size bowls, and the index for 1858 uses number 30 bowls. However, evidence in the 1858 bill suggests the use of straight dozen counts rather than potter's dozens.

Bowls, Decorative Types

CC

Bowls function both in food preparation and table service. The kitchen is seldom considered as an area of social display, and this probably helps to account for the staying power of CC bowls as a marketable item. In the larger sizes, bowls are often available in only CC and dipped, suggesting their place of use and the limits of their usefulness in status display. CC bowls were sometimes in competition with yelloware and crockery bowls in the larger sizes, and prices for these wares will be needed to better understand bowls in terms of social status.

Dipped

This term is rather vague in its meaning. It appears in the price fixing lists of 1814, 1833, and 1846. The 1824 account book and bills of the Fahnestock Brothers in the 1850s and 1860s do not use the term dipped but use mocha and colored. The colored bowls appear to be cheaper than painted bowls and probably are some variant of dipped. In the 1836 list of minimum working prices for potters, the wages for "dipped" ware included banded, mocha, blue banded, and common cable (Mountford 1975:20). The wages for all four types are the same, suggesting that dipped bowls as listed in the price fixing lists and other documents could have meant any of these types. Therefore, they have been treated as one type in the indexing, and the resulting values are consistent. Dipped bowls are the cheapest decorated bowls available and are comparable to sponged and edged vessels in status.

Sponged

Very close to the price structure for dipped bowls. However, only one price has been located.

Painted

Again there is nothing to indicate a difference between the cost of blue painted and polychrome painted bowls. The prices of painted

bowls closely follow the rise and fall of dipped bowl prices.

Printed

Prices for transfer printed bowls seem to have the same relationship to CC prices that teas do, i.e., there was no large drop in price towards them. Printed bowls are related to tableware assemblages. Larger bowls are often not available in transfer printed patterns. Once again, there is no evidence for price differences related to color of the transfer print.

Flowing colors

Only one price available. In 1855 it was 20% more expensive than regular transfer printed bowls.

White Granite or Ironstone

Only one price was collected with the necessary CC price for scaling. Again, it shows that plain ironstone was sold for the same price as transfer printed vessels.

Basalt or Egyptian Black

Basalt is a stoneware body containing maganese dioxide. It is rather fine grained and almost always unglazed. Basalt continued to function as a ware type because of its great difference in appearance from CC, pearlware, whiteware, and ironstone. Basalt most commonly occurred in teapots, sugar-bowls, creamers, and ornamental items such as vases. Bowls of basalt were probably tea equipage. Only the price fixing lists of 1814 and 1846 provided basalt bowl prices, and considering the latter list was designed to restore the prices of 1814, the straight line in Figure 4, may be deceptive.

Appendix G

This appendix contains the minimal vessel count for cups, plates, and bowls from the four sites graphically represented in Figure 6. Along with the vessel counts are the calculations involved in generating the average values of cups, plates, and bowls in terms of the cost above CC vessels.

Tenant Farmer's House: Item A

The Moses Tabbs house on Pope's Free hold, St. Mary's County, Maryland, was occupied by tenant farmers from the 1780s to around 1860. Excavation of the cellar of this structure by the St. Mary's City Commission produced occupation debris dating from about 1800 to 1860. The occupation level was divided into two units by a dirt ramp into the cellar which appears to have been built around the early 1840s (Miller 1974a). The first assemblage is from the pre-ramp occupation (ca. 1800 to ca. 1840), and it has been indexed with the scale of values for 1824. The second assemblage is from the post-ramp occupation (ca. 1840 to ca. 1860), and it has been indexed with the scale of values for 1846.

Jonathan Hale Log Cabin: Item B

Jonathan Hale's log cabin was built by squatters in 1810 and was occupied by the Hale family until around 1830. It is located in Summit County, in the Connecticut Western Reserve of Ohio (Horton 1961). The site was excavated by David Frayer under the direction of David S. Brose of Case Western Reserve University. The Minimal vessel count used for this appendix was compiled by the author during the summer of 1971. Scaling this collection was done with the index for 1824.

Glass Workers House and Glass Factory: Item C

The Franklin Glass Works was built in Portage County, Ohio, in 1824 and abandoned by 1832 (Miller 1974b). Portage County is located in the Connecticut Western Reserve of Ohio. Excavation of the factory area was under the direction of David S. Brose of Case Western Reserve University. The house area was excavated by the author for the Western Reserve Historical Society. The index values of 1824 were used to scale these collections.

Walker Tavern: Item D

The Walker Tavern was built around 1834 on the Detroit to Chicago Road 60 miles west of Detroit. A small trash dump and basement fill dating from the 1830s to about 1850 was recovered from the excavations carried out by Gordon L. Grosscup of Wayne State University. The ceramics report was written by George L. Miller (Grosscup and Miller 1968). This assemblage was indexed by using the 1846 set of CC values.

Tenant Farmer's House

Site:
Context 1 Pre-basement ramp — Dates ca. 1800-ca. 1840
Context 2 Post-basement ramp — Dates ca. 1840-ca. 1860

Form		Type of decoration	Scale used 1824 Index value		Context 1 Number recovered		Product	Scale used 1846 Index value		Context 2 Number recovered		Product
Cups	Sponged							1.23 est	×	1	=	1.23
	Painted	1.44	×	3	=		4.32	1.23	×	13	=	15.99
	Printed							2.45	×	4	=	9.80
		Total		3			4.32	Total		18		27.02
		Average			value	=	1.44	Average		value	=	1.50
Plates	CC	1.00	×	2	=		2.00	1.00	×	2	=	2.00
	Edged	1.29	×	5	=		6.45	1.13	×	13	=	14.69
	Willow							2.63	×	3	=	7.89
	Printed		3.21	×	1	=	3.21	2.63	×	1	=	2.63
			Total		8		11.86	Total		19		27.21
			Average		value	=	1.46	Average		value	=	1.43
Bowls	Dipped		1.20	×	4	=	4.80	1.20	×	4	=	4.80
	Painted		1.67	×	1	=	1.67					
			Total		5		6.47	Total		4		4.80
			Average		value	=	1.29	Average		value	=	1.20

Site: Jonathan Hale Log Cabin
Dates ca. 1810-ca. 1830

Form	Type of decoration	Scale Year 1824 Index value		Context 1 Number recovered		Product
Cups	CC	1.00	×	3	=	3.00
	Sponged	1.44 est	×	2	=	2.88
	Painted	1.44	×	11	=	15.88
	Printed	3.00	×	1	=	3.00
		Total		17		24.72
		Average		value	=	1.45
Plates	CC	1.00	×	4	=	4.00
	Edged	1.29	×	16	=	20.64
		Total		20		24.64
		Average		value	=	1.23
Bowls	CC	1.00	×	2	=	2.00
	Dipped	1.20	×	1	=	1.20
	Painted	1.67	×	4	=	6.67
	Yellow	1.00 est.	×	1	=	1.00
		Total		8		10.87
		Average		value	=	1.36

Site: Walker Tavern
Context 1 Basement Fill
Dates ca. 1834-ca. 1850

Form	Type of decoration	Scale Used 1846 Index value		Context 1 Number recovered		Product
Cups	Sponged	1.15	×	1	=	1.15
	Printed	2.45	×	8	=	19.60
		Total		9		20.75
		Average		value	=	2.31
Plates	Edged	1.13	×	2	=	2.26
	Printed	2.63	×	14	=	36.82
		Total		16		39.08
		Average		value	=	2.44
Bowls	Dipped	1.20	×	3	=	3.60
	Printed	2.80	×	7	=	19.60
		Total		10		23.20
		Average		value	=	2.32

Site: Franklin Glass Works
Context 1 House area
Context 2 Factory area

Dates 1824-ca. 1832
Dates 1824-ca. 1832

Form	Type of decoration	Scale used 1824 Index value		Context 1 Number recovered		Product	Scale used 1824 Index value		Context 2 Number recovered		Product
Cups	Painted	1.44	×	18	=	25.92	1.44	×	12	=	17.28
	Printed	3.00	×	15	=	45.00	3.00	×	9	=	27.00
		Total		33		70.92	Total		21		44.28
		Average		value	=	2.15	Average		value	=	2.11
Plates	CC						1.00	×	5	=	5.00
	Edged	1.29	×	31	=	39.99	1.29	×	24	=	30.96
	Willow						2.86	×	1	=	2.86
	Printed	3.21	×	13	=	41.73	3.21	×	3	=	9.63
		Total		44		81.72	Total		33		48.45
		Average		value	=	1.86	Average		value	=	1.47
Bowls	CC	1.00	×	4	=	4.00	1.00	×	2	=	2.00
	Dipped	1.20	×	6	=	7.20	1.20	×	4	=	4.80
	Painted	1.67	×	3	=	5.00	1.67	×	1	=	1.67
	Printed	2.50	×	4	=	10.00	2.50	×	1	=	2.50
		Total		17		26.20	Total		8	=	10.97
		Average		value	=	1.54	Average		value	=	1.37

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