

## Artifact Analysis

The research objectives of the artifact analysis were presented in the Research Design chapter. A more detailed description of the methods of analysis and the results of the analysis are given here.

### Raw Data Analysis

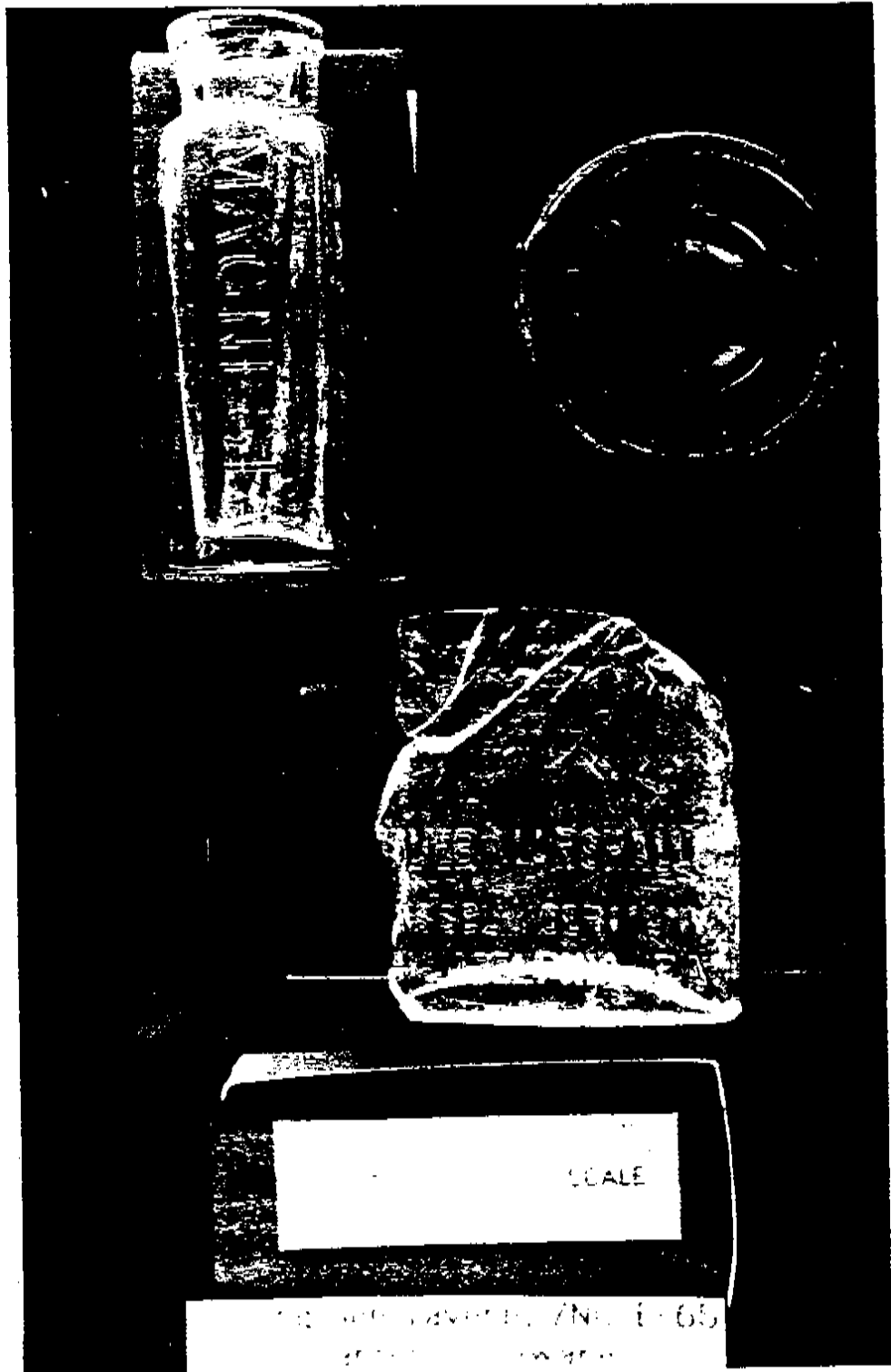
In the first step of processing, artifacts were washed and sorted into general categories by individual provenience unit, for example "level" and "square"<sup>1</sup>. Separate analyses were performed on the glass, ceramics, metal, oyster shell and bone. For the glass and ceramics, computer coding sheets were prepared, to record a variety of physical and functional attributes for automatic data processing. The coding procedures are similar to those used for other projects where large quantities of artifacts have been retrieved, for example data recovery activities in Bridgeboro, New Jersey (Thompson 1984a). Because of the fragmentary nature of much of the material recovered, little detailed information about vessel function could be obtained. Glass, with a few exceptions, could only be assigned to general categories such as "bottle glass" and "window glass". Complete embossed markings were also rarely observed and this limited the amount of information about geographical sources that was available (Plate 8 shows some exceptions). Likewise, functional assignments of ceramic sherds were somewhat limited, although information on decorative attributes was rather more easily observed and recorded. Metal artifacts were identified to function where possible, although much of the material was in poor condition and not identifiable. Bone was identified to the degree possible given the fragmentary nature of the samples, and information about butchering and other modification was recorded. Shell was analyzed for seasonality and environment of origin.

### Provenience Groupings

After the initial raw data analysis, both the excavation and contextual data and the artifactual data was examined to construct coherent groupings of the unit proveniences for more interpretive analysis. The objective of this procedure was to define groups of materials that were consistent in terms of their origin, as defined by soil and depositional contexts identified in the field, and date and function, as determined by observing the characteristics of the artifact assemblages. The general subdivisions of the depositional contexts have been described previously, and these were used as provisional groupings, while characteristics of the artifacts were explored to subdivide these groupings, if necessary. A variety of references, listed in the Bibliography, were used to aid in the identification and interpretation of the relevant attributes.

Dating - The ceramic typology developed by Stanley South (1972,1977) for the computation of the Mean Ceramic Date was used to generate the calculations for proveniences and groups. Because his scheme was developed from data for colonial and late eighteenth century sites, some modifications to his type scheme have been proposed to better accomodate nineteenth century contexts (i.e. Garrow 1982). The

Plate 9: Embossed Bottles



application of these additional analytical types is sometimes obscure and difficult to apply on a consistent basis, so we have elected to use only one additional type over South's original grouping for dating purposes: a "General Pearlware" category, which is coded for materials that don't otherwise fall into one of South's types, but are still clearly Pearlware. The dates for this type are inclusive, from the earliest to the latest of the Pearlware type designations. The dates for the contexts at the tavern lot may therefore be somewhat earlier than those calculated using finer divisions of nineteenth century types, such as Garrow's "late ware", and are likely to be somewhat earlier than the actual origin of the contexts or materials included within them. The discrepancy between the computed date and the actual date probably increases through time. This inaccuracy was felt to be preferable to that generated by inconsistently applied type designations. Dates given for sites with which some comparisons are made are usually provided by the sources of the data and are not necessarily exactly comparable to those calculated from the hotel lot samples. The calculation formula used for these dates is the one developed by South (1972:217)

$$Y = \frac{\sum_{i=1}^n X_i \cdot f_i}{\sum_{i=1}^n f_i} - (1.1 \text{ yrs})$$

In this formula "Y" is the value for the Mean Ceramic date that the computations on the right side of the equal sign yield. Those calculations are completed by summing ("sigma") the products of the sherd counts for the datable types and the median date for each type ("Xi • fi") -- the numerator of the fraction on the right side of the equal sign -- and dividing by the sum of those products by the total sherd count ("sigma fi"). From the computed value of the fraction, 1.1 years is subtracted, since empirical evidence suggests that this yields a more reliable date (South 1972:217). In addition, Chinese porcelain Types 26 and 39 are not included since their long period of manufacture tend to skew the dates too early.

A number of other considerations entered into the evaluation of the dates for the different contexts and groupings. An analysis of the glass technology was made, since the rather rapid pace of development in the glass industry during the nineteenth century (in comparison to ceramics) provides a number of "termini post quem" that can be recognized if sufficiently large fragments are present. A certain allowance for intrusive contamination in the upper levels of the midden was also made. The same allowance was made for the presence of wire nails, although these did not penetrate the early nineteenth century contexts much, where cut nails and, occasionally, wrought nails were the rule. The number of reconstructable labels for both glass and ceramics was disappointingly small, for both dating and geographic analysis, but those that were observed were generally consistent with the other forms of analysis. Feature 99 contained the only noticeable number of kaolin pipe stems and the Binford formula was used to calculate a date based on the bore diameters of the stem fragments (Binford 1972:233):

$$Y = 1931.85 - 38.26(X)$$

where Y is the date estimate sought, and (X) is the calculated arithmetic mean of the pipestem bore diameters from the sample, measured in sixty-fourths of an inch.

The pipestem date for Feature 99 was earlier than that clearly indicated by the Mean Ceramic Date Calculation, and this is consistent with the general observation that this calculation declines in accuracy toward the end of the eighteenth century. With these general observations on the dating of the contexts in hand, we can proceed to a discussion of the individual context groupings. The Provenience Group numbers were assigned arbitrarily<sup>2</sup>, and the groupings are discussed below in order by date, as calculated using the Mean Ceramic Date Formula. Figure 20 at the end of the last chapter shows the location of the Provenience Groups.

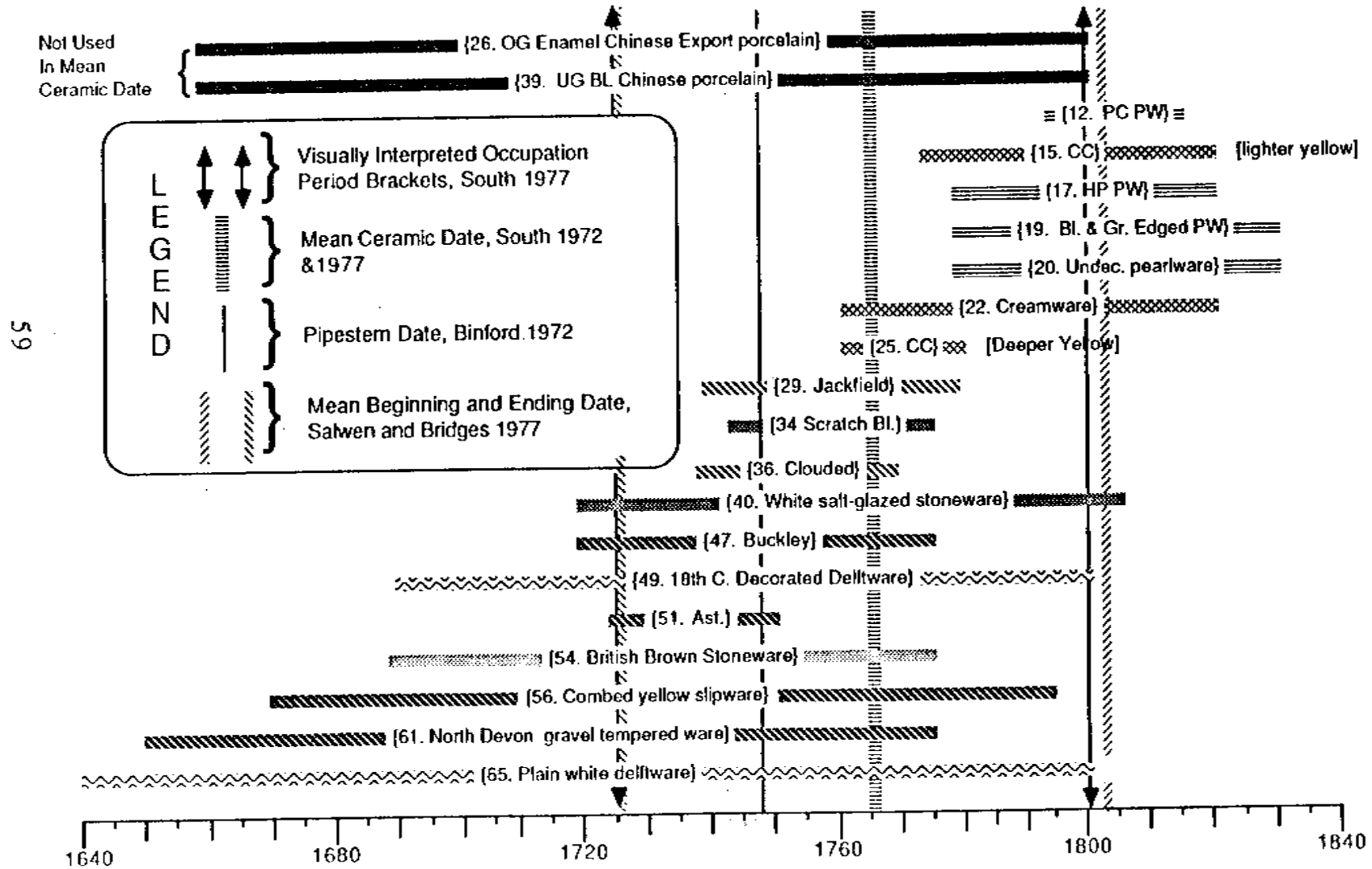
Feature 99 - The materials from various units that could be assigned to this feature were grouped together as a single Provenience Group, equivalent to the others described below. This linear feature was interpreted in the field as a French Drain, presumably for the purpose of draining accumulated water off of a location higher on the lot -- quite possibly a privy or privies. No stratigraphy was apparent in the fill of this feature, the bottom of which was three and a half feet below the present surface at its deepest point. The excavation of the fill had been divided into at least two arbitrary levels in each excavation unit however, so the artifacts from these were first analyzed separately from each other and from the items collected from among the rock and brick bat layer at the bottom of the feature, to determine if there was any difference in the age of these groups that would reflect a gradual accumulation of sediment in the feature. No significant differences in the dates for these subdivisions were observed, so the materials from the entire feature were grouped together for further analysis, on the assumption that the feature had been filled at approximately one time. An illustration of the type ranges used to calculate the Mean Ceramic Date, and the visually interpreted bracket dates is given in Figure 21. The Mean Ceramic date was calculated at 1765.9, while the pipestem calculations yielded a date of 1746.8 (as mentioned previously, the pipestem date is assumed to be unreliable for a context this late). The visually interpreted bracket dates, which are based on the median beginning and ending dates of the (dated) types in the assemblage, are 1725 and 1800 (see South 1972, 1977).

The highly fragmented nature of the artifacts as well as the lack of dating difference between the arbitrary levels in the feature suggest that the materials are secondary deposit from midden or, possibly, privy cleanout so the brackets date the source assemblage, rather than the accumulation of privy fill. All of these dating indicators must be regarded as approximate, but it may be noted that the beginning bracket date corresponds generally to the point in time (1722) when James Waters separates the 13 1/2 acre tract from his other holdings, and sells it to John Jordan (or Jordain), according to the recitation in the deed S2:245 (see Table 1). The ending bracket date corresponds roughly to the construction of the stone dwelling begun by Peter Springer and completed by Hannah Springer in 1806, so the contents of the privy represent the eighteenth century occupation of the lot, and further are assumed to originate, at least in part, from the use of the property for a tavern during that period.

A selection of sherds from the ceramic collection from this provenience is given in Plate 10. The bottom four rows of sherds represents variations on the

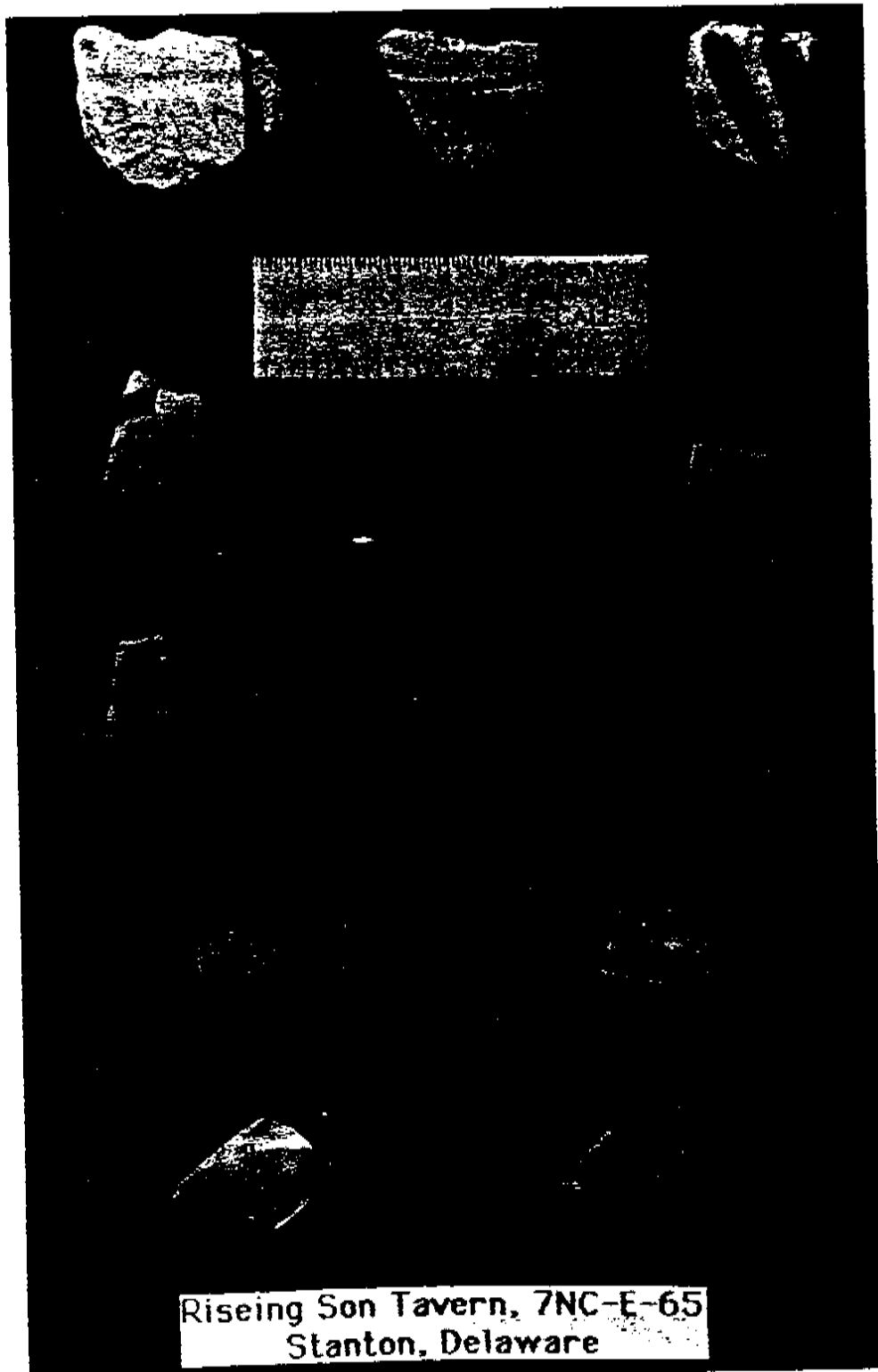
**Figure 21: Feature 99, Date Scale**

fi = 367, Mean Ceramic Date: 1765.9  
 Pipestem Date: 1746.8



59

Plate 10: Ceramics, Feature 99



oriental blue-on-white theme, original examples of which appear in second row up from the bottom. Since this design theme found extensive expression on vessels devoted to the tea ceremony, it is clear from the range of materials present in the feature that this social activity was an important one at the tavern.

Provenience Group 31, Midden West of Upper Foundation - These materials were collected from the in-situ soil horizons in the squares west of the upper foundation. A Mean Ceramic Date of 1812.9 was obtained from the datable ceramics. It should be repeated here, that this date and the other, later dates from the nineteenth century are likely to be becoming increasingly earlier than the actual origin of the materials. This is probably reflected in the fact that the Mean Ceramic Date is rather closer to the ending bracket date of 1820 (Figure 22), than it is to the beginning bracket of 1780<sup>3</sup>. In any event, it is clear that this assemblage originates from the period in which the Riseing Son Tavern was owned and was possibly being operated by "Peter Springer's heirs", including Hannah Springer and Joseph Springer. The artifacts are from "sheet midden" deposits of the kind that commonly occur toward the rear of a functioning domestic or commercial unit, rather than around the principal residence. The assignment of particular proveniences to this group was based on their excavation context. The source horizons were not particularly deep, and no attempt was made to make divisions within them on an arbitrary basis, by depth. In addition they were easily identified and separated from fill in the field.

Provenience Group 37, Screened Fill West of the Upper Foundation - This provenience group provided the next earliest Mean Ceramic Date of 1818.8 (Figure 23). It is designated "Screened Fill" in order to distinguish it from Provenience Group 38, which includes materials surface collected from fill horizons rather than from screen samples. All provenience groups other than Provenience Group 38 were collected while trowelling, or from screen samples. The proveniences assigned to Group 37 were interpreted in the field as entirely displaced or mixed - unless a particular level was screened from a clearly undisturbed midden horizon, it was assigned to this category, which overlay the preceding one. By contrast to some of the fill horizons lower (farther south) on the lot, the ones that are included in this group probably are only redistributions of soils and materials that originated farther north on the lot, and may be viewed as secondary or "tertiary" midden deposits. They include materials such as delft and creamware that date from the earlier occupations, as well as whiteware, wire nails, and fragments of disposable soft drink bottles, from more recent times.

Provenience Group 34, Lowest Midden West of the Lower Foundation - The midden deposits in the lower part of the lot were generally thicker, and showed some discontinuous horizonation, although it was not possible to consistently separate these levels during excavation. To allow for the possibility that there might be some temporal separation among these deposits the lowest levels in each unit (that were not otherwise assigned to another provenience such as Fence Line disturbance) were combined and a dating analysis was performed on them separately from the remaining midden materials. The date obtained for Goup 34 was 1819.7 (Figure 24), and, while this was only about four years earlier than the overlying midden materials (Group 35), the difference was regarded as marginally significant, so the separation was maintained. Like the midden in Group 31 this is sheet midden, and

Figure 22

# RISEING SON TAVERN (7NC-E-65): Provenience Group 31, Midden West of Upper Foundation

Fi = 180, Mean Ceramic Date, 1812.9,  
Provenience Group 31

62

**LEGEND**

Visually Interpreted Occupation  
 Period Brackets, South 1977  
 Mean Ceramic Date, South 1972  
 & 1977

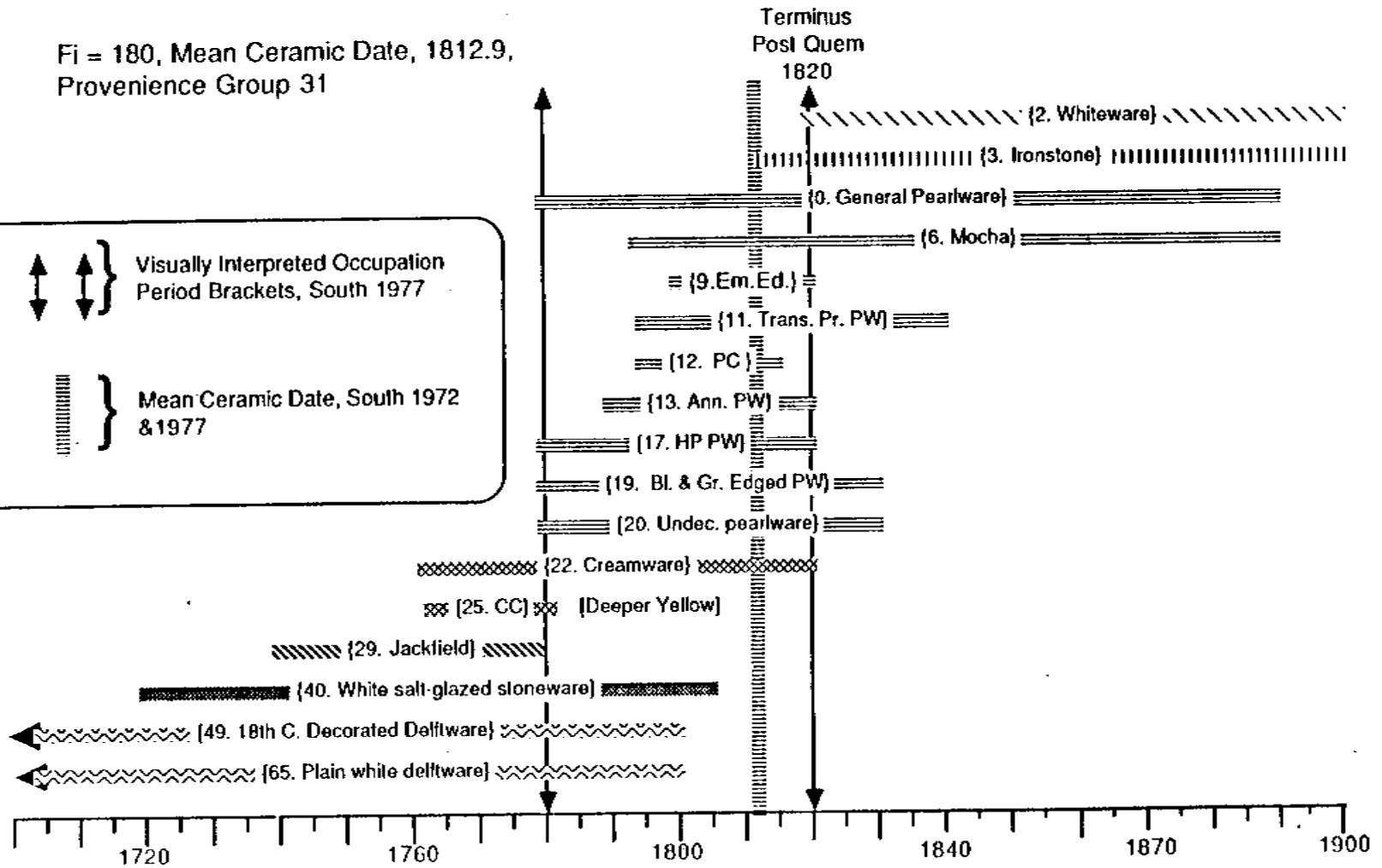




Figure 23

# RISEING SON TAVERN (7NC-E-65): Provenience Group 37, Screened Fill West of Upper Foundation

Fi = 190, Mean Ceramic Date, 1818.8,  
Provenience Group 37

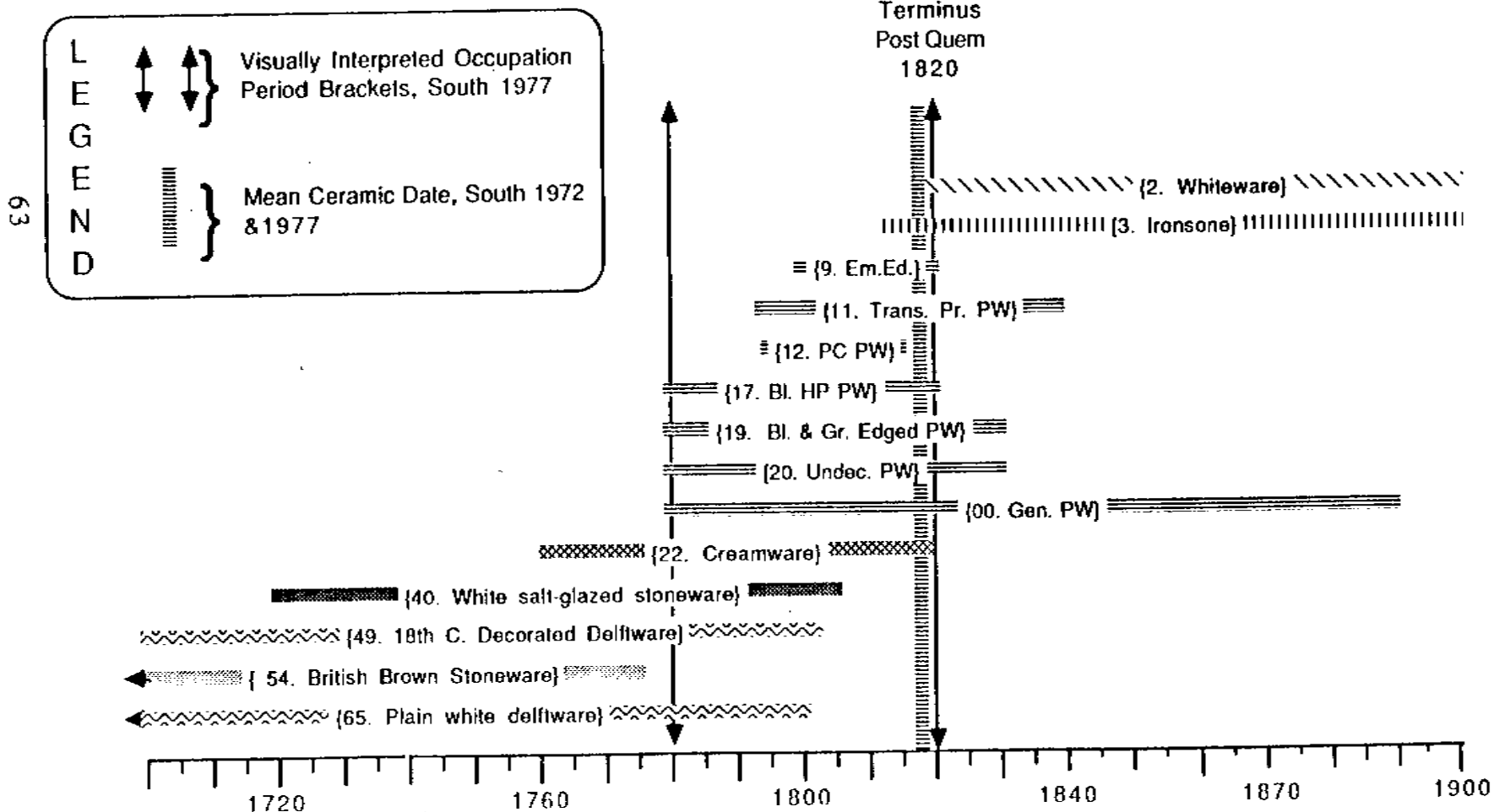
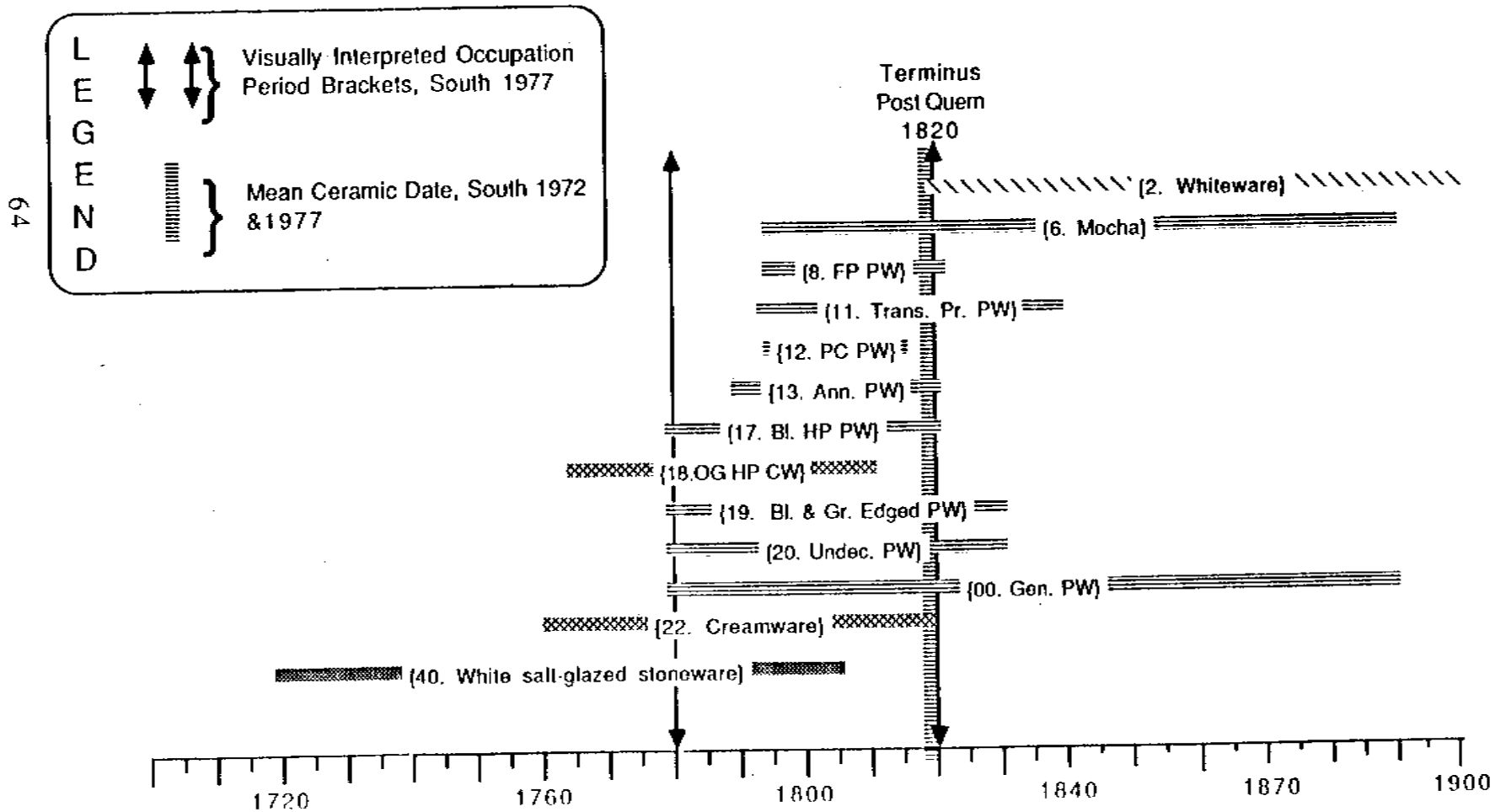


Figure 24

# RISEING SON TAVERN (7NC-E-65): Provenience Group 34, Lowest Midden West of Lower Foundation

Fi = 447, Mean Ceramic Date, 1819.7,  
Provenience Group 34



the artifacts are in general quite fragmented. It appears that household (and other) trash was brought back here and simply thrown toward the fence.

Provenience Group 35. Upper Midden West of the Lower Foundation - This midden is generally just the midden materials that overlie those just described. The Mean Ceramic Date is 1823.5 (Figure 25) and, other than vertical position, there is no apparent depositional difference between these materials and those at the bottom of the midden deposits. It may be repeated that the vertical separation between these proveniences and those assigned to the previous group is arbitrary, rather than based on clearly defined stratigraphic differences.

Provenience Group 36. Fence Line West of Lower Foundation - These proveniences were rather more disturbed than the adjacent horizontal midden deposits, and some more modern artifacts were observed among them although the Mean Ceramic Date, 1823.7 (Figure 26) was almost identical to the previous midden grouping. The overlapping postholes and less precisely defined areas of disturbance suggest that the fence was repaired and replaced, probably several times, and soil bearing the midden was simply disturbed and reworked at the fence line.

Provenience Group 32. Cinders Midden West of Upper Foundation - These horizons contained concentrations of very red cinders, slag, and burned metal as well as burned and unburned artifacts. It is possible that the cinders and slag originated from the operation of a small forge in or adjacent to the building that stood on the upper foundation, since the fire waste appears to have been burned somewhat more intensely and at a hotter temperature than is normally observed for stove waste. This is just speculation, however. The remainder of the contents of this midden include "normal" household items, ceramics, glass, etc., and the Mean Ceramic Date for the deposit is 1830.7 (Figure 27), which makes it the most recent of the midden deposits.

Provenience Group 38. Unscreened Fill and Surface - These materials were collected in a non-systematic way from the surface of the site. The Mean Ceramic Date calculated for this collection is 1832.2 (Figure 28), although this is not particularly meaningful, given the nature of the collection. This "grab sample" of materials does not represent any consistent depositional or functional provenience category. For this reason comparisons with this provenience group are not considered in the discussion of intra-site patterning later in this chapter.

Provenience Group 33. Lower Structure Interior - Only a relatively small amount of artifacts could be confidently assigned to a provenience that was securely identified as a "floor level" for this structure, as separate from the overlying fill horizons. The Mean Ceramic Date for these materials is 1840.1 (Figure 29), which is noticeably later than the other provenience groupings. It is tempting to suggest that this provenience group dates from the destruction of the structure, which is presumed to be the barn (by fire?). The 1852 tax assessment workbook indicates that a barn is still present on the lot, however, so the materials in this group may represent a use assemblage. Alternatively, the Mean Ceramic Date may be in error, as mentioned previously.

Figure 25

# RISEING SON TAVERN (7NC-E-65): Provenience Group 35, Upper Midden West of Lower Foundation

Fi = 1007, Mean Ceramic Date, 1823.5,  
Provenience Group 35

Terminus  
Post Quem  
1820

69

**LEGEND**

↑ ↓ } Visually Interpreted Occupation  
Period Brackets, South 1977

||||| } Mean Ceramic Date, South 1972  
& 1977

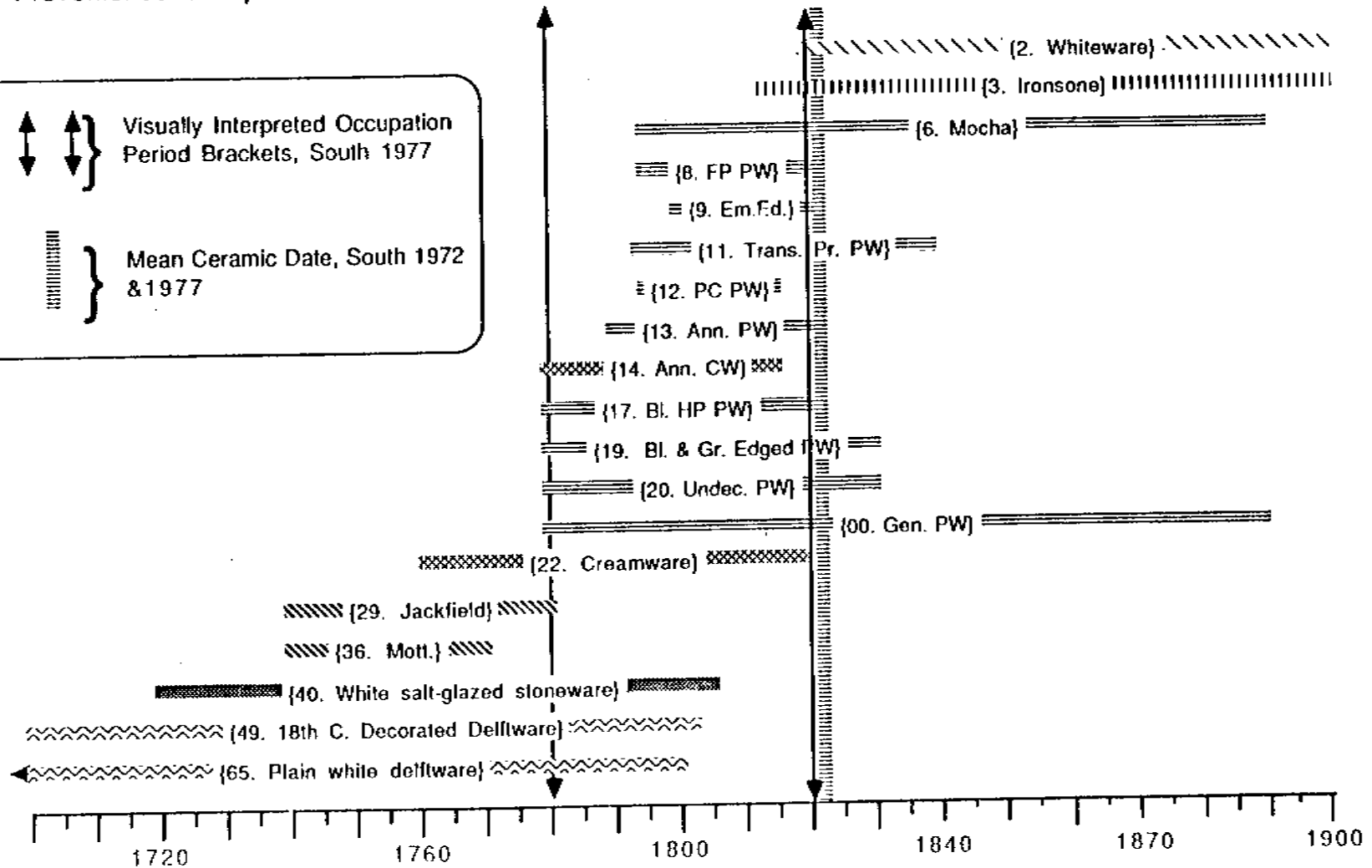


Figure 26

# RISEING SON TAVERN (7NC-E-65): Provenience Group 36, Fence Line

Fi = 90, Mean Ceramic Date, 1823.7,  
Provenience Group 36

67

**LEGEND**

- ↑ ↓ } Visually Interpreted Occupation Period Brackets, South 1977
- ||||| } Mean Ceramic Date, South 1972 & 1977

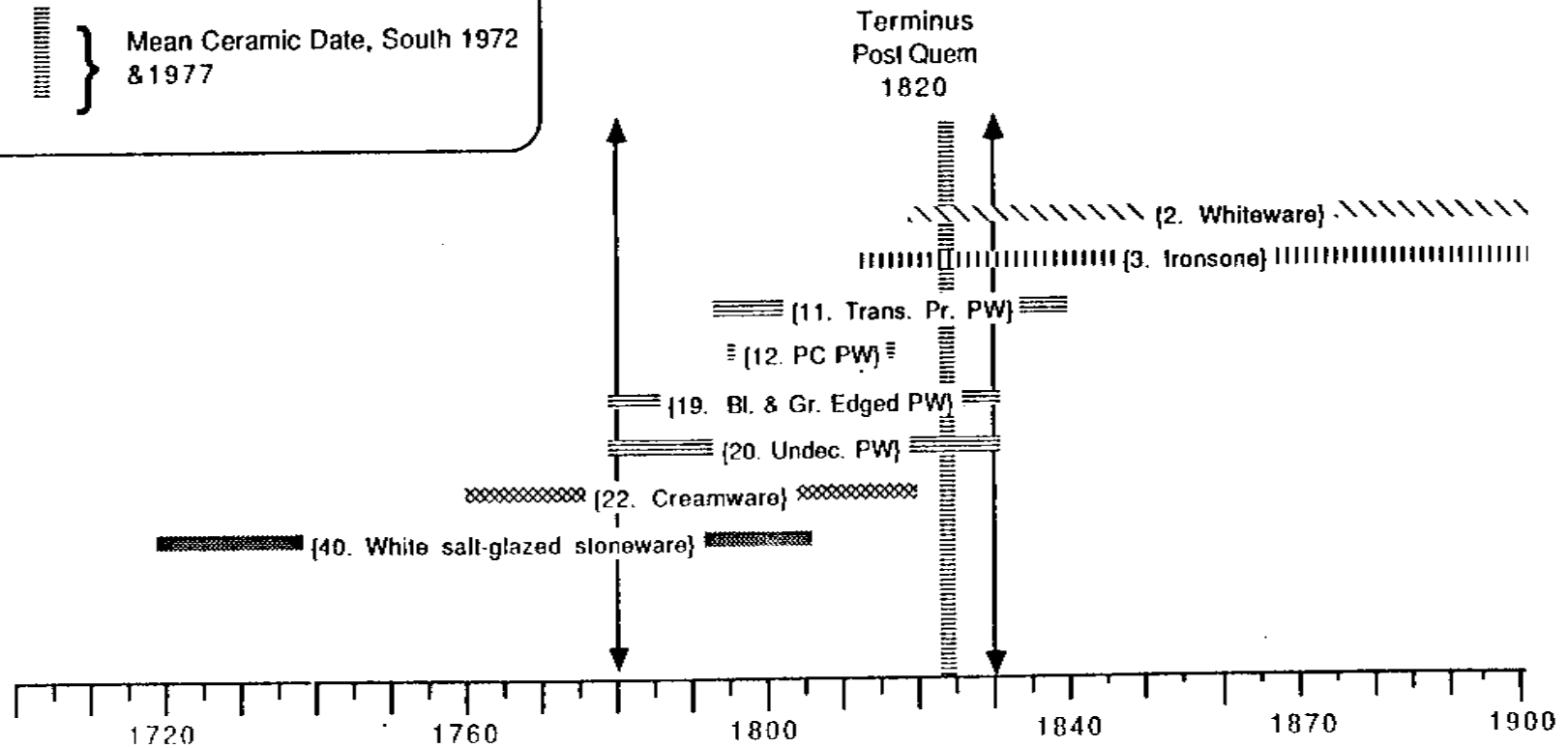


Figure 27

# RISEING SON TAVERN (7NC-E-65): Provenience Group 32, Cinders Midden West of Upper Foundation

Fi = 119, Mean Ceramic Date, 1830.7,  
Provenience Group 32

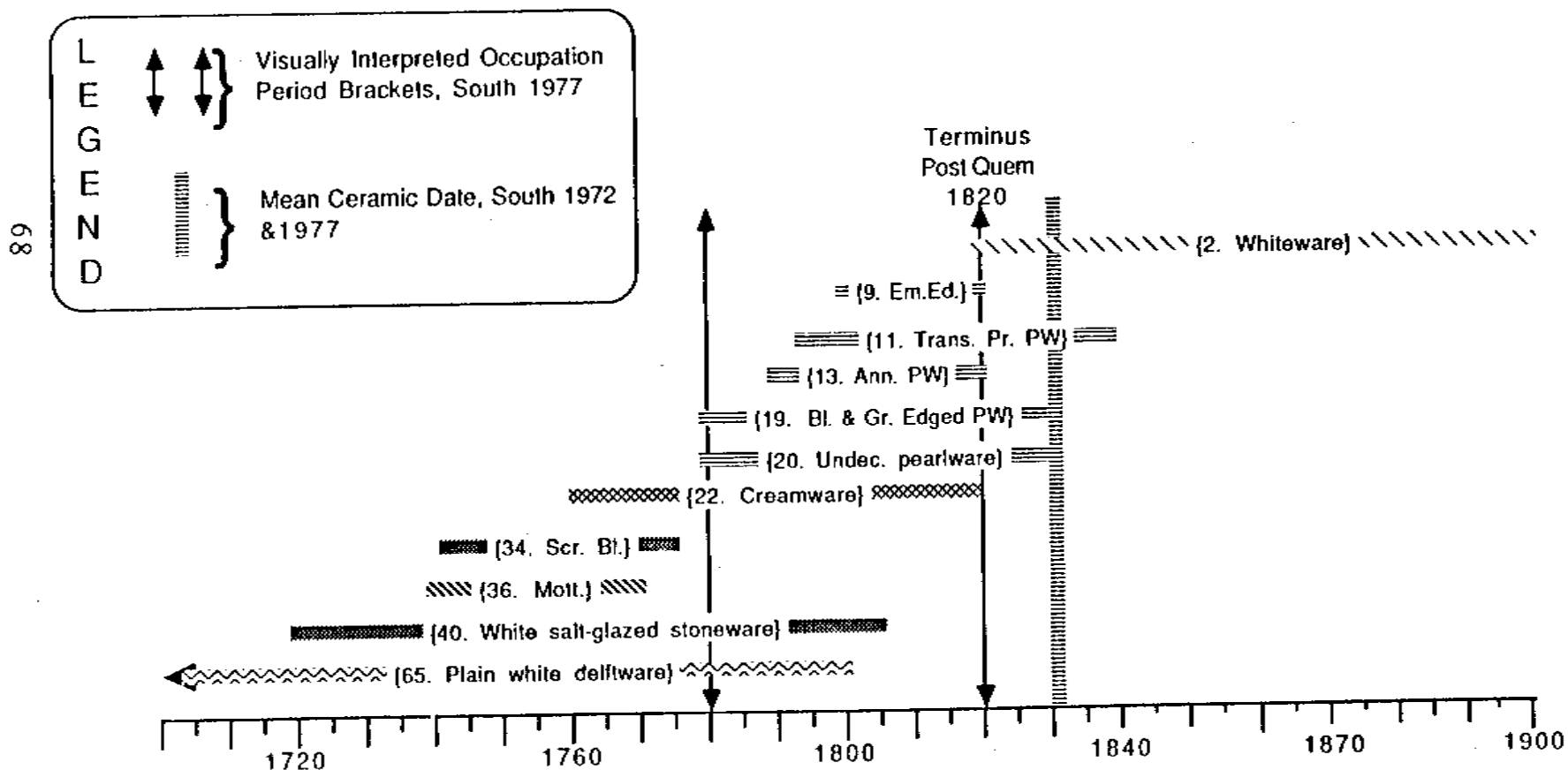


Figure 28

# RISEING SON TAVERN (7NC-E-65): Provenience Group 38, Unscreened Fill and Surface Collection

Fi = 57, Mean Ceramic Date, 1832.2,  
Provenience Group 38

69

**LEGEND**

- ↑ ↓ } Visually Interpreted Occupation Period Brackets, South 1977
- ||||| } Mean Ceramic Date, South 1972 & 1977

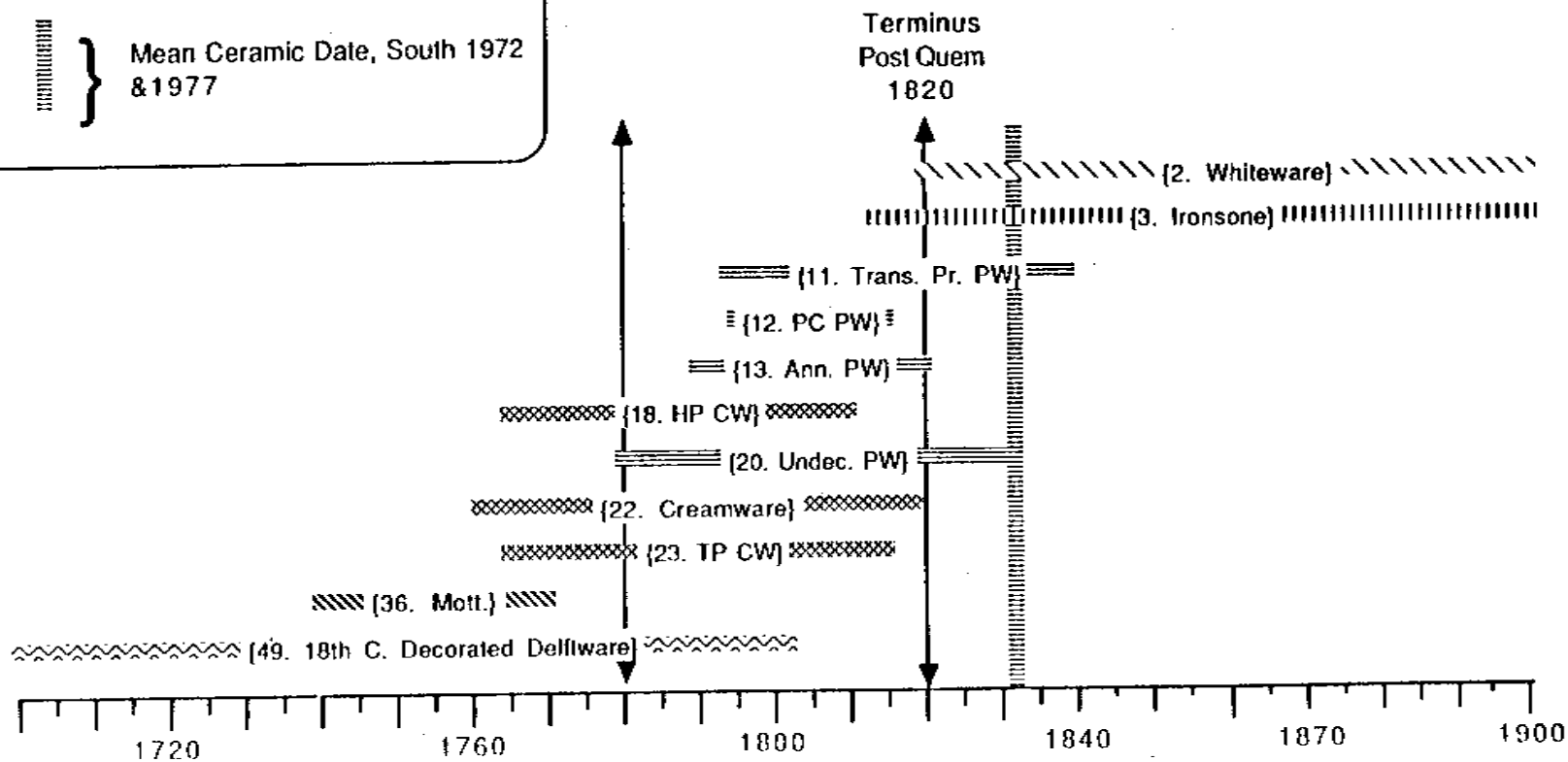
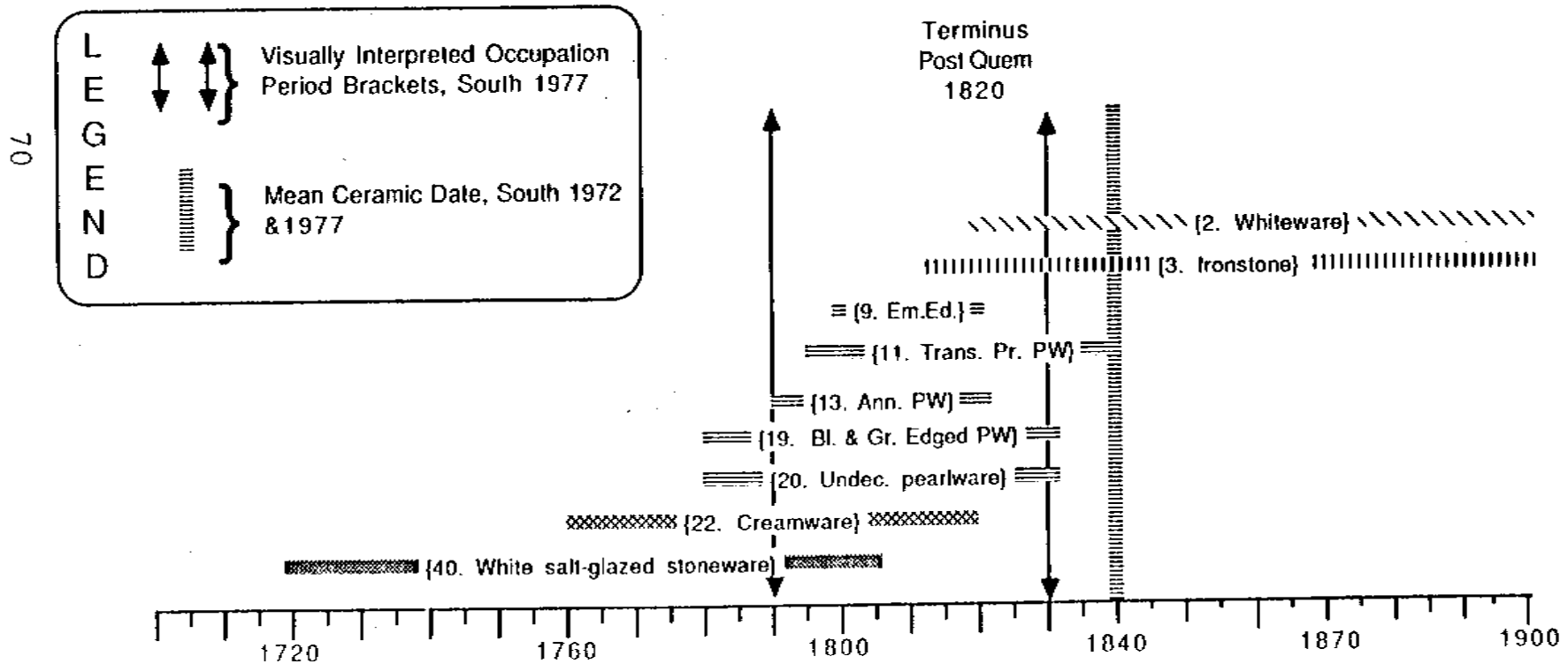


Figure 29

# RISEING SON TAVERN (7NC-E-65): Provenience Group 33, Lower Structure Interior

Fi = 65, Mean Ceramic Date, 1840.1,  
Provenience Group 33





Summary - The dating information for all the provenience groups is summarized in Figure 30, and it can be seen that Feature 99 represents a late eighteenth century provenience, while the remainder of the contexts cover the first two quarters of the nineteenth century, judging from their Mean Ceramic Dates. For some of the subsequent analysis the provenience groups were further grouped into "eighteenth century", Feature 99, and "nineteenth century" including the remainder of the in-situ proveniences. Several other kinds of analysis were completed using these groupings in various ways, synthesizing the results of the artifact analysis.

## **Synthetic Analysis:**

### **Intrasite**

This section describes the analysis of the assemblages from the provenience groups described above and provides a comparison between those groups. Because the space on the lot had been used in different ways, differences in assemblages from different parts of the site might be expected.

Functional Analysis: Intrasite - Procedures for the examination of functional groups of artifacts have been developed for historic sites using a system of increasingly generalized groupings of artifacts, following a model based on ceramics which proceeds from "type" through "ware" and "class" to "group" (South 1977:92-93). The assignment of more refined subdivisions of the system to the nine categories at the "group" level is often somewhat arbitrary; for example the assignment of "bone fragments" to the "Bone" group seems fairly obvious, but the "Tobacco Pipe group" contains only ball clay (kaolin) pipes, while "Stub-stemmed Pipes" appear in the "Activities group". The assignments are based on South's perception of what is "useful" (South 1977:92) based on his experience mainly with colonial period sites. His analysis produced a range of distributions of the proportions of the various artifact groups that was sufficiently regular that he defined as the "Carolina Artifact Pattern". In general, eighteenth century domestic sites will approximate this pattern, based on a variety of subsequent studies. Other kinds of sites sometimes vary in regular ways from this pattern, producing their own kinds of patterns such as the "Frontier Artifact pattern" (South 1977). As is the case with the Mean Ceramic Date, the statistical rationale for the functional group pattern analysis is not always very solid, but the analysis seems to be justified by the empirical results, and is widely used.

The distribution of items into the various groups becomes even more problematical with nineteenth century materials because of the greater range and versatility of industrial manufacturing processes for consumer goods. An example of this range of production for items made of metal is illustrated in Plate 11. However, since a number of studies are available for comparison, this breakdown has been applied to the data for the various provenience groups at the tavern site. Before comparing the results with other sites, comparisons were made between the group subdivisions of the site internally, to see if functional differences between use areas or depositional contexts could be discerned. The percentage distributions for the artifacts from each provenience group are given for South's Functional Group categories are given in Table 2, along with the predicted range of variation for the

Figure 30

# RISEING SON TAVERN (7NC-E-65): All Provenience Groups, Bracket Date Summary

In Order by Mean Ceramic Date

Mean Ceramic Date, South 1972 & 1977

PROV. GROUP. { 1780 [PG 31] 1820 } 1812.9

Visually Interpreted Occupation Period Brackets, South 1977

72

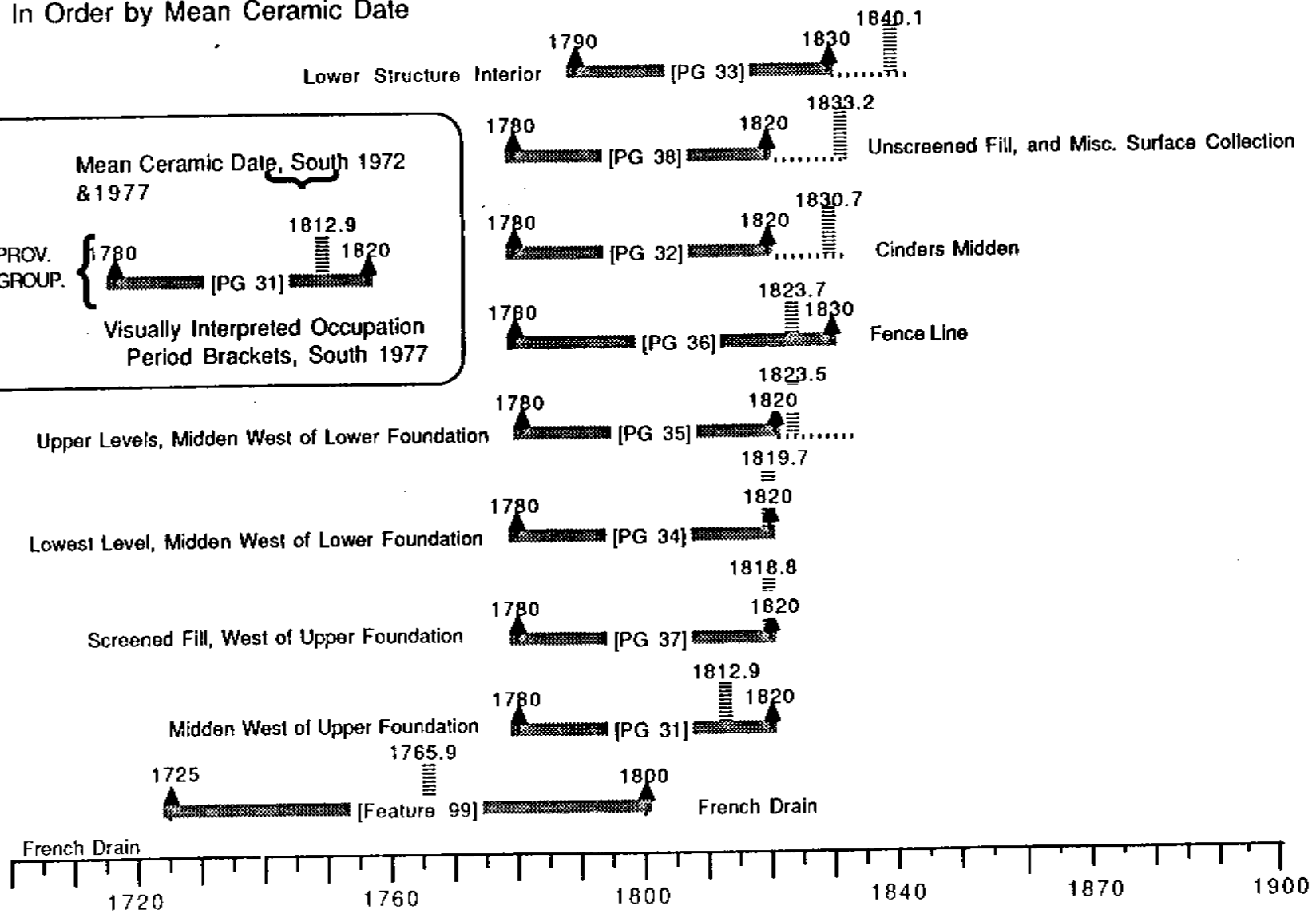


Plate II: Metal Artifacts

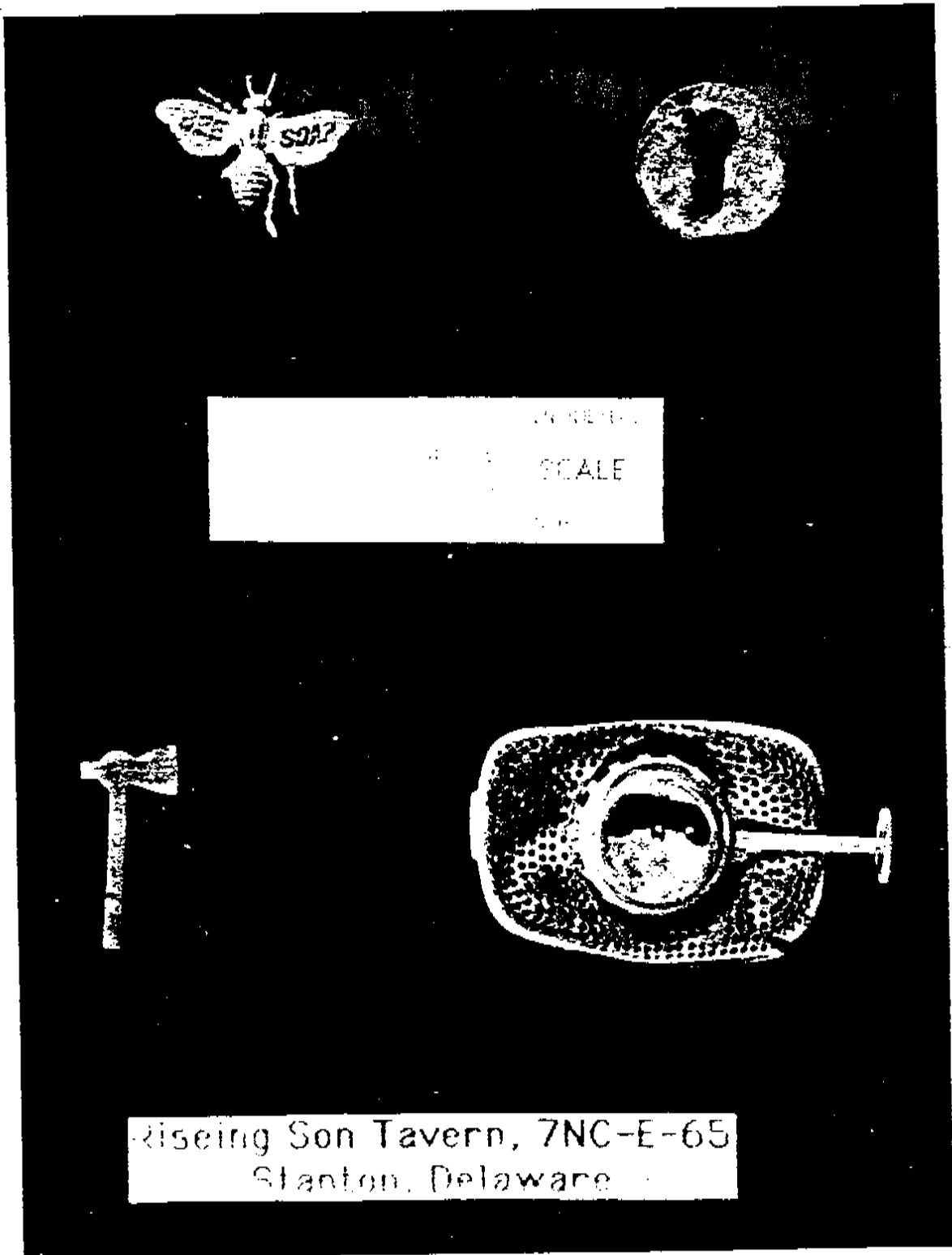


Table 2: Riseing Son Tavern, South's Functional Groups, Intrasite

Provenience Group	No	MCD	N[MCD]	Kitchen	Architect.	Furniture	Arms	Clothing	Personal	Pipes	Activities	Total
Midden, West of Upper Foundation	31	1812.9	180	Count 472 % 68.31%	154 22.29%	0 0.00%	1 0.14%	2 0.29%	1 0.14%	4 0.58%	57 8.25%	691 100.00%
Cinders Midden	32	1830.7	119	Count 583 % 57.21%	306 30.03%	11 1.08%	3 0.29%	1 0.10%	1 0.10%	4 0.39%	110 10.79%	1019 100.00%
Lower Structure Interior	33	1840.1	65	Count 454 % 30.09%	912 60.44%	1 0.07%	0 0.00%	5 0.33%	0 0.00%	0 0.00%	137 9.08%	1509 100.00%
Lowest Level, Midden West of Lower Found.	34	1819.7	447	Count 1021 % 82.74%	136 11.02%	0 0.00%	0 0.00%	1 0.08%	0 0.00%	9 0.73%	67 5.43%	1234 100.00%
Upper Levels, Midden West of Lower Found.	35	1823.5	1007	Count 2822 % 70.48%	734 18.33%	3 0.07%	4 0.10%	5 0.12%	7 0.17%	35 0.87%	394 9.84%	4004 100.00%
Fence Line	36	1823.7	90	Count 305 % 69.79%	49 11.21%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	4 0.92%	79 18.08%	437 100.00%
Screened Fill, West of Upper Foundation	37	1819	190	Count 554 % 47.72%	502 43.24%	3 0.26%	5 0.43%	3 0.26%	2 0.17%	11 0.95%	81 6.98%	1161 100.00%
Nineteenth Century Total		1822	2098	Count 6211 % 61.77%	2793 27.78%	18 0.18%	13 0.13%	17 0.17%	11 0.11%	67 0.67%	925 9.20%	10,055 100.00%
French Drain, Fea. 99	99	1765.9	367	Count 998 % 73.87%	271 20.06%	0 0.00%	0 0.00%	7 0.52%	0 0.00%	46 3.40%	29 2.15%	1351 100.00%
Eighteenth Cent. Total				Count 7209 % 63.20%	3064 26.86%	18 0.16%	13 0.11%	24 0.21%	11 0.10%	113 0.99%	954 8.36%	11406 100.00%
Unscreened Fill	38	1832	57	Count 230 % 69.91%	41 12.46%	0 0.00%	1 0.30%	0 0.00%	3 0.91%	13 3.95%	41 12.46%	329 100.00%
Carolina Pattern				Mean 63.1%	25.5%	0.2%	0.5%	3.0%	0.2%	5.8%	1.7%	
				Range 47.5% to 78.0%	12.9% to 35.1%	0.0% to 0.7%	0.0% to 1.5%	0.0% to 8.5%	0.0% to 0.6%	0.0% to 20.8%	0.1% to 3.7%	
Architectural (Frontier) Pattern				Mean 27.6%	52.0%	0.2%	5.4%	1.7%	0.2%	9.1%	3.7%	
				Range 10.2% to 45.0%	29.7% to 7430.0%	0.0% to 0.5%	0.0% to 15.6%	0.0% to 6.9%	0.0% to 0.7%	0.0% to 27.1%	0.0% to 11.8%	

next site beyond those included in South's original calculations, and the mean value for the sites included in his original analysis for the Carolina Pattern and for the Frontier Pattern (South 1977). As may be seen, the values for the individual Provenience Groups generally fall within South's predicted range of values for the Carolina Pattern, although there are some exceptions. The most notable variation from the pattern occur in the "Activities Group" where the percentage values for the Provenience Groups vary between 5.43% (Provenience Group 34) and 18.08% (Provenience Group 36), consistently above the 3.7% maximum value predicted for the next Carolina Pattern Site (South 1977:119). The fact that the remaining values are not much displaced from the overall pattern is probably accounted for by the consistently low percentages of tobacco pipe, a somewhat surprising characteristic for assemblages from a tavern.

Provenience Group 33, Lower Structure Interior, shows an unusually high percentage of architectural items (60.44%) in comparison to the Carolina Pattern, and the percentage of the kitchen artifacts (30.09%) is lower, by what appears to be a roughly reciprocal amount. It is very likely that the increased proportion of architectural items from the barn floor has resulted from the destruction of that building, probably by fire. The increased proportion of architectural items from structure interiors has been noted by South, and has resulted in the re-naming of the "Frontier Pattern" as the "Architectural Pattern" (South 1979: 224). In the case of Provenience group 33, if the destruction of the wooden portions of the structure was unintentional, as indicated by the charred wooden remains, then the majority of the nails and other hardware would have fallen to the floor, rather than being salvaged or removed when the structure was dismantled. The reverse relationship between architectural and kitchen materials appears in Provenience Group 34, the lowest midden levels from west of the lower foundation. Here the Kitchen Group makes up 82.74% of the collection, higher than South's predicted range, and the architectural debris is only 11.02%. This may be because neither building nor destruction of buildings was taking place on the site while this midden horizon was being deposited. The remainder of the values for the individual provenience groups do not depart greatly from South's range.

South has observed that assemblages will vary in size and content according to their position within a site (South 1979: 218). Yard maintenance -- sweeping, etc. -- may concentrate materials toward fence lines, and this may account for the increase in thickness in the midden in the direction of the fence line west of the lower structure. South also provides a classification of artifact "Disposal Modes" and their relationships to refuse types, sizes, and conditions (South 1979: 221), and he and Tordoff (1979) recognize that the source and depositional character of particular intrasite context will affect the distribution of the functional groups. Neither offers observations, however, on how the general pattern of South's functional types might be affected by these variables, except in specific, ad-hoc cases (and, other than the re-interpretation of the "Architecture Pattern", mentioned above). With no basis for predicting specifically what similarities and differences might be found between the defined provenience groups at the Hotel Lot, we did attempt to identify such similarities.

The Robinson Coefficient of Agreement, mentioned in connection with Rockman and Rothschild's (1984) study provides a convenient way to compare the provenience groups:

$$SR_{ij} = 200 - \sum_{k=1}^n |P_{ik} - P_{jk}|$$

To obtain the Coefficient (SR<sub>ij</sub>), the absolute differences between the percentages (P) of each of *k* attributes in assemblages *i* and *j* are summed, and that sum is subtracted from 200. The latter value represents the maximum possible agreement between the two assemblages, a situation where the total proportion of all attributes *k* in each assemblages is 100% (Doran and Hodson 1975:139). The assemblages can be compared only one with one other, and hence the comparisons are referred to as "pair-wise".

Table 3  
Robinson Coefficient: Order of Similarity for South's Function Groups

Prov. Group	SR <sub>ij</sub>	Prov. Group	Rank	Prov. Group	SR <sub>ij</sub>	Prov. Group	Rank
PG31	191.63	PG35	1	PG34	175.76	PG35	8
PG36	189.08	PG37	2	PG34	175.70	PG99	9
PG35	184.22	PG99	3	PG34	173.95	PG36	10
PG35	183.49	PG36	4	PG32	172.33	PG35	11
PG31	182.96	PG99	5	PG32	171.78	PG37	12
PG31	176.97	PG32	6	PG31	171.03	PG34	13
PG31	176.92	PG36	7	PG36	168.14	PG99	14
PG33	161.43	PG37	15	PG32	138.76	PG33	22
PG32	159.93	PG99	16	PG34	130.12	PG37	23
PG32	159.36	PG36	17	PG33	121.91	PG31	24
PG31	156.18	PG37	18	PG33	115.40	PG35	25
PG35	148.62	PG37	19	PG33	105.25	PG99	26
PG32	148.39	PG34	20	PG33	100.76	PG36	27
PG37	142.43	PG99	21	PG33	93.24	PG34	28

The measure was calculated for each pair-wise comparison between the groups and the comparisons are shown in Table 3, arranged in rank order from highest to lowest. The expectation is that assemblages that result from the same kinds of functional activity sets will have similar percentage distributions of functional artifact groups<sup>4</sup>, and therefore higher values of the coefficient. The highest value achieved by the measure is 191.63 for the comparison between the midden deposits west of the upper foundation (Provenience Group 31) and those from the lowest midden levels west of the lower foundation (Provenience Group 35). Each of these provenience groups appears four times in the the ten highest-valued

comparisons, suggesting the "representative" quality of the midden deposits. The values are in general quite high, with 18 out of 28 comparisons above 150. Provenience Group 33 appears in comparisons with lower scores, and the high proportion of architectural items (and the corresponding low value for the kitchen artifacts) mentioned above accounts for this.

These results confirm the expectation that materials that come from contexts with similar functional origins (in this case, middens) will have high values for the comparison statistic, while different context functions (midden vs. building floor) will exhibit low values.

Ceramic Value Analysis: Intrasite - Another measure that we have used in the past to compare ceramic assemblages is the Tau statistic (e.g. Thompson 1984). One important reason for using this measure is that it allows comparisons between samples that are not randomly drawn, and is therefore not limited to situations where the statistical rules of sampling have been strictly followed. In practice, these rules are rarely followed strictly in archaeological excavation anyway and many statistical analyses that are supposed to depend upon the assumption that samples are random, as well as other assumptions, are in fact robust when applied to archaeological data. A correlation measure such as Tau, that is more consistent with the real nature of the archaeological data, is more reliable in relationship to that data, and if it provides a useful analysis this is an important characteristic. It also provides less general or extensible results, however, since the numerical value of a correlation between two data sets, is not necessarily equivalent to the numerical value of a correlation between two different data sets, and this is a serious limitation in this measure. Lengthy discussions of these issues are included in almost every book on the use of statistics in the social sciences, and particular reference has been made to Thomas' text Figuring Anthropology (1976) for this analysis.

To complete the calculations the ceramics are divided up into ware groups and decorative types and put into percentage order. Each type is then assigned a rank number from highest to lowest percentage value, and these rank orders are compared by the statistical calculation:

$$\text{Tau} = \frac{4\sum C_i - n(n-1)}{\sqrt{[n(n-1) - T_x][n(n-1) - T_y]}}$$

The statistical rationale for the details of the calculation is somewhat complicated, and reference should be made to Thomas (1976) for a more complete discussion. The terms of the equation may be defined as follows: "Tau" is the value of the statistic obtained by completing the calculation indicated by the terms on the right side of the equal sign. Those terms may be grouped into the numerator and the denominator of the fraction indicated. The terms in the numerator include the constant "4",  $\sum C_i$ , which is the sum of the counts of the differences in rank order between two assemblages for each ranked variable, and "n", which is the number of attributes ranked for each assemblage. The attributes must be the same for each of the two assemblages compared, while the rank order of the attributes may differ, and

it is indeed that difference that the statistic measures. In the denominator, the only new terms (other than the square root calculation) are "Tx" and "Ty". These are calculated correction factors for ties in the rankings of attributes in the "x assemblage" and the "y assemblage".

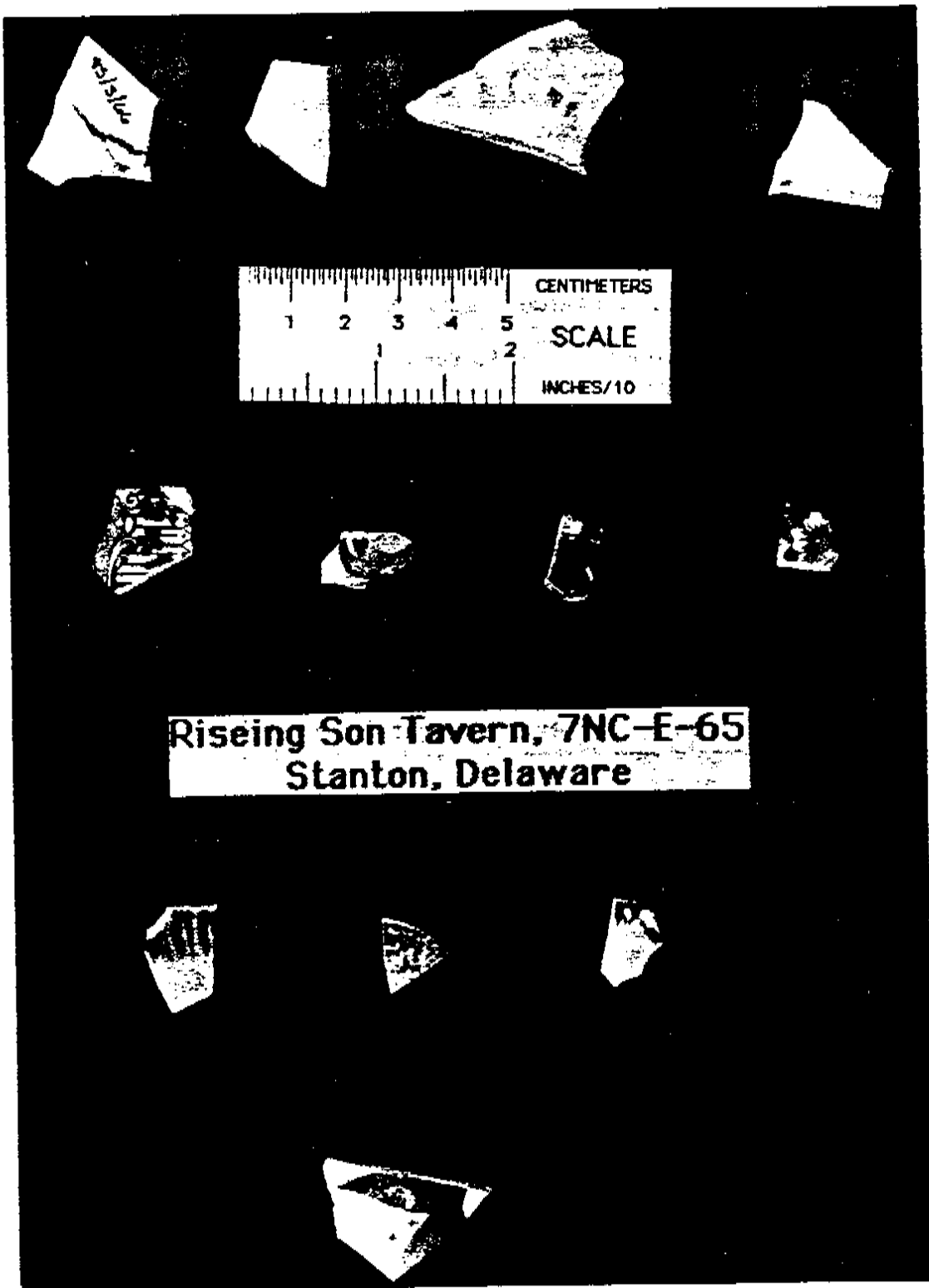
If the computation of Tau is cumbersome, the interpretation of the result is relatively straight-forward. The value of the statistic varies between +1 and -1. The former value indicates identical ordering of ranked variables. For example, if the percentages of ceramic types in assemblage X are placed in order by size of percentage, as Type 1 = 60%, Type 2 = 30%, Type 3 = 6%, and Type 4 = 4%, and if the same four types occur in assemblage Y in the same order, by size, Type 1 = 75%, Type 2 = 15%, Type 3 = 7%, and Type 4 = 3%, then a Tau comparison between assemblage X and assemblage Y will yield the value "+1", indicating that the ordering of the types is identical (note that the percentages don't have to be the same, only the rank order). If, on the other hand, the rank order of the types is exactly reversed, then the value of the statistic will be "-1": Assemblage X has Type 1 = 60%, Type 2 = 30%, Type 3 = 6%, and Type 4 = 4%, and Assemblage Y has Type 1 = 3%, Type 2 = 7%, Type 3 = 15%, and Type 4 = 75%. A Tau value of zero indicates no association between the rank orders of the two assemblages. As is the case with the Robinson Coefficient, only two assemblages at a time can be compared.

The analysis is based on two assumptions. First, consumers will select the amounts of particular kinds of ceramics on the basis of their functional needs. An "average" household will have certain basic food processing and consuming activities regardless of income. Food must be procured, cooked, and served, and, if sufficient surplus is available -- sometimes related to income -- it may be stored. The functional characteristics of the household will affect the distributions of the functionally defined types. For example, rural households which process more foodstuffs from completely raw materials may possess a larger proportion of vessels devoted to initial storage and processing -- butter churns, milk pans, etc. -- than do urban households. Household composition will affect the distributions also. If an extended family is present or if there are servants supplied with different food consumption wares or hand-me-downs, then the distribution will be affected (Otto 1975).

The second assumption is that the distribution of different decorative types across these functional activities will vary with several social and economic conditions, including income. One of the conclusions of Miller's (1980) analysis of the wholesale price lists for the "Refined White Earthenwares" is that, although the prices for the major decorative groupings change, the rank order of the cost of each group remains the same for the same vessel forms; that is, *Transfer Print* is always more expensive than *Hand Painted*, which in turn is always more expensive than *Minimally Decorated*, and finally, "Plain" or *CC Ware* (Plate 12) is always the least expensive, allowing it to function as the base value for whole vessels of the same kind in the face of changes in the currency, exchange rates, etc. Real income will likely influence the tendency to acquire more costly items, but access to certain materials will also be influenced by their availability, which, in turn, will be affected by the geographic position of the consumer in the market.



Plate 12: Refined White Earthenwares



Riseing Son Tavern, 7NC-E-65  
Stanton, Delaware

**Table 4**  
**Ceramic Decorative Types: Percent & Rank Order, Intrasite**

Provenience Groups		PG31		PG37		PG34		PG35	
Decorative Types	Code	Rank	%	Rank	%	Rank	%	Rank	%
Porcelain	1	7.5	2.87%	3	5.90%	9	0.77%	7	2.55%
RefRedWare	21	6	4.58%	7	1.55%	8	1.03%	8	2.50%
RefStWare	22	7.5	2.87%	5	2.48%	10	0.26%	10	1.15%
TransRwes	4	4	5.16%	6	2.17%	3	12.58%	3	8.75%
HPRwes	5	5	4.87%	4	3.73%	5	3.08%	9	1.67%
MinDecRwes	6	9	2.58%	9.5	0.62%	4	6.93%	4	4.69%
UndecRwes	7	1	41.83%	1	41.30%	2	34.15%	1	37.01%
Yellowware	11	10	0.00%	9.5	0.62%	7	1.28%	5	3.64%
CoarseSIWare	12	3	5.73%	8	0.93%	6	2.31%	6	2.71%
CoarseEWare	13	2	29.51%	2	40.68%	1	37.61%	2	35.35%
<b>-Totals</b>		<b>n=349</b>	<b>100.00%</b>	<b>n=322</b>	<b>100.00%</b>	<b>n=779</b>	<b>100.00%</b>	<b>n=1921</b>	<b>100.00%</b>
<b>Mean Ceramic Date</b>		<b>1812.9</b>		<b>1818.8</b>		<b>1819.7</b>		<b>1823.5</b>	

∞

Provenience Groups		PG36		PG32		PG38		PG33	
Decorative Types	Code	Rank	%	Rank	%	Rank	%	Rank33	%
Porcelain	1	8	1.46%	4	3.75%	4	8.39%	4.5	5.95%
RefRedWare	21	9.5	0.98%	8	0.54%	9	0.70%	8.5	1.19%
RefSIWare	22	9.5	0.98%	7	1.34%	5	4.20%	7	2.38%
TransRwes	4	3	13.66%	6	2.41%	3	10.49%	2	16.67%
HPRwes	5	7	1.95%	9.5	0.00%	6	2.80%	6	3.57%
MinDecRwes	6	4	6.83%	3	4.29%	7.5	2.10%	10	0.00%
UndecRwes	7	1	44.88%	2	25.47%	2	24.48%	1	50.00%
Yellowware	11	5	2.93%	9.5	0.00%	10	0.00%	8.5	1.19%
CoarseSIWare	12	6	2.44%	5	2.95%	7.5	2.10%	4.5	5.95%
CoarseEWare	13	2	23.90%	1	59.25%	1	44.76%	3	13.10%
<b>-Totals</b>		<b>n=205</b>	<b>100.00%</b>	<b>n=373</b>	<b>100.00%</b>	<b>n=147</b>	<b>100.00%</b>	<b>n=84</b>	<b>100.00%</b>
<b>Mean Ceramic Date</b>		<b>1823.7</b>		<b>1830.7</b>		<b>1832.2</b>		<b>1840.1</b>	

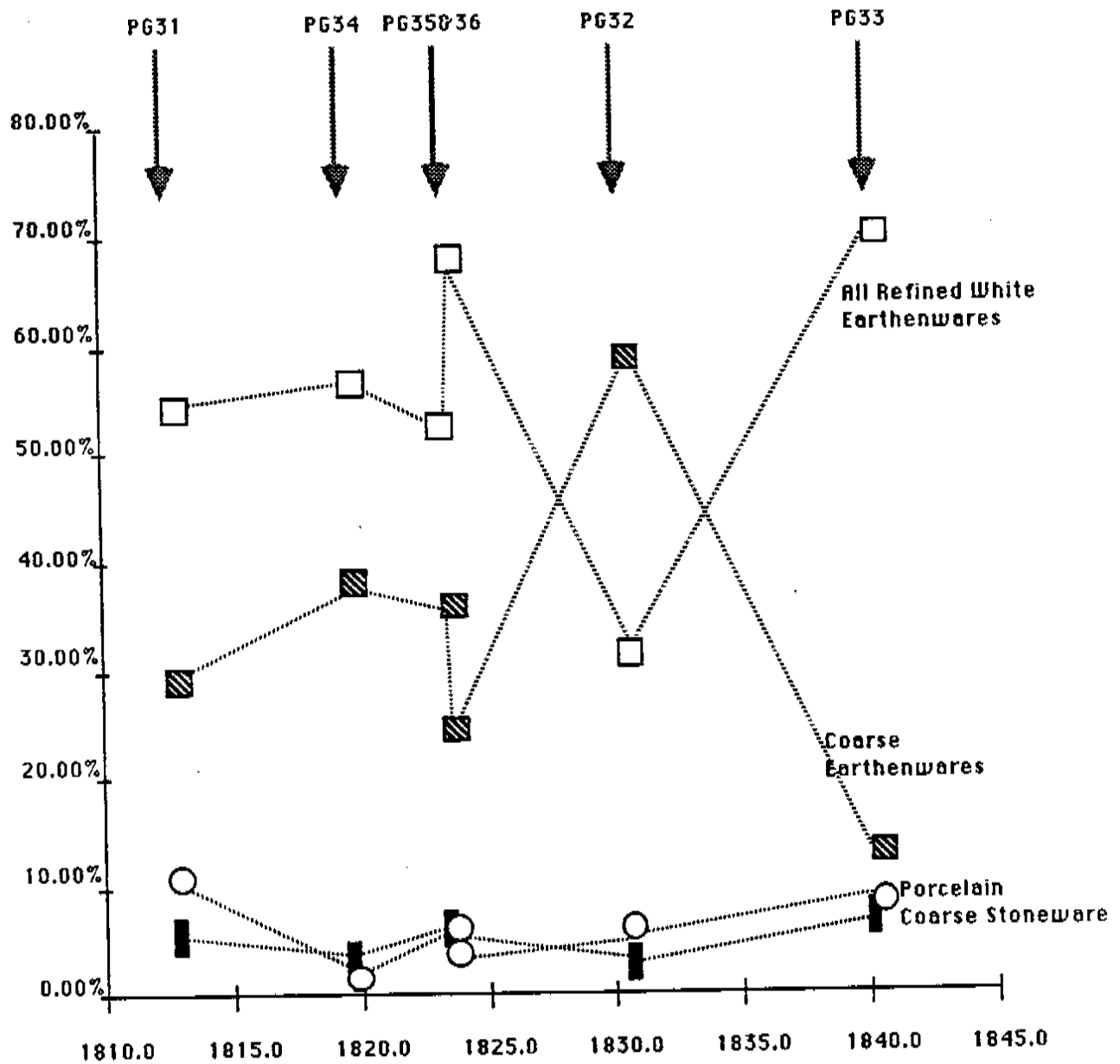
In addition to Refined White Earthenwares ordered by documentary data, we have assumed that the relative costs of certain other groups of ceramics, such as coarse earthenwares, coarse stonewares, procelain, etc. have also been fairly consistent, though we lack the same kind of specific, documented cost relationships. We originally hypothesized that the income level of the site inhabitants would determine the ordering of the types, and that, while the percentages of each type might fluctuate somewhat, the ordering would remain relatively stable for a particular income group. The importance of site-functional characteristics has become more evident as the use of the measure is extended. Whatever the interpretations, the measure does detect similarities (and differences) between the ceramic assemblages. The rank orders of the ceramic types for the tavern lot provenience groupings are given in Table 4, and the Tau values for the comparisons between Provenience Groups in Table 5 (Feature 99 is not included in this analysis, which is designed to deal with 19th century assemblages). In general, the values of Tau are not particularly high for these comparisons. Only seven of the 21 pairwise comparisons achieve values above .5, so the values are low when compared to inter-site comparisons where eighteen of the 20 pairwise comparisons achieve values above .5 (Table 12). Thus, there is more variation within the different parts of this site than there is between this site as a whole and the sites compared in this study.

Table 5  
Intrasite Tau Comparisons

Provenience Groups	31	32	33	34	35	36	37
32	0.341						
33	0.529	0.345					
34	0.517	0.382	0.341				
35	0.382	0.517	0.386	0.689			
36	0.432	0.432	0.391	0.742	0.876		
37	0.477	0.295	0.621	0.157	0.112	0.114	
38	0.494	0.542	0.595	0.396	0.303	0.024	0.542

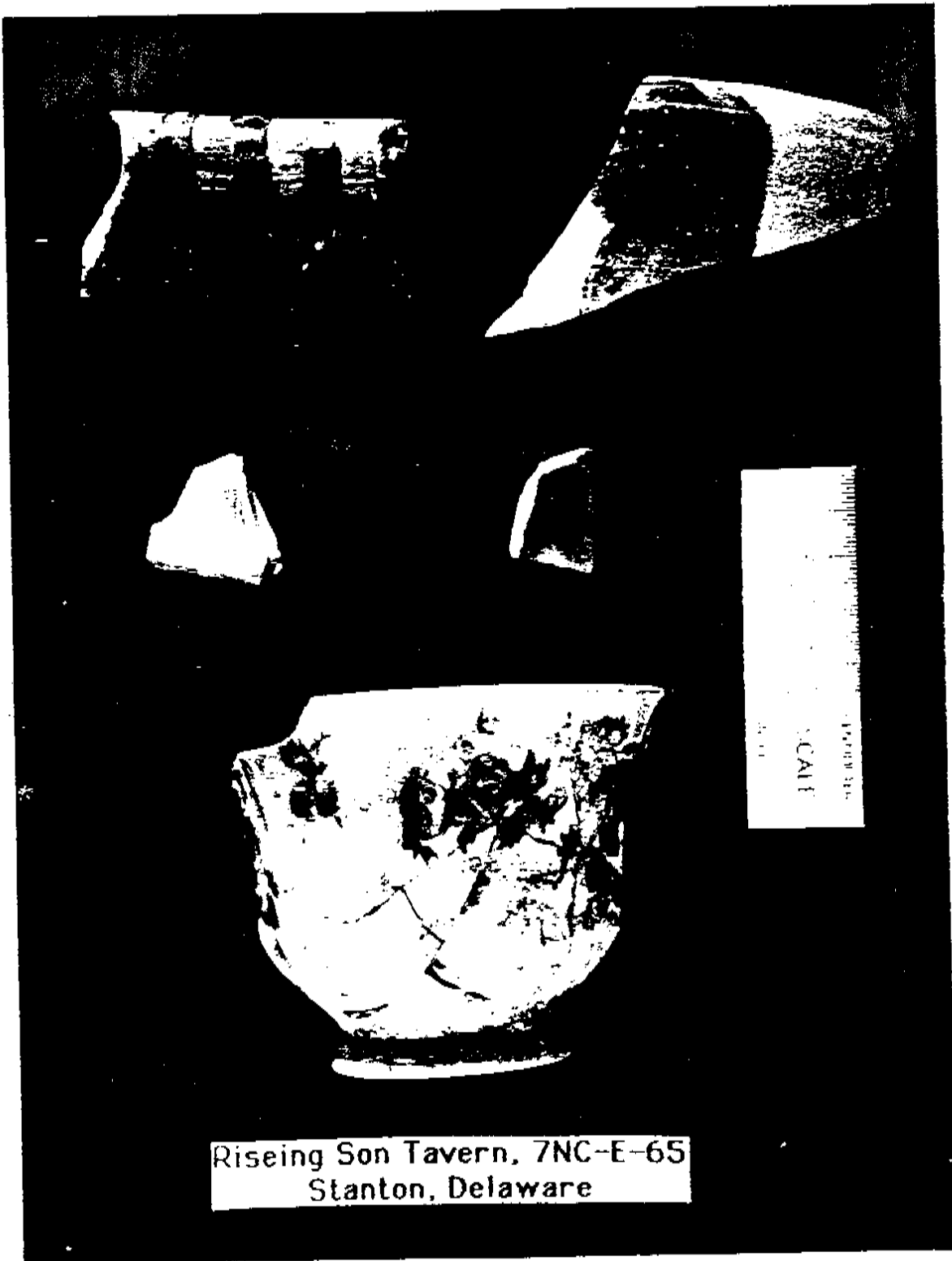
The possibility that differences in the distribution of specifically functional characteristics of the *ceramic* assemblages from the different provenience groups (Plate 13) was generating the dissimilarities between groups was considered, but an examination of the data did not seem to support this. Figure 31 shows the percentage relationships between the decorative types when they are grouped by functional ware-type, in temporal sequence by Mean Ceramic Date. Provenience Groups 37 and 38 are excluded from consideration since the former is a mixed fill context and the latter is a "grab sample" representing no particular time period or use context. Provenience Group 36, the Fence Line context, has been included, although it is likely to have been somewhat mixed, or disturbed by fence repair and replacement (it is very close in date to Provenience Group 35, the upper levels of the midden west of the Lower Foundation, and for most ceramic types the percentages for these two contexts are close together). The "Porcelain, etc." group includes porcelain plus refined redwares and refined stonewares. These materials were most commonly

**Figure 31**  
**Riseing Son Tavern: Percent Ceramics by Functional Group**



[The dotted lines connecting the data points represent directional trends for each type, rather than implying continuous variation.]

Plate 13



used for tea and coffee service, while the Refined White Earthenwares, including Pearlware, Creamware and Whiteware, generally were from vessels intended for more "everyday" table use. The Refined White Earthenwares (abbreviated "RWEs" in the tables) were also used for some food preparation and chamber wares, gradually taking over most of the functions performed by the other functional ware types as the Nineteenth Century drew to a close<sup>5</sup>. In the nineteenth century, Coarse Earthenwares, mostly the ubiquitous "Redware", were usually from more utilitarian vessels used for food preparation and processing, and for storage of materials that were not adversely affected by the porous nature of the ceramic fabric. The Coarse Stoneware, which includes the Yellowwares for this tabulation, were also utilitarian and were particularly useful for the storage of liquids or liquid preserved foods such as pickles since they were not porous<sup>6</sup>. They were generally more expensive than the Coarse Earthenwares, for items of similar size and use.

The proportions of Porcelain and Coarse Stoneware are consistently small and relatively close together. The differences in order between these two groups are not regarded as significant. The Refined White Earthenwares are consistently the most numerous, and appear to be increasing their proportion through time, except at Provenience Group 32, which is the Cinders Midden west of the upper foundation. In this assemblage, which dates to 1830, the Refined White Earthenwares and the Coarse Earthenwares essentially change places. Table 4 clearly indicates that the largest portion of the shift in place between the Refined White Earthenwares and the Coarse Earthenware is the reduced amount of Undecorated Refined White Earthenware accompanied by a corresponding increase in the Coarse Earthenware. The Undecorated Refined White Earthenware composes only 25.47% of the total ceramic assemblage in Provenience Group 32, and is consistently higher at the other locations, while the coarse earthenware increases to 59.25%, the largest value that it attains. This suggests that there is some exchange in function between these two ware groups, as indeed Miller observes that while most vessel forms were available in "CC" ware (Undecorated Refined White Earthenware) ". . . it was most commonly used for utilitarian vessels such as bowls, mugs, chamber pots, and kitchenwares" (Miller 1984:42). These were the vessel forms that were also commonly produced in redware, so this midden may contain the remains from a period when the cheaper local ceramics were being used as a substitute for Refined White Earthenware, much of which was imported. Another interpretation would be that the cinders midden reflects the use of the structure on the upper foundation as a kitchen, where food preparation vessels, particularly coarse earthenwares which might be less likely to move from the kitchen to the dining area, were being broken at a higher rate. The fact that porcelain achieves the highest rank appearance in this context when table ceramics alone are compared (see below) would not be consistent with this interpretation, however. The pattern of increasing proportions of Refined White Earthenwares through time (and concomittant reduction in the amount of coarse earthenware) recovers at the latest context, Provenience Group 33, the Lower Structure Interior. In general, the Refined White Earthenwares, Coarse Stoneware and "Porcelain, etc." are increasing their proportions through time, while coarse earthenwares are declining, with the exception of Provenience Group 32. The Cinders Midden does have generally lower Tau values than the other contexts, but it is not the only context with low values. The overall ordering of the functional ware

groups is not changing much through time, so the low Tau values must be accounted in some other way.

Another explanation for the differences reflected in the low Tau values is that differences within functional ware-type groups are affecting the ceramic patterns between the provenience groups on an intra-site basis, particularly the Refined White Earthenwares. Figures 32 through 41 show the percentage distributions for all the decorative types from each context with the contexts arranged in Mean Ceramic Date order. The dotted lines connecting the percentage data points represent trend line connectors, rather than calculated regression values. These trend lines are included to provide a visual impression of general trends in changes of percentages for each type. As indicated previously, Provenience Groups 37 and 38 are not shown in these graphics since the former is a mixed fill and the latter is a small "grab" sample. The source of the data for these figures may be found in Table 4.

Looking at the types within the functional groups, Porcelain, Refined Redware, and Refined Stoneware (Figures 32 - 34) are the most expensive items. These ware types were usually reserved for tea and coffee service, and it seems unlikely that a tavern, in particular, would put out whole dinner sets or place settings of this expensive material. We see that the general form of the distribution curve for all these types is concave upward; in other words, the proportions of all three of these types decline from the value found in Provenience Group 31, the earliest nineteenth century context on the lot, to a low point near 1820 for Porcelain and Refined Stoneware, and 1830 for Refined Redware, and subsequently rising again. If we assume with Wise (1976) that porcelain, by virtue of its high cost, is a particularly sensitive indicator of economic status, we would be tempted to conclude that status of the lot occupants (the status of the tavern?) fell and rose again through the period of occupation represented by the archaeological contexts.

The next group of ceramics is the Refined White Earthenwares. These are the most commonly used table ceramics following the initial introduction of Creamware in the last half of the eighteenth century, and they also became popular for chamber wares and other utilitarian purposes during the nineteenth century. They are divided into four groups, following Beidleman's modification (Beidleman et al 1983) of the decorative breakdown devised by Miller (1980) for these ceramics. The most expensive of decoration on the Refined White Earthenwares is transfer printing, abbreviated TransRwes in the tables, a technique developed in the eighteenth century. Hand painted designs was the next most expensive decorative technique, abbreviated HPRwes in the tables, followed by a group of more mechanical techniques such as banding, which are grouped together under the classification "Minimally Decorated", abbreviated MinDecRwes, although they can often appear to be elaborate and gaudy. The least expensive of the Refined White Earthenwares were those classified here as "Undecorated", abbreviated UndecRwes in the tables, and they are equivalent to the "Common Creamware" or "CC" designation included in the price lists examined by Miller (1980).

Although the prices for these groups changed between 1796 and 1855, declining on the average, the ordinal relationship between the prices of the four groups remained the same; in other words transfer printed ceramics are always more expensive than hand painted wares in the same vessel forms, which are, in turn,

**Figure 32**

**Riseing Son Tavern: Percent Porcelain through Time  
Bar Chart**

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

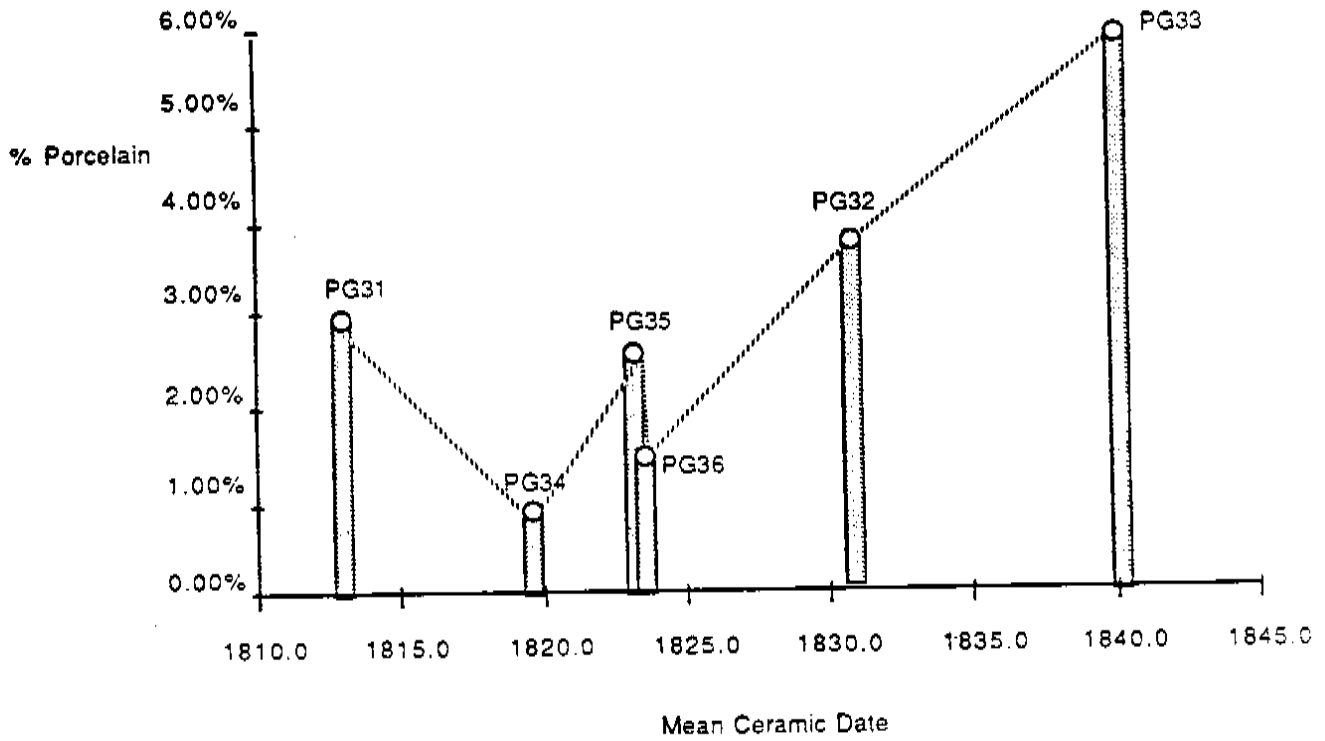




Figure 33

Riseing Son Tavern: Percent Refined Redware  
BarChart

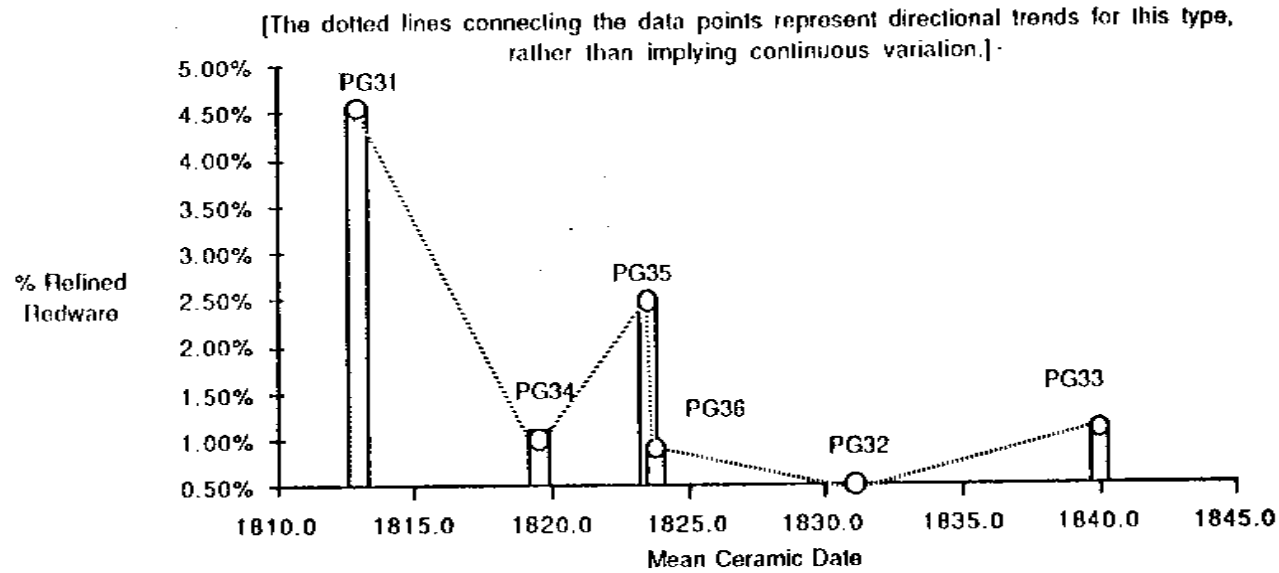
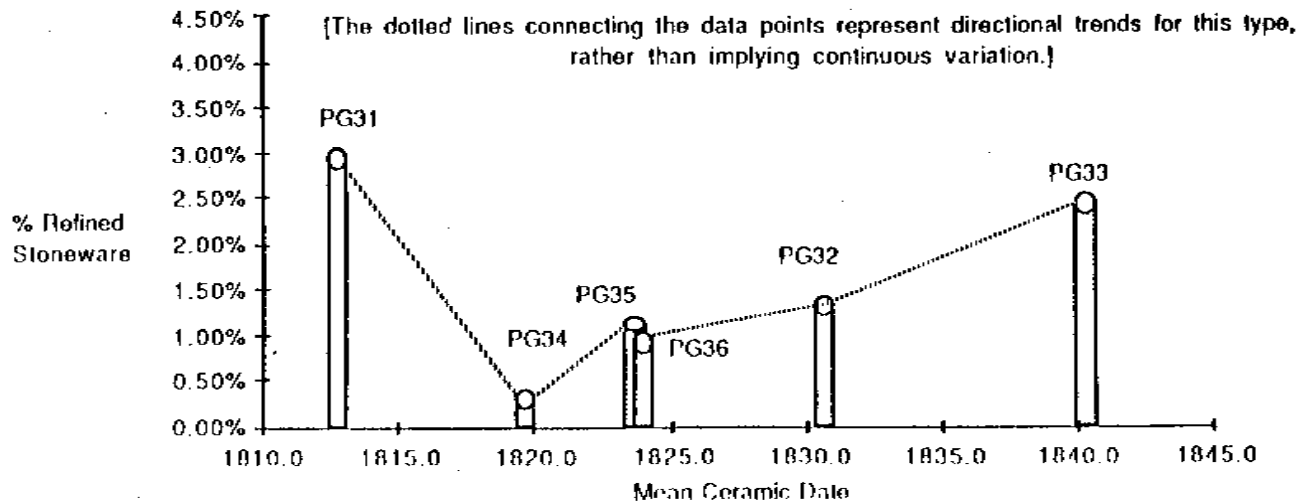


Figure 34

Riseing Son Tavern: Percent Refined Stoneware through Time  
Bar Chart



always more costly than minimally decorated wares, etc. The proportional distributions of these types vary somewhat through time. Transfer-Printed Refined White Earthenware (Figure 35) generally increases through time, though it drops dramatically in Provenience Group 32, at 1830. Hand-painted Refined White Earthenwares (Figure 36) decline from a high in 1815 (Provenience Group 31) to zero in 1830 (Provenience Group 32) and reappear at the end of the sequence. The Minimally Decorated Refined White Earthenwares (Figure 37) increase in proportion from 1815 (Provenience Group 31) to 1820 (Provenience Group 34) and then show differing values for Provenience Groups 35 and 36, which are less than a year apart at 1823. From this point they decline, until they are absent at the Lower Structure Interior (Provenience Group 33) at 1840. The Undecorated Refined White Earthenwares show some fluctuation, particularly at Provenience Group 32 mentioned above, but generally rise toward the end of the (archeological) occupation.

The remaining decorative types are most commonly used for utilitarian purposes. The most common of these, Coarse Earthenware, has already been discussed. Yellowware and Coarse Stoneware represent only a small proportion of the collections, and they appear to rise and fall in complementary fashion - that is, Coarse Stoneware declines as Yellowware rises and vice versa (see Figures 39 and 40).

More specific cost information is available on the Refined White Earthenwares because of research carried out by George Miller (1980, 1984) so the proportions for those types have been computed separately from the rest of the ceramics (Figure 42). Three of the four types maintain a consistent ordering, with Undecorated always more numerous than Transfer-Printed, which, in turn is always more numerous than Hand-Painted Refined White Earthenwares. The fourth type, Minimally Decorated Refined White Earthenwares, occupies each of the three lowest ordering positions at least once in the total assemblage. Each time it changes position, it changes the rank order of the other types, and this may be contributing to the relatively low Tau values obtained when all the functional and decorative types are ranked together. With one exception, Provenience Group 32, the least expensive decorative type, Undecorated, and the most expensive of the Refined White Earthenwares types, Transfer-Printed, represent the first and second largest proportions of the collection of Refined White Earthenwares at the different provenience groups.

This may be related to the observation made after the testing program, that the ceramics at the extreme ends of the cost scale would appear in larger proportions at this site (Thompson 1984:76). This characteristic was observed for the total ceramic collection retrieved during testing, and will be discussed further in the discussion of the intersite comparisons. Indeed, even at Provenience Group 32, when the Porcelain, Refined Redware, and Refined Stoneware are combined and plotted as a percentage with the the Refined White Earthenwares (Figure 43 -- still excluding the other "utilitarian types"), the combined Porcelain-fine stoneware type achieves one of its higher values, transcending all the Refined White Earthenwares types except Undecorated. If the "Porcelain, etc." is, in effect, replacing the Transfer-Printed Refined White Earthenwares, then this fact, in combination with the increased proportion of the cheapest utilitarian ceramics, represented by the Coarse Earthenware, suggests that the Cinders Midden, Provenience Group 32, may be the

Figure 35

Riseing Son Tavern: Transfer Printed Refined White Earthenware Bar Chart

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

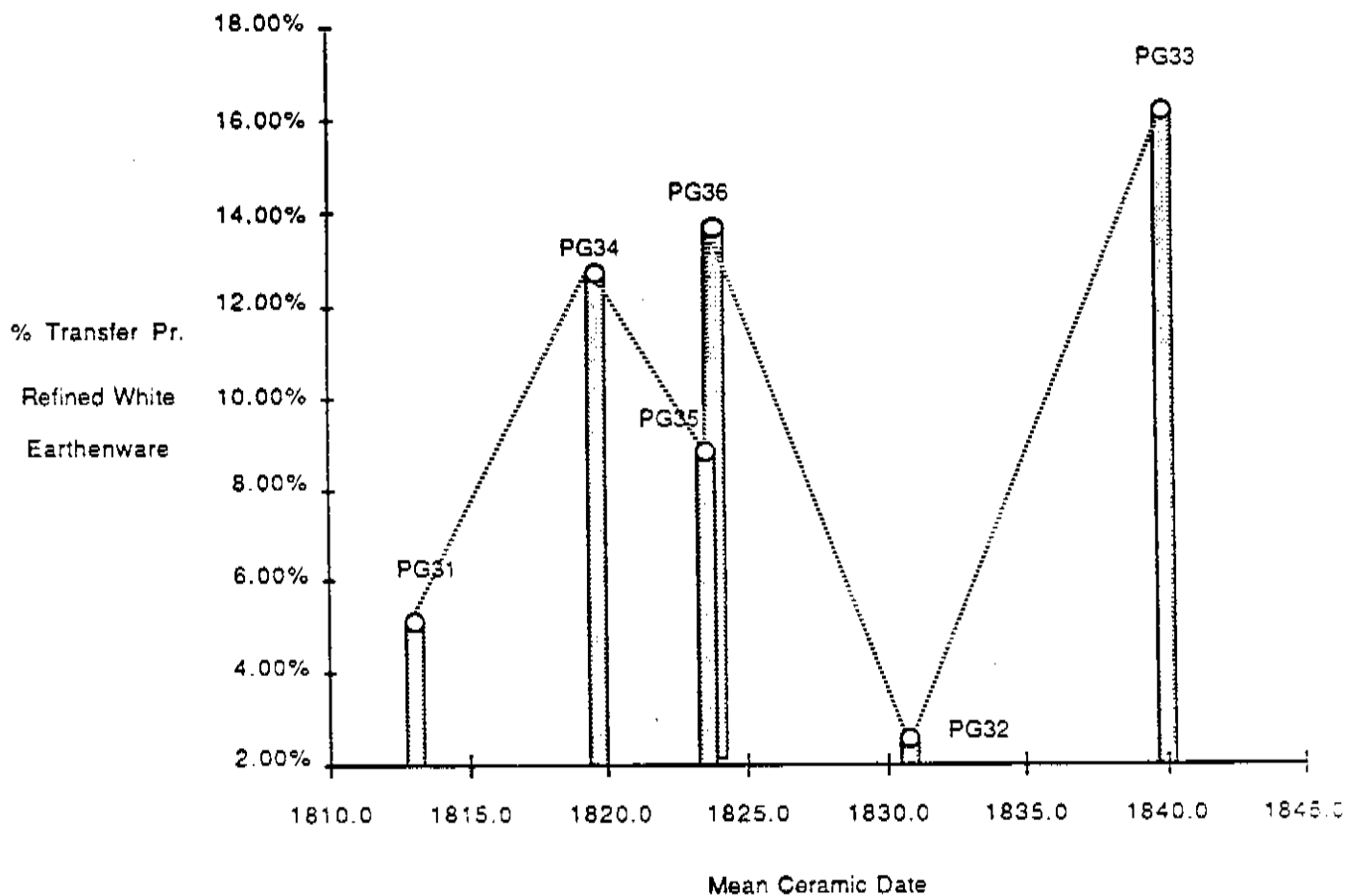


Figure 36

Riseing Son Tavern: Percent Hand-Painted Refined White Earthenware through Time - Bar Chart

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

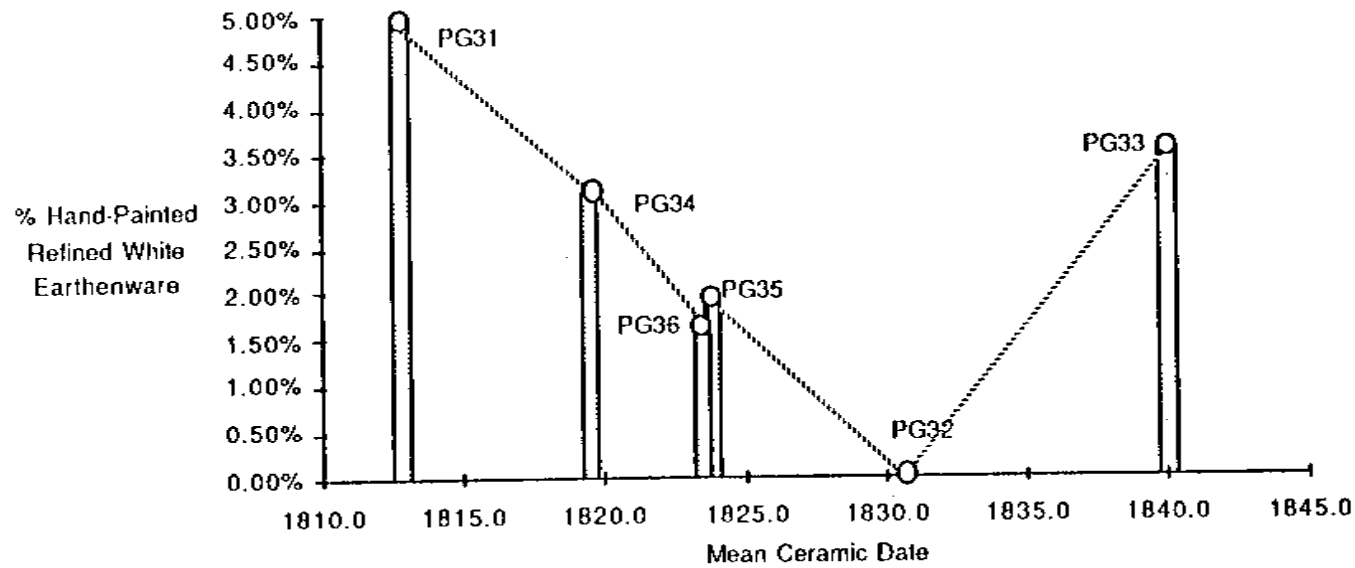


Figure 37

Rising Son Tavern: Percent Minimally Decorated Refined White Earthenware through Time - Bar Chart

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

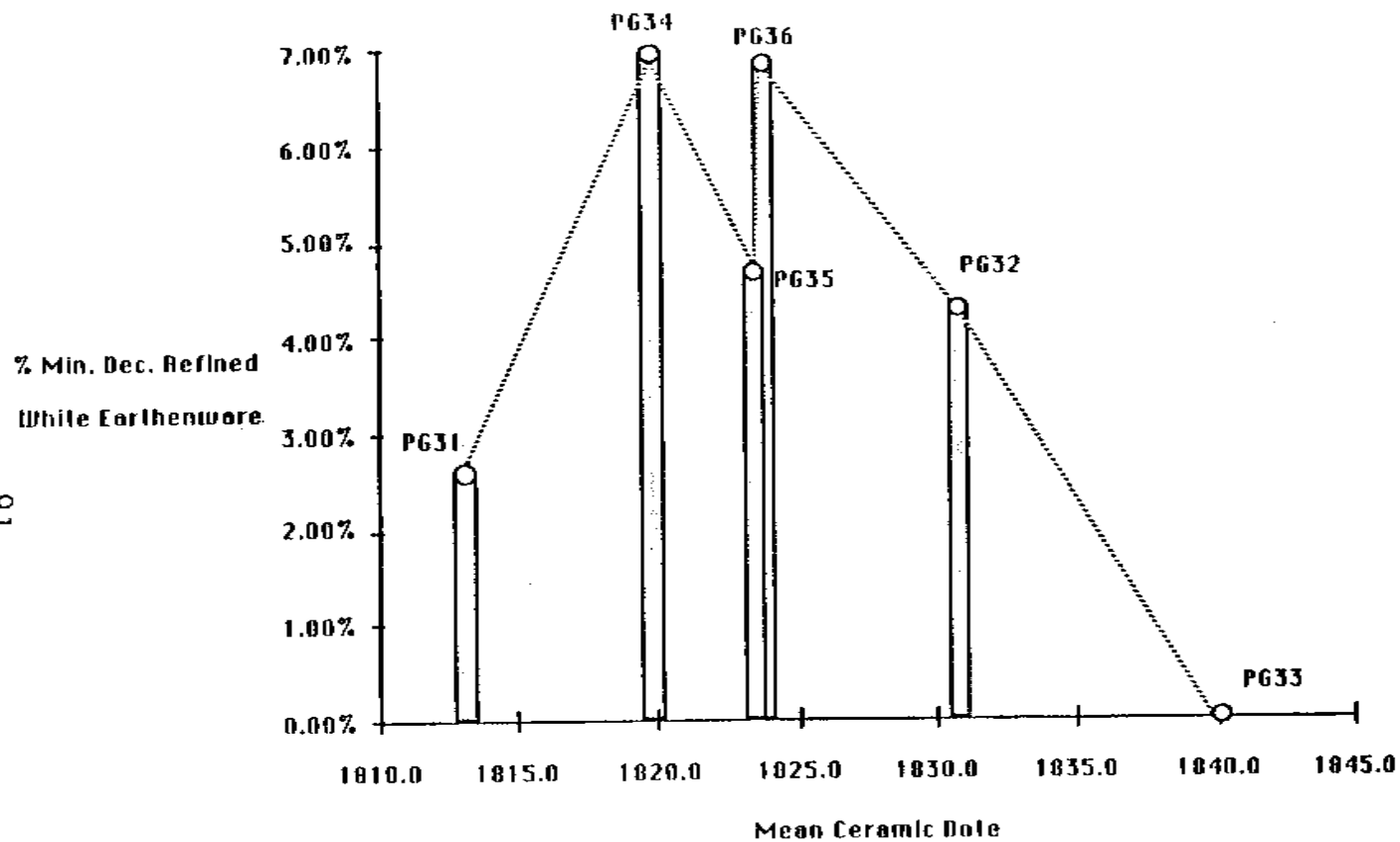
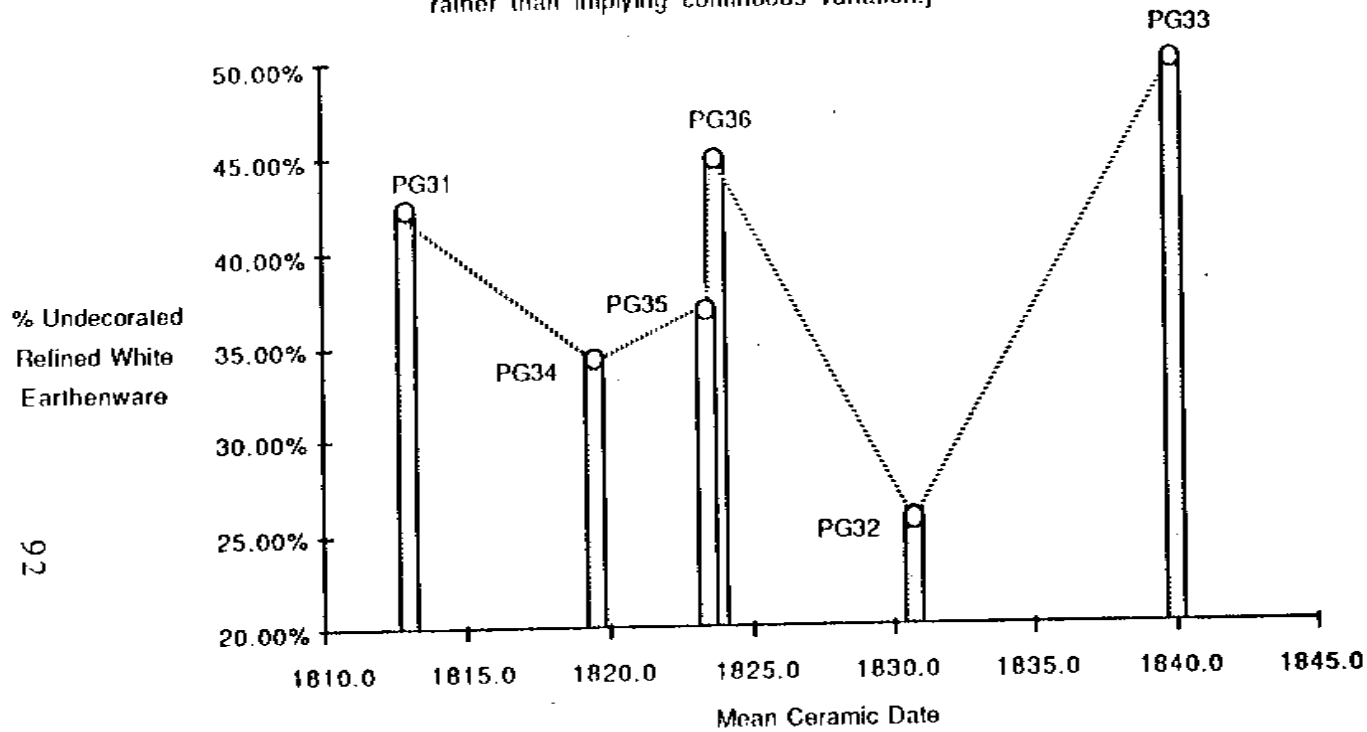


Figure 38

Riseing Son Tavern: Percent Undecorated Refined White Earthenware through Time - Bar Chart

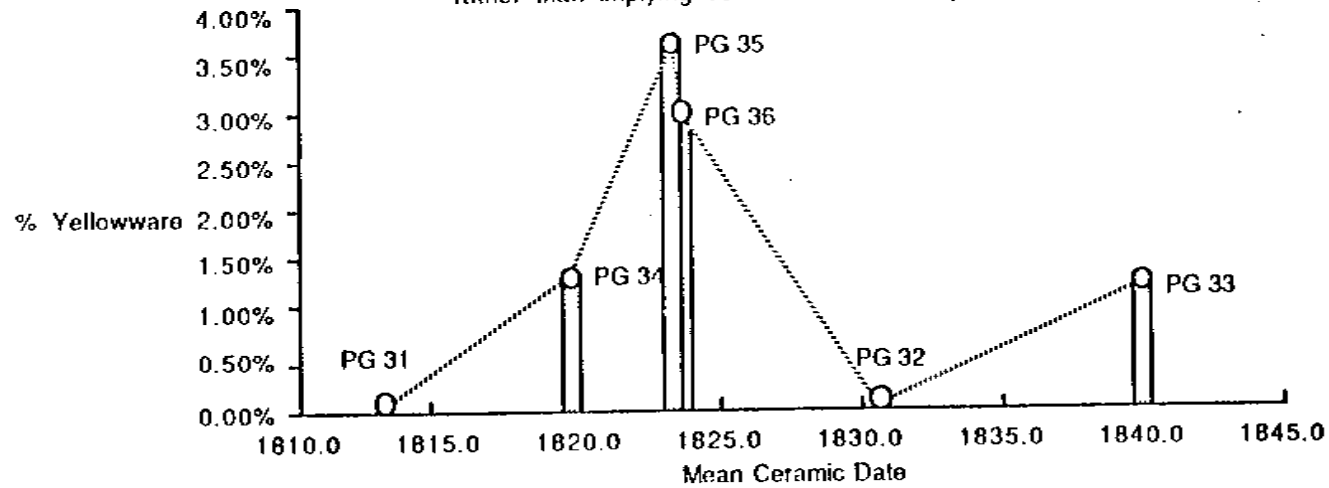
[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]



**Figure 39**

**Riseing Son Tavern: Percent Yellowware through Time  
Bar Chart**

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]



**Figure 40**  
**Riseing Son Tavern: Percent Coarse Stoneware through Time**  
**Bar Chart**

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

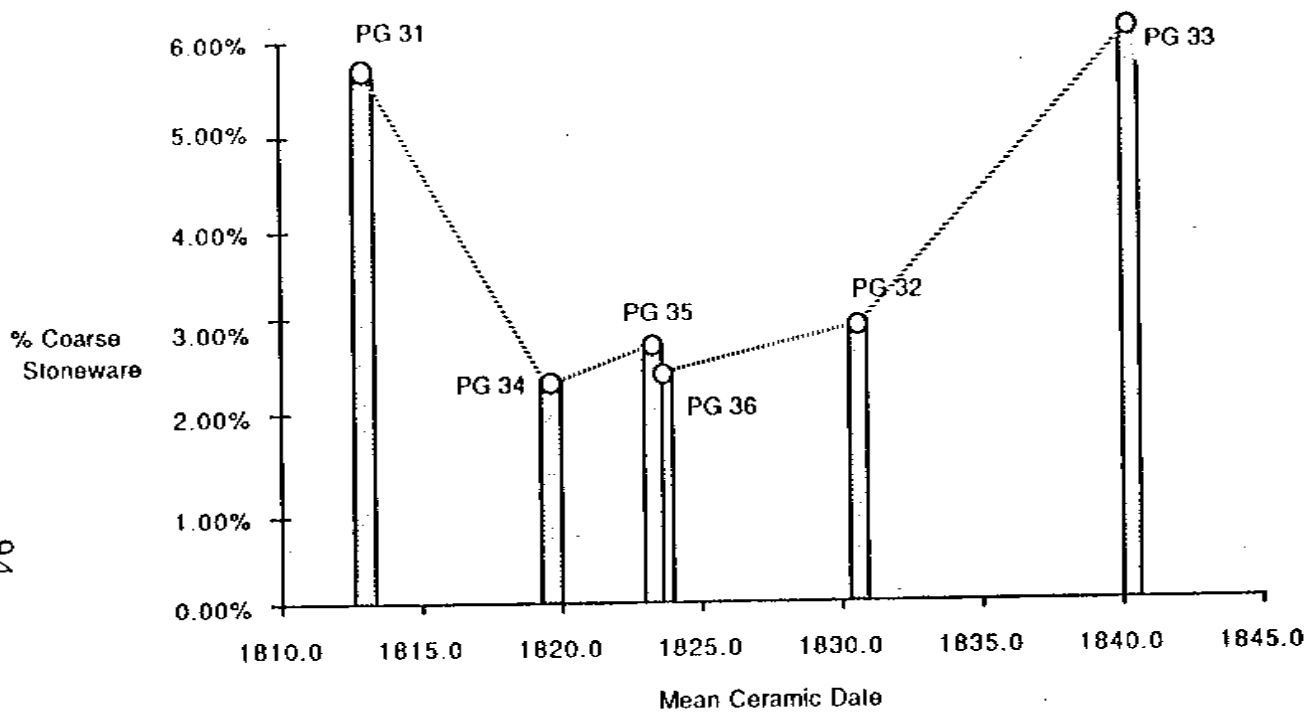




Figure 41

Riseing Son Tavern: Percent Coarse Earthenware through Time  
Bart Chart

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation.]

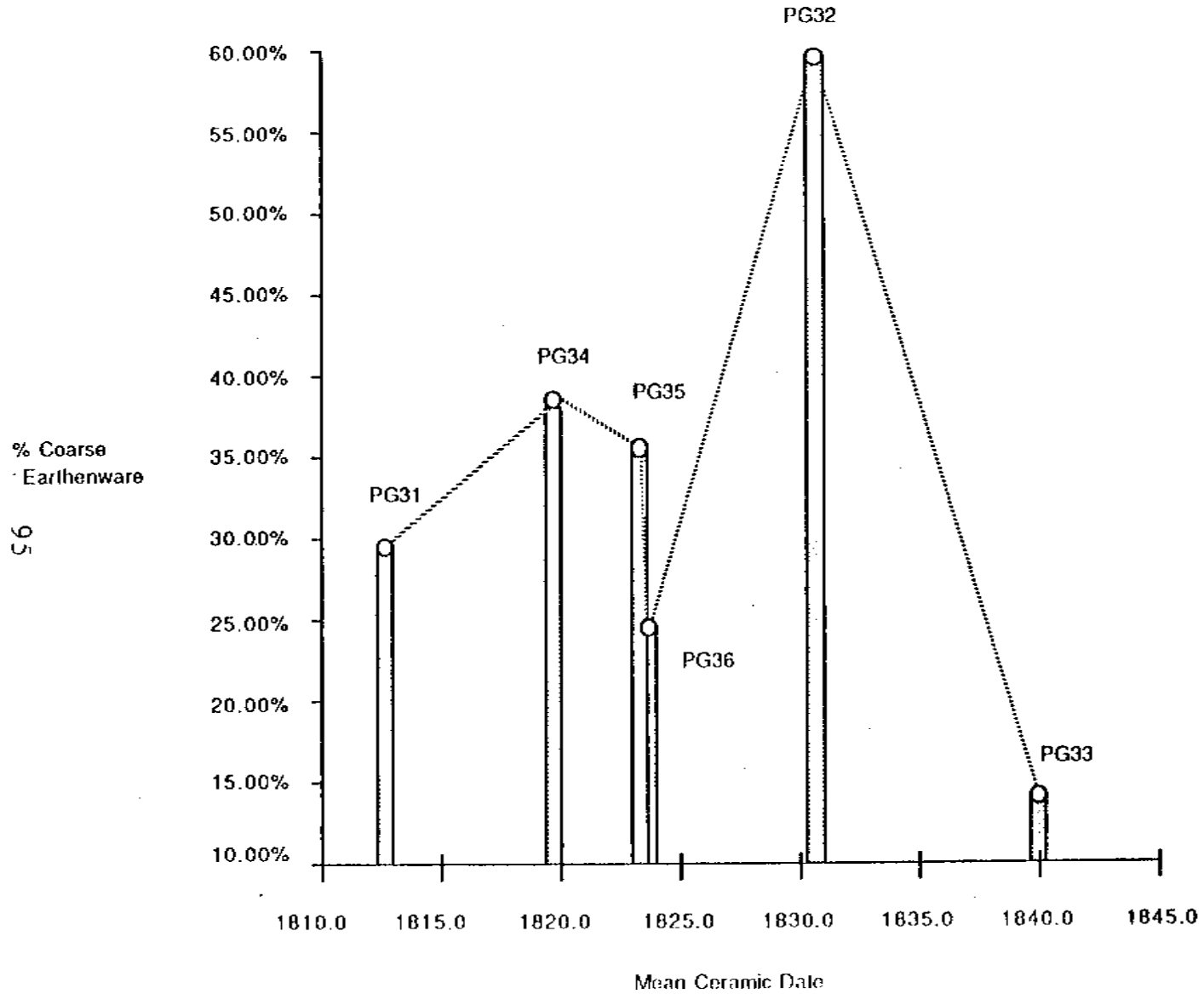


Figure 42

Riseing Son Tavern: Percent Refined White Earthenwares, Only through time - Bar Chart

[The dotted lines connecting the data points represent directional trends for each type, rather than implying continuous variation.]

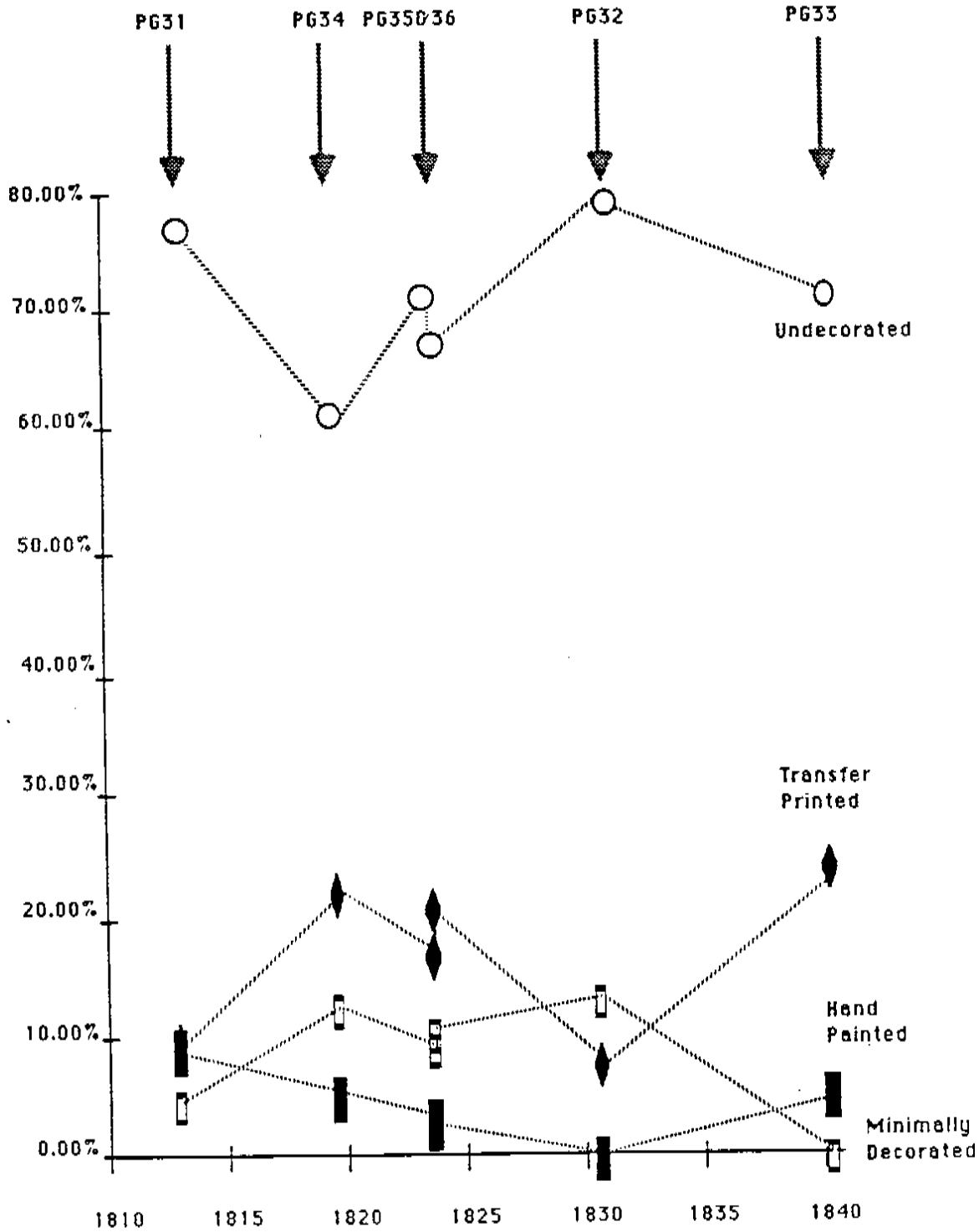
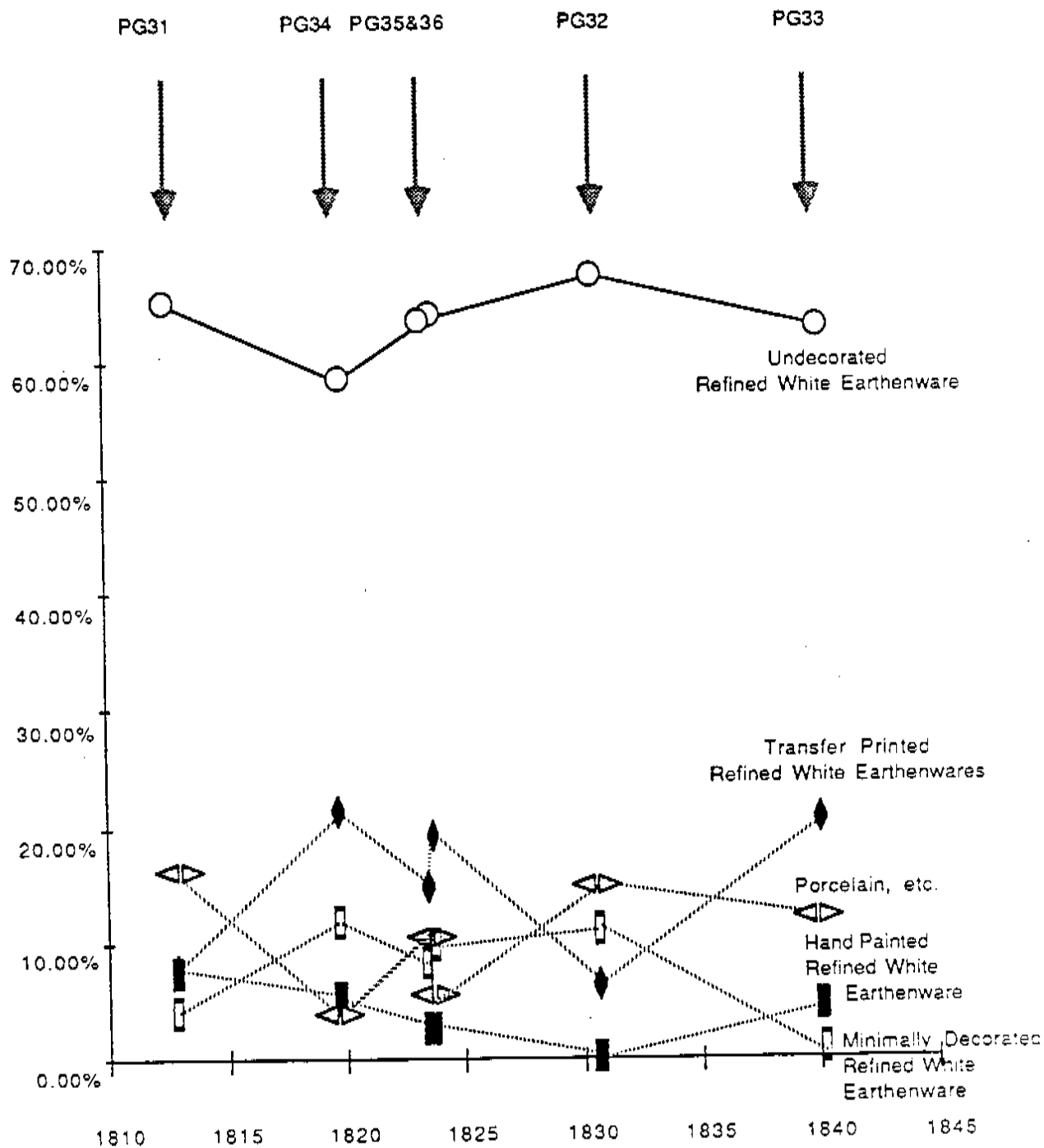


Figure 43

Riseing Son Tavern: Percent Table Wares through Time

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. The percentage values are obtained for the sum of the types shown here ONLY. Other ware types are not included at all in the percentage calculations.]



context that is the most extreme example of this intensification of use of ceramics at opposite ends of the cost scale, as hypothesized after the completion of the testing program.

Summary: Intrasite - The comparisons described above are presented here for the light they might shed on internal spatial differences across the site. In general, the midden deposits and the fence line seem to be relatively similar, particularly in the distribution of functional groupings, and the materials from the interior of the lower structure (Provenience Group 33) are rather distinctive. These results can be interpreted in view of the different origins of these assemblages, but there is no obvious explanation for the extreme variation in the distribution of the ceramic functional groups in the Cinders Midden (Provenience Group 32). The distributions of the decorative types vary somewhat through time, as reflected in the intrasite Tau calculations (Table 4), but the distribution of functional groups, both in general and among the ceramics appears relatively stable. Most of the variation in the distribution of the decorative types, reflected by the relatively low Tau scores, results from the variation in the percentages of the types that make up small proportions of the total sample, in particular, the decorated Refined White Earthenware types. Relatively small changes in sherd counts between categories whose proportional value is near one percent can change the relative ordering (rank ordering) of those categories and lower the Tau calculation. The most important observation about these distributions that bears repeating here is that, except for the Minimally Decorated Refined White Earthenwares, the remainder of the decorative types within the Refined White Earthenwares maintain a consistent order and similar percentages. The data are too limited to suggest that the Minimally Decorated wares can have some kind of positive or negative "key" significance in comparisons between assemblages, but the possibility might be explored by further research. The similarity between the middens, with the exception of Provenience Group 32, suggests that the disposal patterns that contributed to these kinds of contexts were not particularly differentiated across space, at least on the portions of the lot investigated.

The fact that the contexts could be ordered in time across a period of about thirty years allowed us to investigate the possibility that the distribution of ceramics was changing through time. The most notable change observed is that the proportion of coarse earthenware is declining and the other types generally increase as industrial and mass-market ceramics gradually replace local pottery production for a variety of functions (cf. Myers 1984).

The only other trend that was observed in the distribution of the artifacts with the passage of time was the fact that the older contexts were found higher on the lot, closer to the dwelling. Feature 99, the midden adjacent to the upper foundation, and even the contaminated fill in this location all provided older Mean Ceramic Dates than those further south on the lot. This suggests that the use of the domestic space was expanding toward the south after the beginning of the nineteenth century. The youngest date obtained for a midden was for the cinders midden also adjacent to the upper foundation, so trash disposal was apparently still taking place closer to the dwelling, even after it had been initiated further down on the lot.

Faunal Analysis: Intrasite - The analyses of the bone and oyster remains from the site were completed by independent consultants, and the results are presented in Appendices IV and V. Table 13 gives a summary for the bones of the number of elements and the minimum numbers of individuals from each provenience group. The bone analysis was done "blind", and the consultant's observation that the use of a saw for butchering the carcasses of large animals is more common after 1850 is undoubtedly true, but, within the dating limitations discussed previously, there seems to be no reason to doubt that all the provenience groups are earlier. It may be that proximity to an urban area resulted in the early introduction of this modern technique. It also seems unlikely that the paucity of rodent bones can be accounted for by rapid burial or sealed context, since the majority of the material comes from open midden contexts. Cats were well represented, and they may have chosen to devour their prey in locations more secluded than the side yards where the middens were accumulating. Likewise, rodents caught in traps would not likely be disposed of in the yard. Recovery techniques were limited, however, since the open midden contexts did not encourage the expectation that significant samples of smaller remains could be obtained.

The clear distinction between Feature 99 and the remaining contexts as a group, is consistent with the other evidence and was made independently by the consultant. The highly fragmented nature of the bones is consistent with the suggestion that the French Drain feature contained secondarily deposited fill, and the absence of sawing for butchering consistent with its earlier date. The range of elements indicates on-site butchering, and this in turn is consistent with an earlier date when commercial meat preparation would not have been available. The tract was larger (13 1/2 acres) when the feature fill originated, and at least some of the animals may have been raised on the premises. By the turn of the century the lot has been reduced to four acres, and although limited husbandry of pigs and chickens would be possible on a tract that size there does not seem to be much archeological evidence for it. The 1804 Tax Assessment does indicated that Peter Springer owned \$79 worth of livestock, but stock does not appear thereafter in the assessment records that were examined. The large quantity of material from Provenience Group 35 may be accounted for by the fact that it represents the largest volume of proveniences grouped together.

For the identifiable mammal bone, the proportions of the three species, cows, pigs and sheep, appear in the same rankings for the the Nineteenth century proveniences, the eighteenth Century provenience, and the totals. Cows tend to represent roughly half of the identifiable bone elements, and a third of the Minimum Numbers of Individuals, with pigs more numerous than sheep in the remainder of these counts. Roasts and soup meats appear to have been the dominant cuts represented, and this is consistent with the general pattern of food preparation for the period, and the function of the tavern.

The oyster shell samples were not particularly revealing, but some observations can be made. The fact that most of the shells for which an environment of origin can be determined come from mudflats and relatively low salinity regimes suggests that their origin is largely local. The fact that they are predominantly broken, rather than shucked suggests that they were probably used in soups and stews, rather than served individually. These observations all suggest that the

population being served was served as a group, which might include both a large family and tavern guests.

### Synthetic Analysis: Intersite

The analysis in this section is devoted to dealing with the questions about the possible distinctive patterns in artifact assemblages associated with taverns by contrast to other kinds of sites. The question of whether or not the function of a site will create identifiable patterns in the artifact distributions in general, and in the ceramics in particular, is addressed.

Functional Analysis: Comparison of Urban vs. Rural Taverns - A study of three late seventeenth and one early eighteenth century taverns concluded that the percentage distribution of specific functional artifact classes would distinguish between urban and rural taverns (Rockman and Rothschild 1984). The analysis was based on a suggestion by Feister (1975) that taverns in urban and rural settings served different social functions. Rockman and Rothschild reasoned that urban taverns served as places for meeting and socializing as much or more than dining, and that the proportion of artifacts associated with those activities, smoking pipes and wine bottle fragments would be larger than at rural taverns, where food serving and consumption items would be relatively more important. They compared the percentage distributions of these items from four taverns, using the Robinson Coefficient of Agreement (Doran and Hodson 1975:139) described previously.

Although the contexts compared by Rockman and Rothschild were more than half a century earlier than the eighteenth century context at the Rising Son tavern in Stanton, there seemed to be no reason why the logic of their argument would not continue to apply, so the comparison was extended to include Feature 99 from the Tavern Lot. The results of the comparison are given in Table 6, and they appear to be consistent with the results originally obtained by Rockman and Rothschild (1984)<sup>8</sup>. The highest comparison value obtained for Feature 99 is 161.19 in the comparison with Wellfleet Tavern, and this is also the second highest value in the table (174.1). Wellfleet Tavern is classified as a rural tavern, and the comparison between it and Earthy's Tavern yielded the highest comparison value. Earthy's Tavern at Pemaquid, like the Rising Son Tavern, was located in a rural village, and the comparison between it and Feature 99 was also fairly high at 135.29. The comparison between Feature 99 and the two contexts described as "urban" by Rockman and Rothschild were fairly low.

Table 6 - Coefficient of Agreement , Four Taverns

	Jamestown	Earthy's	Wellfleet	Rising Son
Lovelace Tavern	138.93	88.56	72.27	36.26
Jamestown Tavern		125.45	113.25	77.24
Earthy's Tavern			174.1	135.29
WellFleet Tavern				161.19

Rockman and Rothschild also compared the four taverns using just the percentages of pipes and ceramics (all the percentages are given in Table 7) and noted that these proportions arrayed the four sites along a continuum showing an inversion from urban to rural (Figure 1 in Rockman and Rothschild 1984:119). If the Stanton data is calculated in a similar fashion and added to their chart, the inversion becomes complete, with the data from Stanton being almost the exact reverse of that from the Lovelace Tavern (see Figure 44). Although it is located in a small crossroads village, the Riseing Son is clearly in a rural, rather than an urban setting. The possibility that the difference in time is having an effect cannot be overlooked. The increased availability of refined white earthenwares such as creamware and pearlware (which are present in Feature 99) at a relatively modest cost may have the effect of inflating the proportion of ceramics at the later site. With only a fifth site added here to their original analysis of four, we may repeat their observation that "this analysis allows it only to be said that the results are suggestive rather than conclusive". Additional observations on the use of this analysis and the results will be mentioned in the conclusions.

Functional Analysis: Comparison with other Contexts - Unfortunately, the artifact inventories available in the reports on the excavations at these and other tavern are not sufficiently detailed to allow a direct comparison with the Riseing Son Tavern assemblage using South's functional groups. Data are available from several nearby sites in Delaware, however, and these are tabulated in table 8. The contexts from the Wilmington Boulevard project that provided sufficient ceramic data for decorative type analysis were also compared for South's function groups and they show some variation from the Carolina Pattern. Klein and Garrow (1984:289-291) offer some discussion of these variations and there is little to add to that discussion. The data are included here to provide a range of different kinds of functional contexts for comparison with the Riseing Son Tavern Site, to determine if functional differences in the artifact assemblages can be detected.

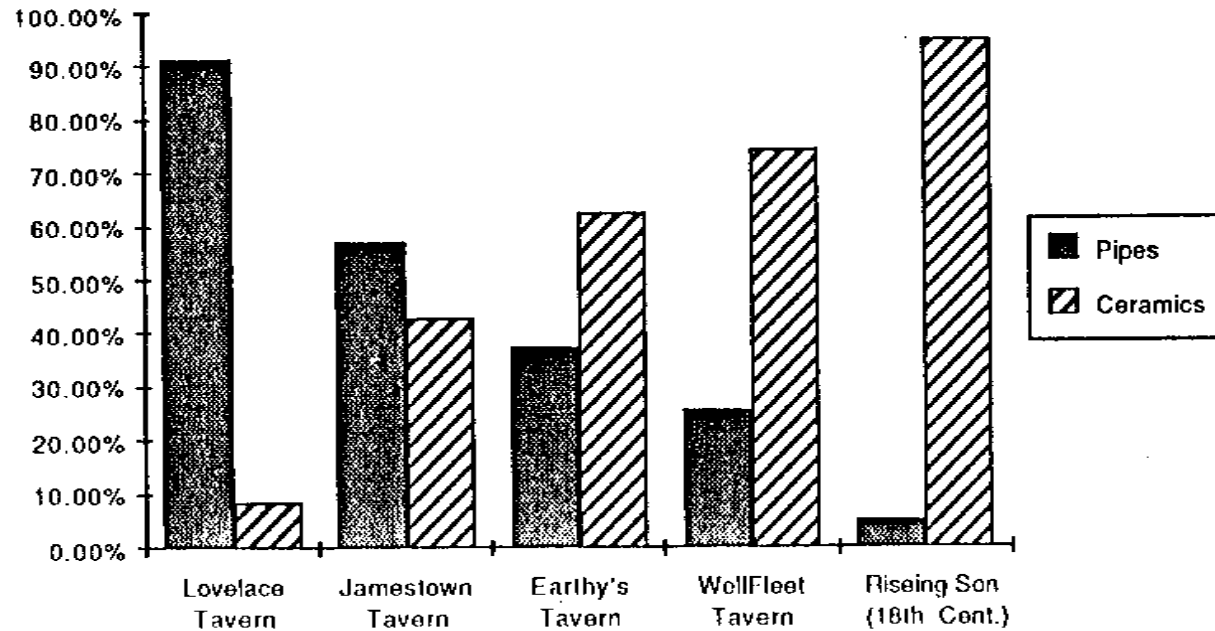
A series of pair-wise comparisons between the sites was carried out using the Robinson Coefficient of Agreement in a manner similar to the comparisons between the Provenience Groups, described above. The values obtained for these comparisons are included in Table 9, and a brief description of the contexts used for comparison will be given here (additional information can be found in the references given). The assemblages from Wilmington Boulevard (Klein and Garrow 1984) come primarily from privy features. The materials from Feature 1, Area D, appear to have originated from domestic activities from a family of middle to upper-middle economic status. The two contexts from Feature 2 in Area H are interpreted as coming from a site with primarily a commercial function, and the assemblage derived from combining materials from Features 15, 17, and 25, from Area A (the "Dowdall" Features) are from a site whose function combined residential with commercial activities. All these sites are from a clearly urban setting and range in date from 1802 to 1860 (as mentioned previously, the calculation of the Mean Ceramic Dates for these contexts used some different type designations from that conducted for the other contexts described here). The remaining two sites are rural. The William Hawthorne Site, was the residence of relatively prosperous landowning farmers from circa 1745 (Coleman et al 1984), while the Ferguson/Weber Homestead (Coleman et al 1983) was apparently occupied as a tenant farmers residence from circa 1835.

**Table 7 - Artifact Quantities, Five Taverns**

Site	Pipes	%	Ceramics	%	Bottles	%	Total	%
Lovelace Tavern	4220	65.57%	388	6.03%	1828	28.40%	6436	100.00%
Jameslown Tavern	543	35.03%	411	26.52%	596	38.45%	1550	100.00%
Earthy's Tavern	2863	37.07%	4769	61.75%	91	1.18%	7723	100.00%
WellFleet Tavern	9090	24.12%	26336	69.89%	2255	5.98%	37681	100.00%
Rising Son (18th)	46	4.72%	857	87.90%	72	7.38%	975	100.00%

**Figure 44**

**Proportions of Pipes and Ceramics at Five Tavern Sites**



Source: Rockman and Rolhschild (1984) and Table 7, above.



**Table 8**  
**Riseing Son Tavern, Intersite Comparison, South's Function**

Site	MCD		Kitchen	Architect.	Furniture	Arms	Clothing	Personal	Tob. Pipes	Activities	Total
Area D, F. 1	1802.3	Count	2830	2047	7	5	343	10	209	53	5504
		%	51.42%	37.19%	0.13%	0.09%	6.23%	0.18%	3.80%	0.96%	100.00%
Riseing Son Tavern	1822.6	Count	7209	3064	18	13	24	11	113	954	11406
		%	63.20%	26.86%	0.16%	0.11%	0.21%	0.10%	0.99%	8.36%	100.00%
Area A, Dowdall Feas.	1849.2	Count	11799	1747	0	0	32	13	24	159	13774
		%	85.66%	12.68%	0.00%	0.00%	0.23%	0.09%	0.17%	1.15%	100.00%
Wm. Hawthorne	1850	Count	14258	7445	11	29	44	11	28	1009	22835
		%	62.44%	32.60%	0.05%	0.13%	0.19%	0.05%	0.12%	4.42%	100.00%
Area H, F. 2, L2B&2C	1852.6	Count	2873	2862	3	0	72	18	53	1038	6919
		%	41.52%	41.36%	0.04%	0.00%	1.04%	0.26%	0.77%	15.00%	100.00%
Area H, F. 2, L2A	1859.9	Count	1242	903	4	0	14	75	13	2112	4363
		%	28.47%	20.70%	0.09%	0.00%	0.32%	1.72%	0.30%	48.41%	100.00%
Ferguson Tenant Farm	1875	Count	4383	3999	29	30	17	0	55	250	8763
		%	50.02%	45.64%	0.33%	0.34%	0.19%	0.00%	0.63%	2.85%	100.00%

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Carolina Pattern	Mean	63.1%	25.5%	0.2%	0.5%	3.0%	0.2%	5.8%	1.7%
	Range	47.5%	12.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
		to	to	to	to	to	to	to	to
Architectural (Frontier) Pattern	Mean	27.6%	52.0%	0.2%	5.4%	1.7%	0.2%	9.1%	3.7%
	Range	10.2%	29.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		to	to	to	to	to	to	to	to
		45.0%	74.3%	0.5%	15.6%	6.9%	0.7%	27.1%	11.8%

Table 9

		Coefficient of Agreement Intersite Comparison South Function					
Sites		Riseing Son, 19th Cent.	H2,2A	H2,2B&C	A, Dowdall	D1	Hawthorne
Wilmington Boulevard	Area H, F. 2, L2A	1.18					
	Area H, F. 2, L2B&2C	1.59	1.30				
	Area A, Dowdall Feas.	1.52	0.86	1.12			
	Area D, F. 1	1.63	1.02	1.63	1.31		
	Wm. Hawthorne	1.89	1.08	1.58	1.53	1.71	
	Ferguson	1.62	1.05	1.73	1.28	1.78	1.72

These sites provide a range of urban and rural sites of varying status and function for comparison with the assemblage from the Riseing Son Tavern, to determine whether or not there are characteristics of the distribution of functional artifact groups peculiar to the tavern. Table 10 summarizes the contexts used for comparison. The values obtained by the computation of Robinson Coefficient (Table 9) suggest that the proportional distribution of functional groups at the Tavern is relatively similar to contexts of rather different functional origin. All the comparisons except one yield values in excess of 1.5, with the highest value, 1.89 obtained in comparison with the Hawthorne site. The fact that the next three high values for comparisons with the Riseing Son Tavern include a middle (economic) class urban residence (1.63), a rural tenant farm (1.62), and an urban commercial site (1.59), suggest that total percentage differences in the distributions of the various artifact functional groups are small between sites of varying function, and that South's (1977) functional groups are not providing a basis for distinguishing between sites of the kinds evaluated here. This is further reinforced by the fact that the second and third highest values calculated are between the rural tenant house (Ferguson/Weber) and the urban middle class residence (Area D, Feature 1, SRij=1.78) and the urban commercial site (Area H, Feature 2, Levels 2B and 2C, SRij=1.73). This measure is "distribution-free" and provides only an impression of association (or lack thereof), without the confidence intervals associated with parametric statistics, but the impression of similarity between sites of differing settings and functions is strong.

Ceramic Value Analysis: Intersite - An analysis of the ceramics similar to the one completed for the intrasite contexts was done, and a description of the decorative types may be found in that section of the report<sup>9</sup>. The percentages of the various ceramic types is given in Table 11. The rank orderings of these sites were compared between each pair of sites, and the results of the Tau comparisons are given in Table 12. The values for Tau for the between-site comparisons are generally higher than those observed for the intrasite analysis. The Taus for Eighteen of the Twenty comparisons are above .500, and those for comparisons with the Riseing Son Tavern (site total) range from .580 to .722. The latter value is attained in the comparison between the Tavern and the five-lot-totals from Bridgeboro, New Jersey, and both data sets are from village settings. The Bridgeboro Data (Thompson 1984a) were obtained from the data recovery excavation of house lots dating from the second half of the Nineteenth Century. The occupants of the lots are assumed to have been of

Table 10  
Riseing Son Tavern, Comparison Sites

Site Name	Site No.	MCD	N	Begin	End	Median	Contexts
Riseing Son Tavern	7NC-E-65						
- 19th C. Contexts, Stanton		1822.26	2098	1780	1870	1725	Midden
Bridgeboro, pre-1903				1840	1900	1870	Feas., Crawsp.
Miller Lot	7NC-E-64			1847	1910	1880	PZ, Midden
Area D, F1, Wilm.		1802.33	938	1783	1830	1807	Cistern-Privy
Area H, F2, L2B&2C, Wilm.		1852.59	792	1852	1854	1853	Barrel privy
Area H, F2, L2A, Wilm.		1859.9	436	1859	1860	1860	Barrel privy
Area A, F's 15,17,&25, Wilm.		1849.2	1046	1848	1852	1850	Middens+privy
Wm. Hawthorne Site	7NC-E-46	1857.5	9960	1738	1961	1850	Midden+Feas.
Robt. Ferguson Site	(N-3902)			1837	1940	1889	Midden+Feas.

Site Name	Site No.	Site Function (1)	Site Function (2)	Settling	Eco. Status	Reference
Riseing Son Tavern	7NC-E-65					
- 19th C. Contexts, Stanton		Tavern	Residence	vill.	[?]	Thompson 1986
Bridgeboro, pre-1903		Residence		vill.	lower mid	Thompson 1984b
Miller Lot	7NC-E-64	Residence		vill.	middle	Thompson 1984a
Area D, F1, Wilm.		Residence	Commerce(minor)	urb.	middle	Klein and Garrow '84
Area H, F2, L2B&2C, Wilm.		Commerce		urb.	low	Klein and Garrow '84
Area H, F2, L2A, Wilm.		Commerce		urb.	low	Klein and Garrow '84
Area A, F's 15,17,&25, Wilm.		Commerce/residence		urb.	lower mid	Klein and Garrow '84
Wm. Hawthorne Site	7NC-E-46	Residence		rur.ag.	high	Coleman et al '84
Robt. Ferguson Site	(N-3902)	Tenant Residence		rur.ag.	low	Coleman et al '83

Table 11  
Ceramic Decorative Types: Percent & Rank Order, Intersite

Decorative Types	Code	Wilm. Ar. D		Rising Son		Wilm. Ar. A		Wilm. Ar. H.	
		Fea.1	Rank	Stanton	Rank	Dowdal Feas.	Rank	F.2,L2B&2C	Rank
Porcelain	1	12.39%	5	2.82%	5	1.68%	7	0.16%	8
RefRedWare	21	0.19%	8	1.99%	9	0.00%	11	0.00%	10
RefStWare	22	0.51%	7	1.36%	10	0.03%	9.5	0.00%	10
TransRwes	4	9.47%	6	8.54%	3	11.72%	3	16.59%	4
HPRwes	5	12.71%	4	2.30%	7	2.62%	6	3.40%	6
MinDecRwes	6	14.87%	3	4.50%	4	5.07%	5	22.25%	2
UndecRwes	7	23.06%	2	36.35%	2	12.31%	2	29.77%	1
Yellowware	11	0.00%	10.5	2.13%	8	5.36%	4	6.23%	5
CoarseStWare	12	0.06%	9	2.80%	6	1.07%	8	0.24%	7
CoarseEWare	13	26.75%	1	37.10%	1	60.11%	1	21.36%	3
Decalco	17	0.00%	10.5	0.12%	11	0.03%	9.5	0.00%	10
		100.00%	n=1574	100.00%	n=4181	100.00%	n=3096	100.00%	n=1236

Mean Ceramic Date	1802.3	1822.61	1849.2	1852.6
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Decorative Types	Code	Wilm. Ar. H.		Bridgeboro		Miller	
		Fea.2,L2A	Rank	N.J.	Rank	Stanton	Rank
Porcelain	1	0.99%	6	1.24%	7.5	2.61%	5.5
RefRedWare	21	0.00%	10	0.59%	9.5	0.00%	10.5
RefStWare	22	0.00%	10	0.59%	9.5	0.00%	10.5
TransRwes	4	0.66%	7	14.45%	3	5.74%	3
HPRwes	5	6.45%	4	2.30%	6	1.57%	7
MinDecRwes	6	7.44%	2	6.14%	4	4.70%	4
UndecRwes	7	75.04%	1	46.37%	1	54.57%	1
Yellowware	11	2.31%	5	3.07%	5	0.26%	8.5
CoarseStWare	12	0.17%	8	1.24%	7.5	0.26%	8.5
CoarseEWare	13	6.94%	3	23.69%	2	27.68%	2
Decalco	17	0.00%	10	0.32%	11	2.61%	5.5
		100.00%	n=605	100.00%	n=3390	100.00%	n=383

Mean Ceramic Date	1859.9	1870	1880
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**Table 12**  
**Intersite Comparison Decorative Types**

<b>Sites</b>	<b>Area D,F1</b>	<b>Riseing Son</b>	<b>Ar. A,Dowdall</b>	<b>Ar. H,F2,2B&amp;2C</b>	<b>Ar. H,F2,2A</b>	<b>Bridgeboro</b>
Riseing Son	0.606					
Area A,Dowdall	0.500	0.679				
Area H,F2,2B & 2C	0.434	0.580	0.774			
Area H,F2,2A	0.547	0.617	0.698	0.750		
Bridgeboro	0.542	0.722	0.879	0.819	0.705	
Miller Lot	0.434	0.654	0.849	0.596	0.558	0.552

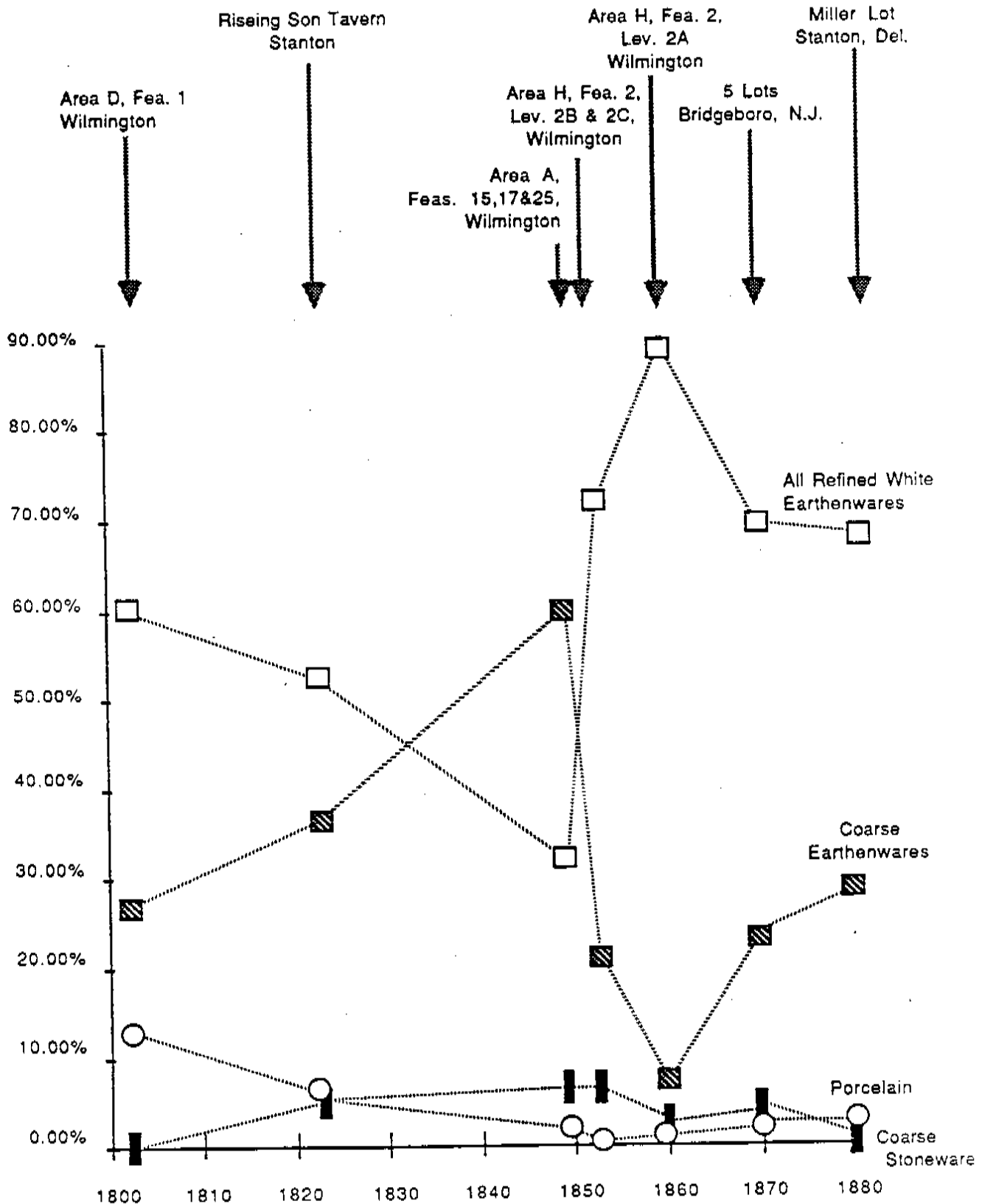
lower-middle to middle economic class. The tavern achieves its second highest Tau value in comparison with the Dowdall Contexts from the Wilmington Boulevard project, contexts classified as urban and commercial, and the range and distributions of the Tau values in general suggests an overall similarity between sites of differing characteristics, as did the comparison of the values for South's (1977) Functional Groups.

The percentages of the different types have been plotted as graphs for the intersite comparisons, shown in Figures 45 through 56, in date order. The dates for Bridgeboro, 1870, and the Miller Lot, 1880, are a median of the documented date range and an approximation, respectively, while the remainder are Mean Ceramic Dates. The Miller Lot is across Mill Lane from the Tavern Lot in Stanton (Figure 3), and is presumed to represent an occupation of middle economic status. For the "Functional" ceramic groupings of total Refined White Earthenwares, Coarse Earthenware, "Porcelain, etc.", and Coarse Stoneware (Figure 45), the same general pattern is present as was observed in the within-site data for the Tavern Site. The Porcelain grouping and the Coarse Stoneware represent small proportions of the all the assemblages while, with one exception, the Refined White Earthenwares, principally "Undecorated", are the most numerous with Coarse Earthenwares closer to an intermediate values within the overall range. The exception is the Dowdall Features from Area A in Wilmington, where the Coarse Earthenwares displace the Refined White Earthenwares in an almost reciprocal fashion. Garrow and Klein comment on the exceptional circumstances that may have affected the assemblages from these features (Garrow and Klein 1984:289 and 335), speculating that the high Redware proportion (the principal component in the Coarse Earthenwares tabulated here) originates specifically from kitchen activities for food preparation for the Dowdall family and factory workers, an argument similar to that mentioned above in connection with the Cinders Midden on the Tavern Lot (Provenience Group 32). In neither case, however, is it obvious why kitchen refuse, specifically, should concentrate in these particular contexts and not in the others which are being compared. It may be observed that, again with the exception of the Dowdall Features, the combined Tavern contexts have the lowest proportion of Refined White Earthenwares and the highest proportion of Coarse Earthenwares of any of the sites examined. Also, consistent with the hypothesis that both the most and least expensive ceramics would be disproportionately represented, the Tavern exhibits the second highest proportion of "Porcelain, etc.", second to Feature 1, Area D, Wilmington Boulevard, as well, but the amount of difference between the Tavern and the other contexts on these types is scarcely remarkable enough to provide an unambiguous key for the identification of Tavern Assemblages in undocumented contexts.

Looking at the plots for the individual types it may be seen that the amount of Porcelain, Refined Stoneware, and Refined Redware fluctuate slightly across small percentages, with the exception of Feature 1, Area D (Figures 46 and 47). Particular attention should be paid to the percentage scales on the left side of the graphs in the figures; for convenience different scales appear in different plots. The percentage value for the Transfer Printed Refined White Earthenwares at the Rising Son Tavern is close to the median value for all the sites (Figure 48) and a similar observation could be made for the Hand Painted Refined White Earthenwares, if the exceptionally high percentages at Feature 1, Area D and Level 2A, Feature 2, Area H are excepted

**Figure 45**

**Riseing Son Tavern: Percent Ceramics by Functional Group, Intersite**

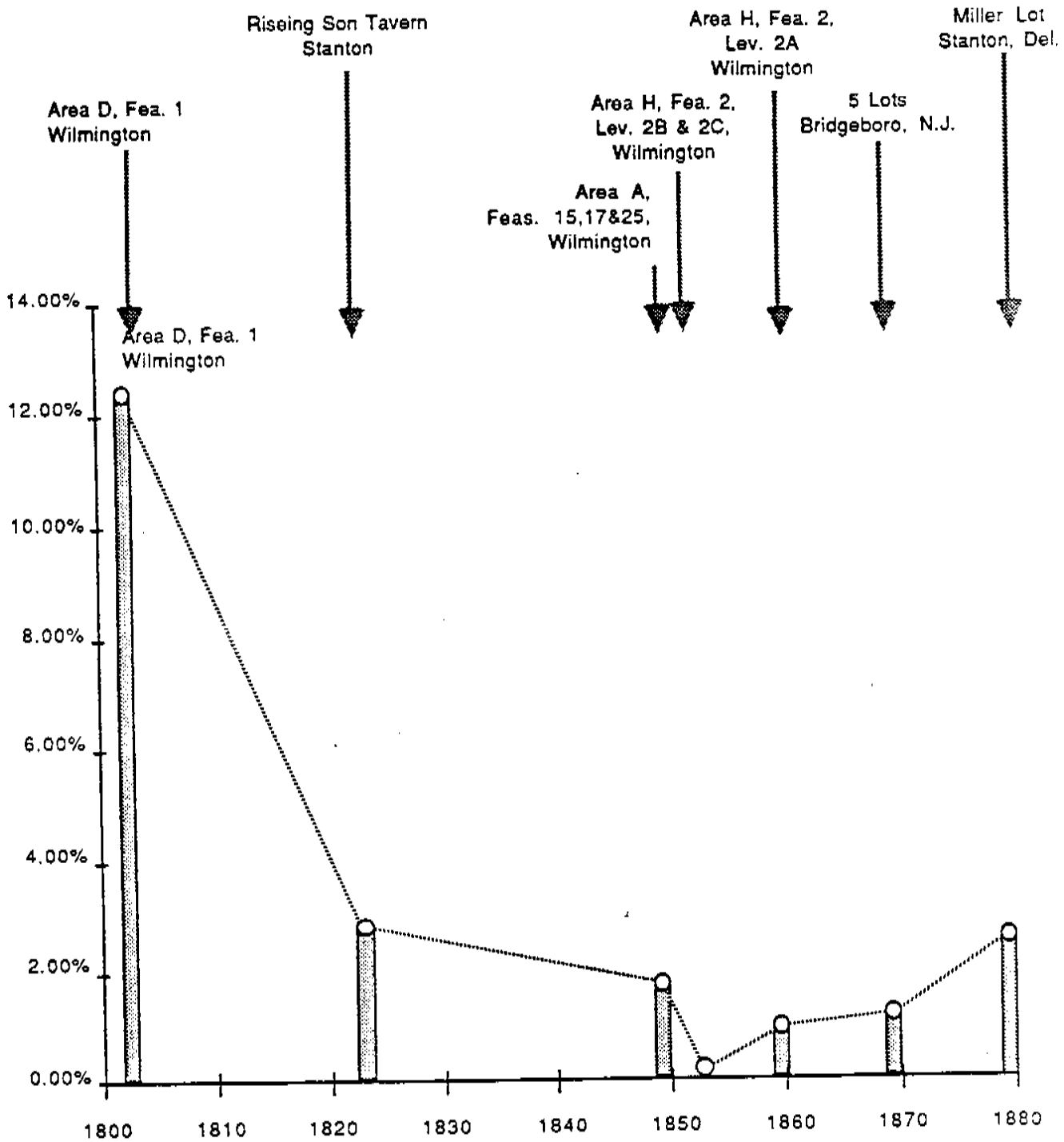


[The dotted lines connecting the data points represent directional trends for each type, rather than implying continuous variation. Sources: see text]

Figure 46

### Porcelain, Intersite Comparison

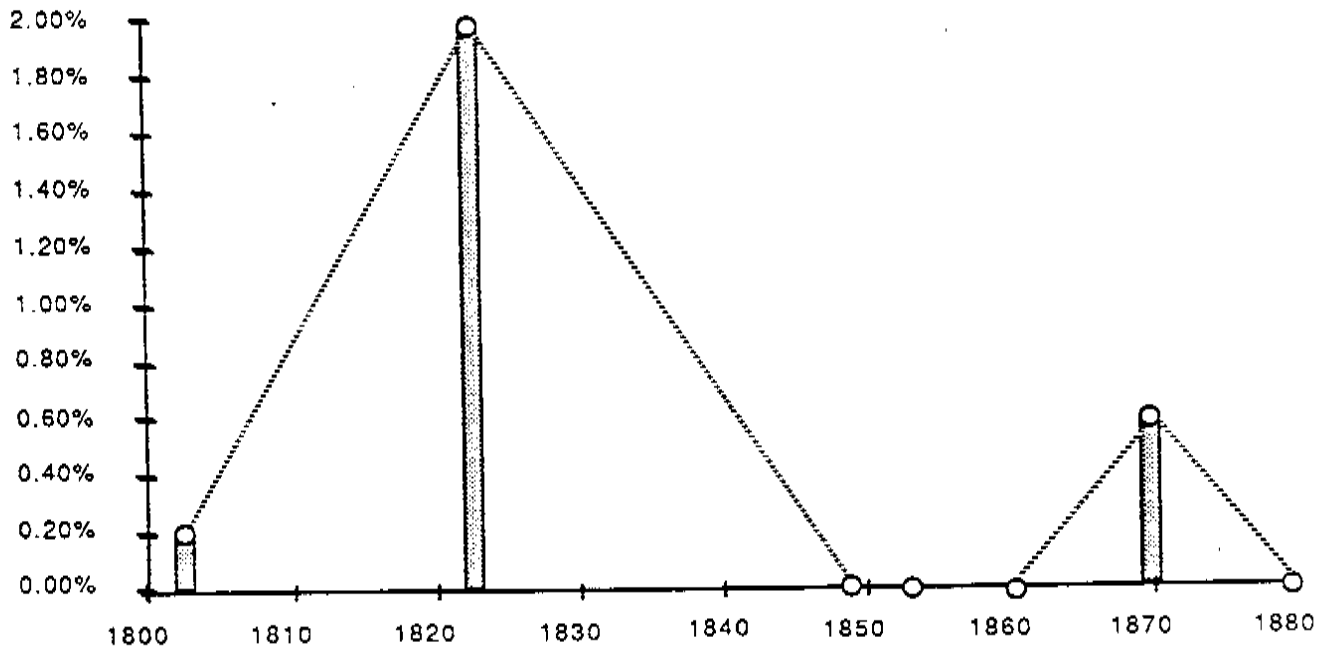
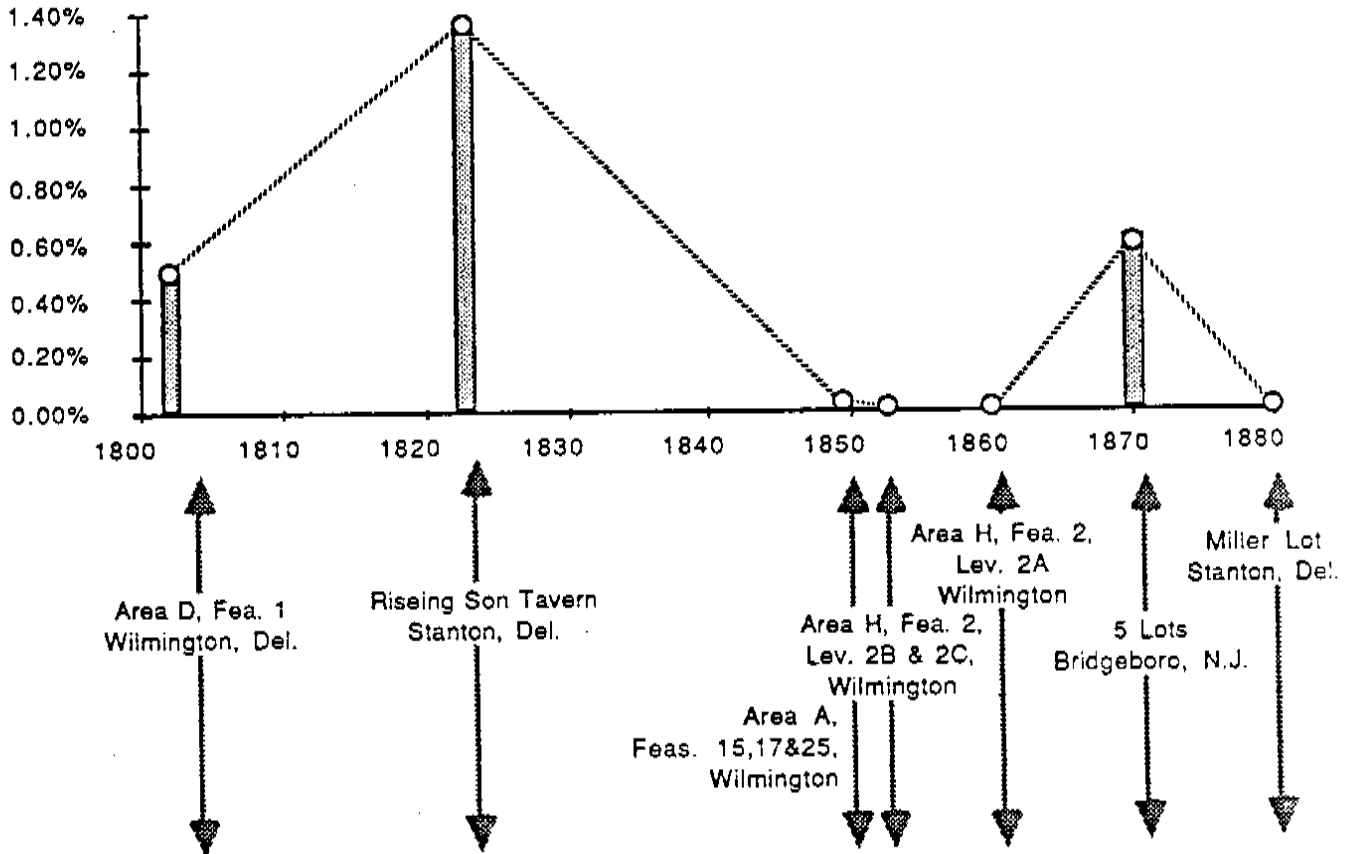
[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]





## Figure 47 Refined Stoneware, Intersite Comparison

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



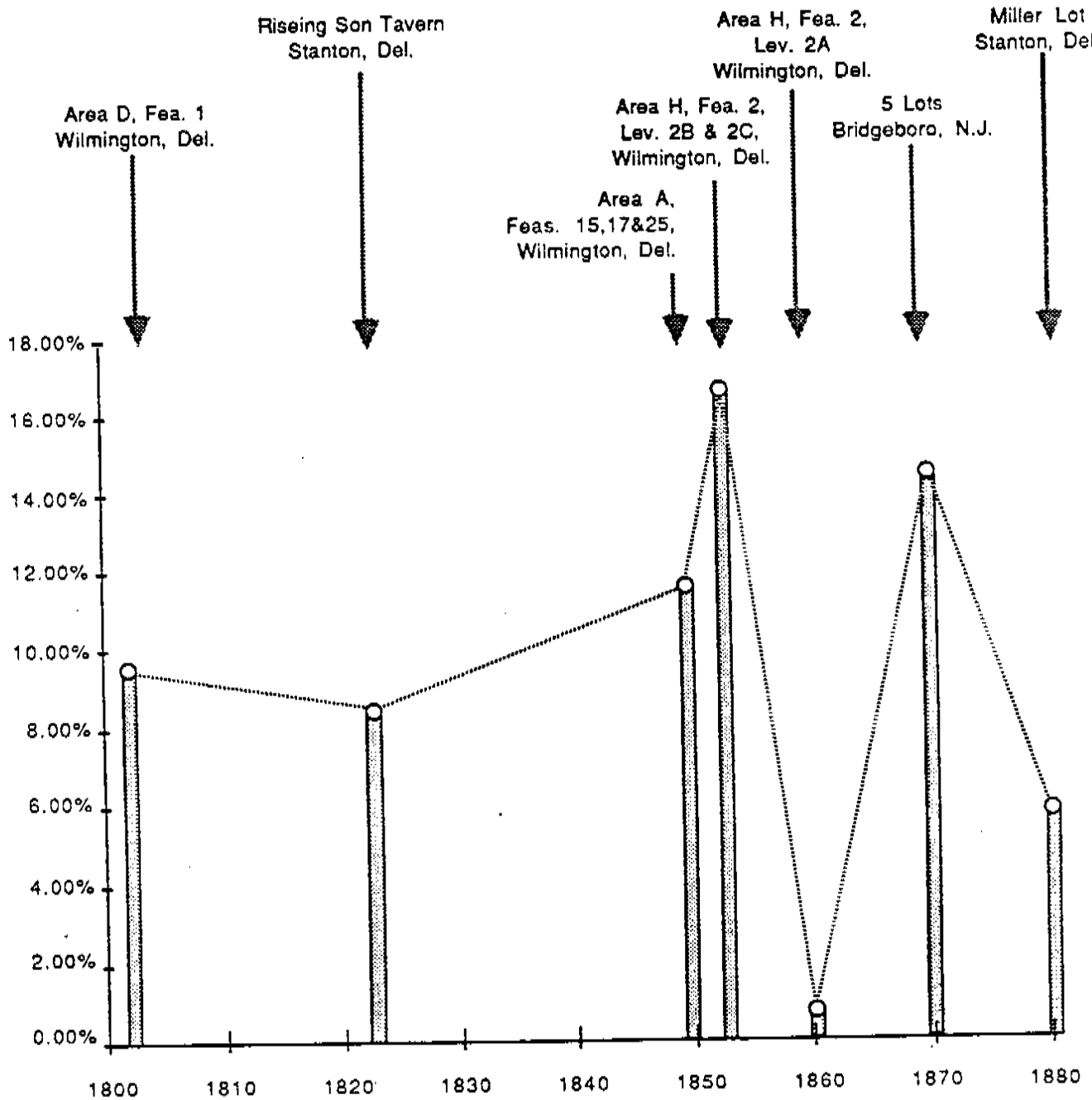
## Refined Redware, Intersite Comparison

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]

Figure 48

## Transfer Printed Refined White Earthenwares, Intersite Comparison

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



(Figure 49). The percentages of Minimally Decorated Refined White Earthenwares are also exceptionally high at Feature 1, Area D, and Levels 2B and 2C (combined) of Feature 2, Area H, while the value for the Riseing Son Tavern is the lowest on the graph, although the lowest five values are within four percentage points of each other (Figure 50). For the Undecorated Refined White Earthenwares, an extremely high value is achieved by Level 2A, Feature 2, Area H, and this is coupled with an unusually low proportion of Coarse Earthenware at that provenience. If that extreme value is ignored, the Riseing Son Tavern once again has a percentage value near the median for all the contexts (Figure 51). For Coarse Stoneware, the Tavern has the highest percentage value, but its proportion of Yellowware is below average (Figure 52) so these two types may be reciprocals of each other in function. As mentioned above, the Coarse Earthenware achieves its highest value at the Dowdall Features (Features 15, 17, and 25) at Area A, while the Tavern has the second highest proportion of this utilitarian type (Figure 53). Looking at each type there are no striking consistent trends up or down through time, while the fact that the rank orders are relatively similar is reflected in the moderately high Tau values.

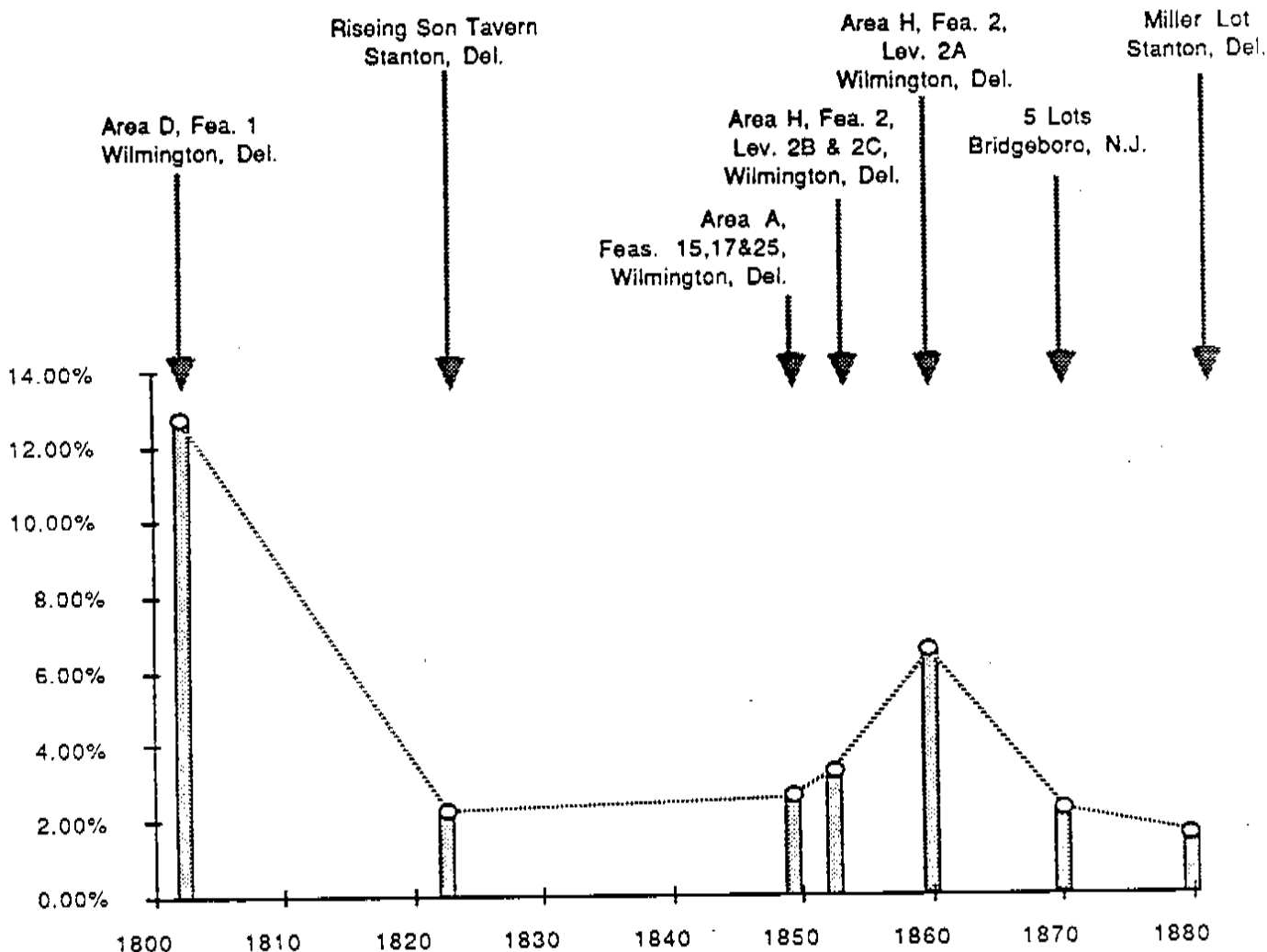
When the Refined White Earthenwares are examined as a separate group there is somewhat more variation than was observed across the separate contexts from the Tavern (Figure 54). At all of the sites the Undecorated Refined White Earthenwares are the most numerous, and at four of the sites (The Tavern, the Dowdall Features, Bridgeboro, and the Miller Lot) the types are ordered from most-to-least common: Undecorated, Transfer Print, Minimally Decorated, and Hand Painted. At the separate horizons in Feature 2 (Level 2B and 2C combined, and Level 2A) and in Feature 1, Area D, Minimally Decorated rises to second place, although the distribution of the percentages from these remaining urban sites are not particularly similar to each other. While the most and least expensive types among the Refined White Earthenwares are most common at the Tavern Site, this is also true at the two village residential context groupings, Bridgeboro and the Miller Lot, from much later in the century, so site function is apparently not controlling the distribution of these types. In general Undecorated Refined White Earthenwares increases and the decorated types decline through the span of time covered by the sites examined here, but there is considerable fluctuation along the way.

Summary: Intersite Analysis - The distributions of percentages of artifacts within South's Functional types showed no clear patterning that could be correlated with site function, time, economic status or setting, but there was similarity between the different kinds of sites. It is possible that market forces are controlling the distribution of consumer goods, in particular, so that everyone ends up getting roughly the same kinds of items -- at least for those items that end up in the ground. Another possibility is that because the groupings of the functional artifact classes were developed by South from data sets that were largely from the eighteenth century, the proliferation of industrially produced goods after the turn of the nineteenth century provided more variation in the items available within each of the groups, rather than between them. Four of the seven sites examined here exhibit percentages of Activities group artifacts that are higher than South's Carolina Pattern and it is possible that a closer examination of the proportions of specific artifact classes within this and the other groups would reveal differences characteristic of particular site functions, even though these differences are not being revealed at the Group level. This is no more than to say that activities that rely

Figure 49

### Hand Painted Refined White Earthenwares, Intersite Comparisons

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



# Figure 50

## Minimally Decorated Refined White Earthenwares, Intersite Comparison

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]

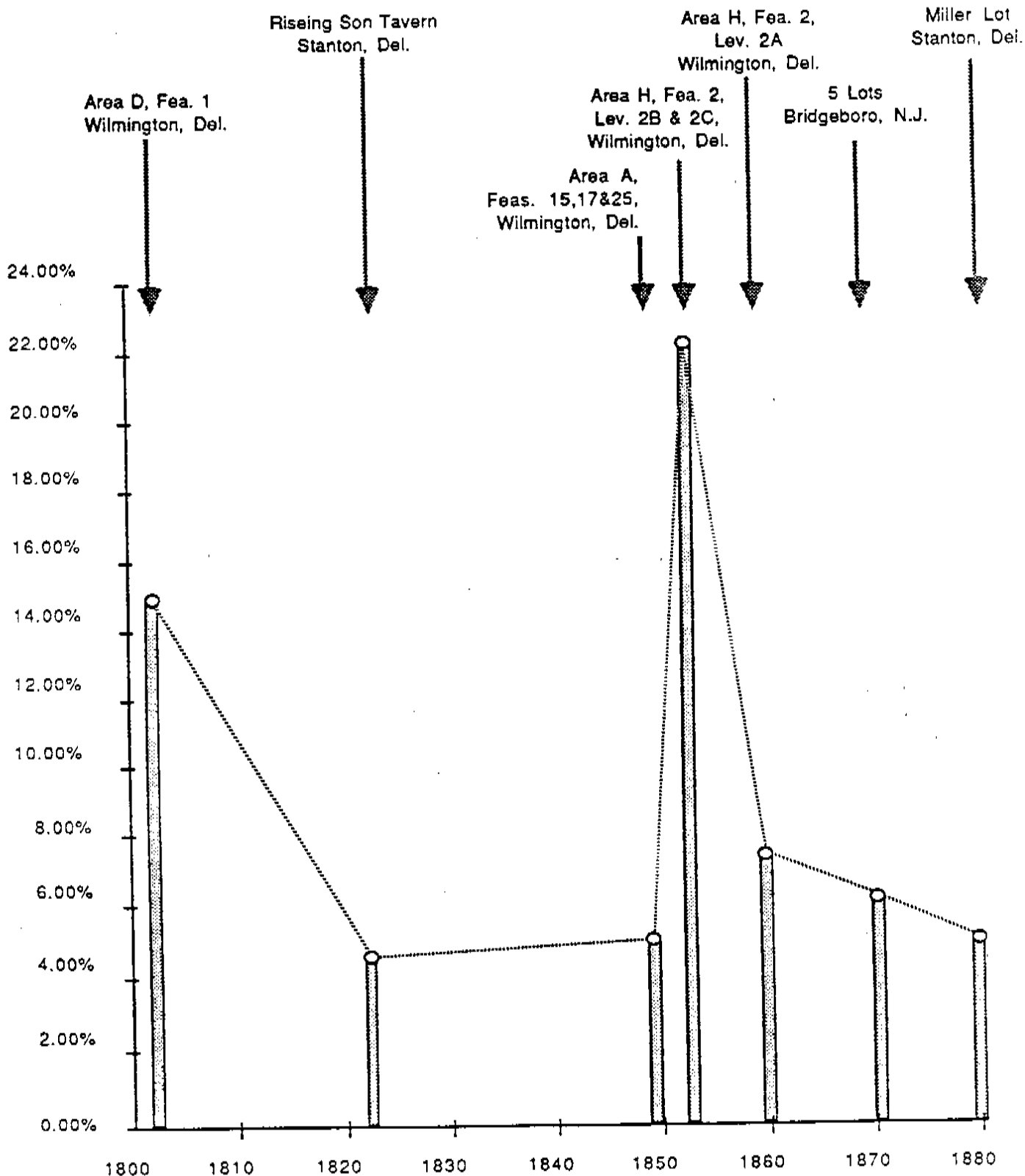
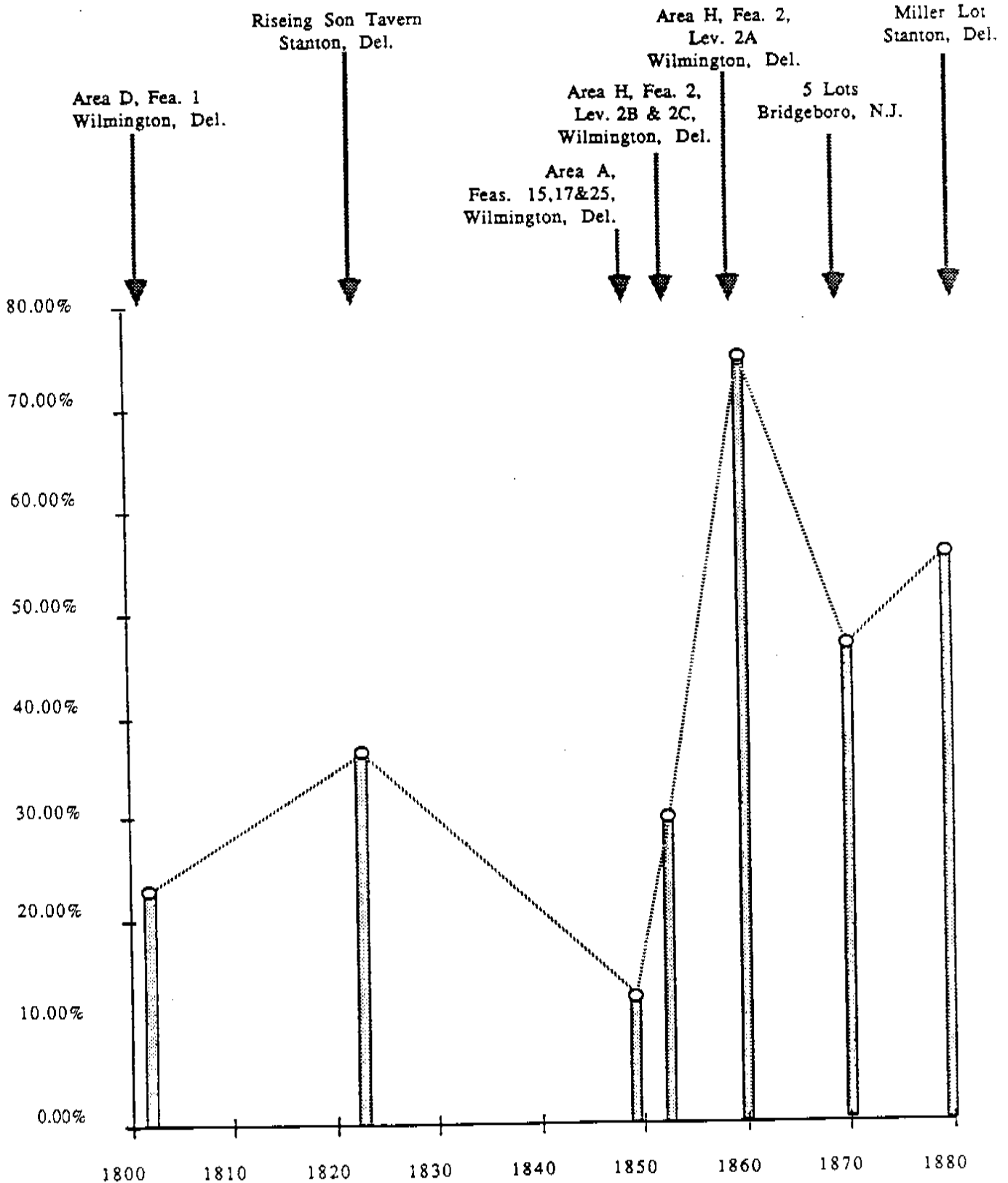


Figure 51

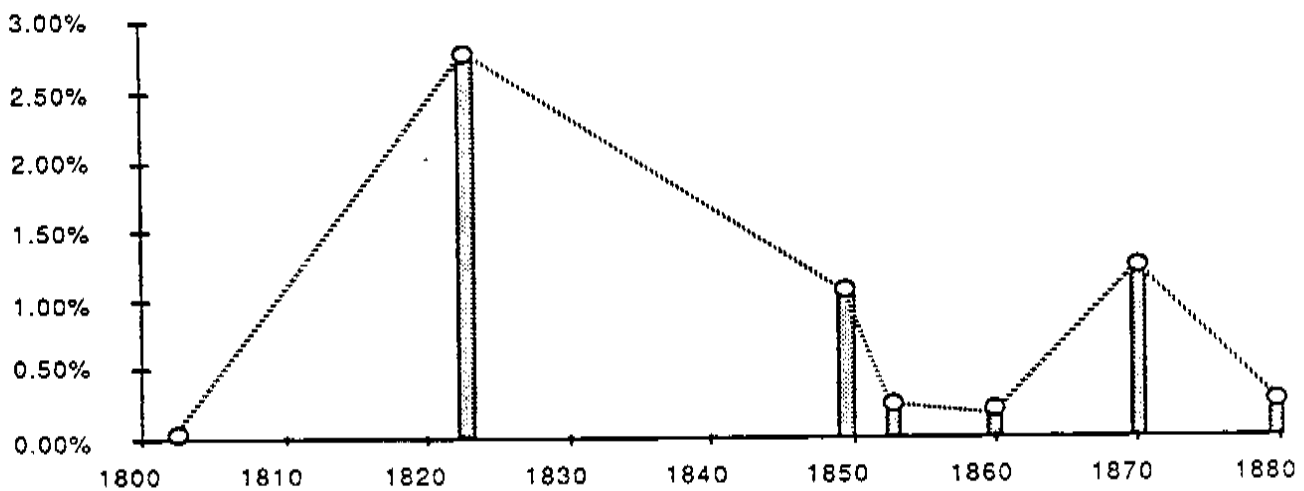
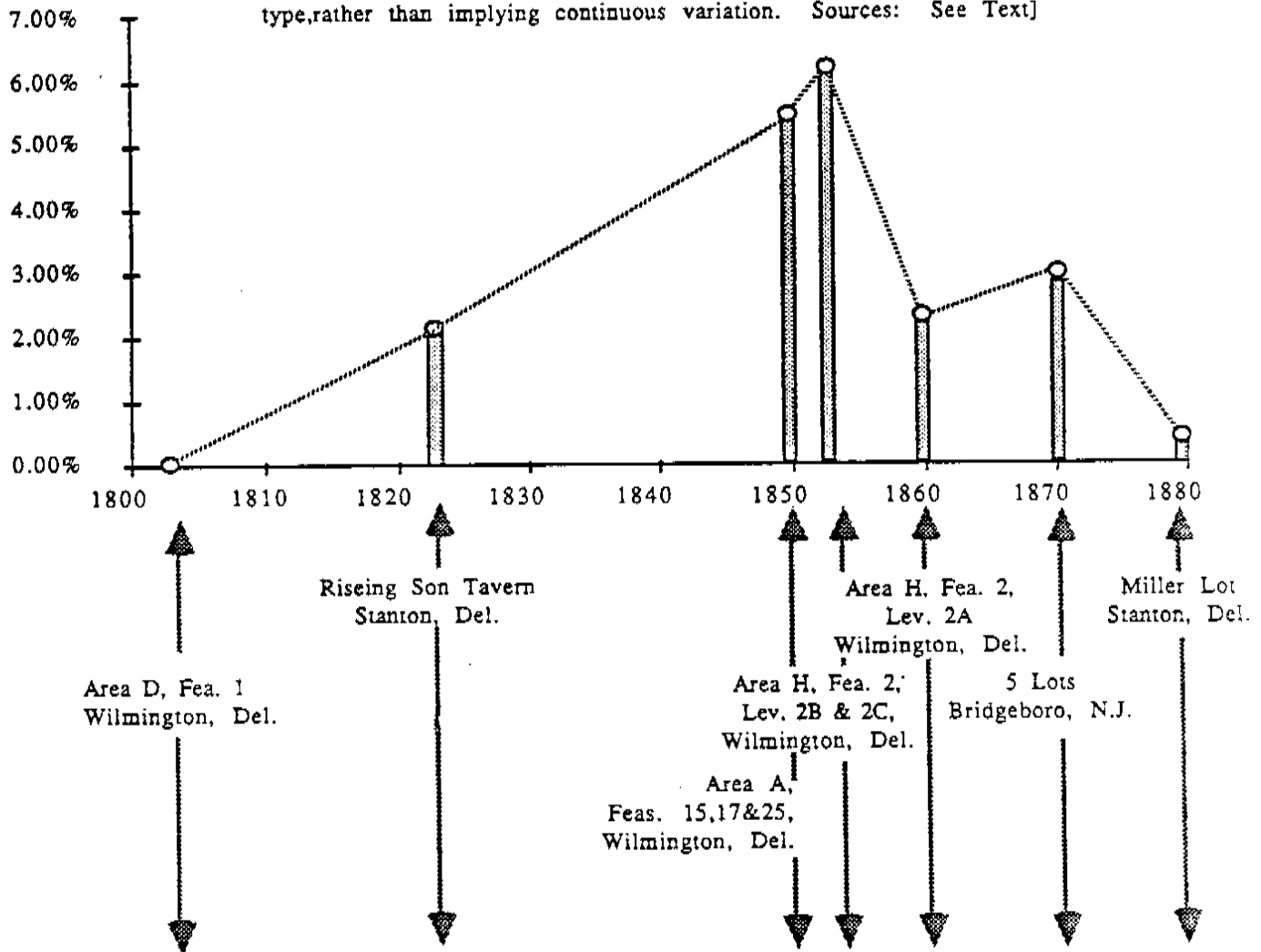
# Undecorated Refined White Earthenwares, Intersite Comparisons

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



## Figure 52 Yellowware, Intersite Comparisons

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



### Coarse Stoneware, Intersite Comparisons, Bar Chart

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]

**Figure 53**  
**Coarse Earthenware, Intersite Comparisons, Bar Chart**

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]

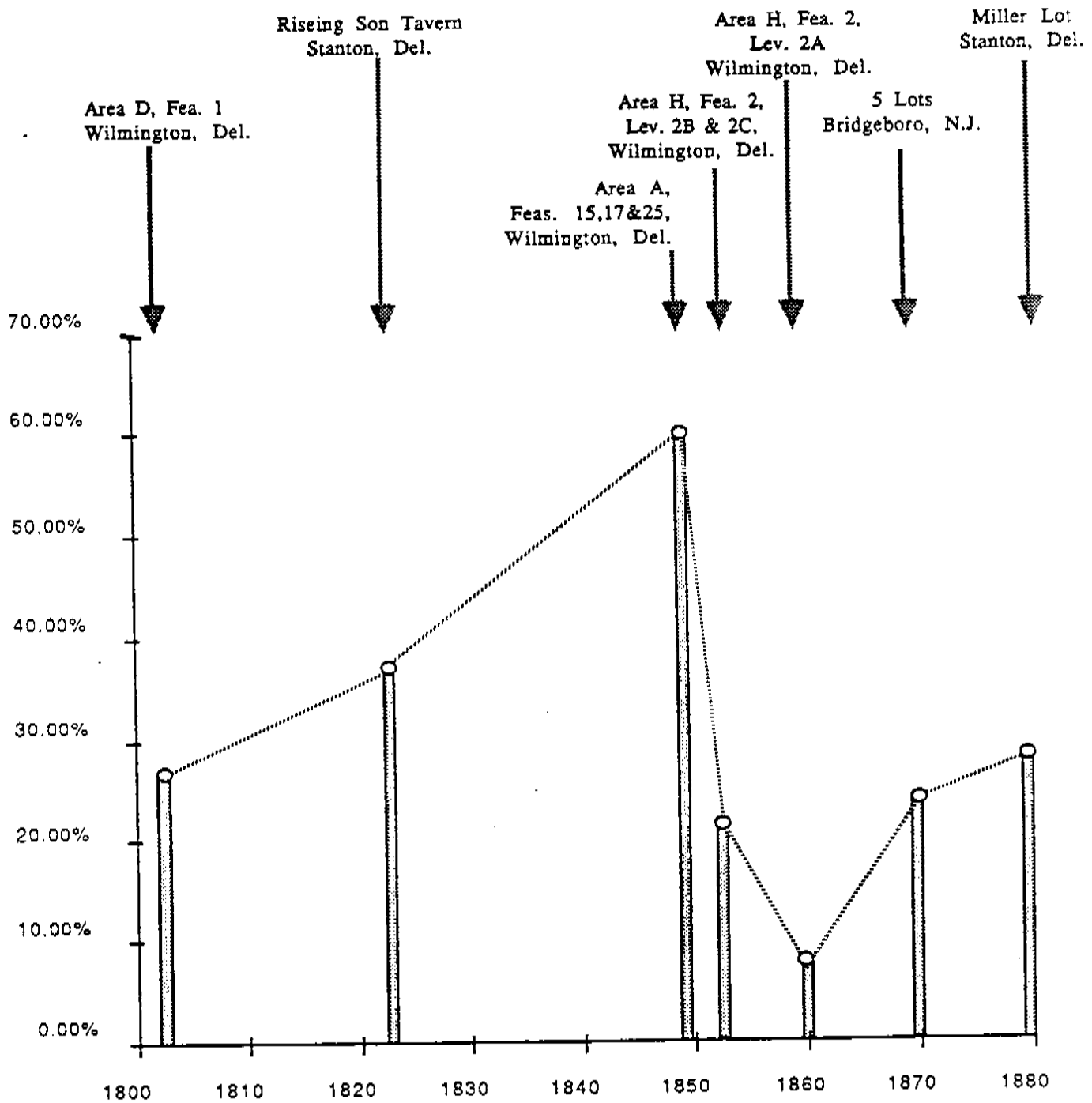
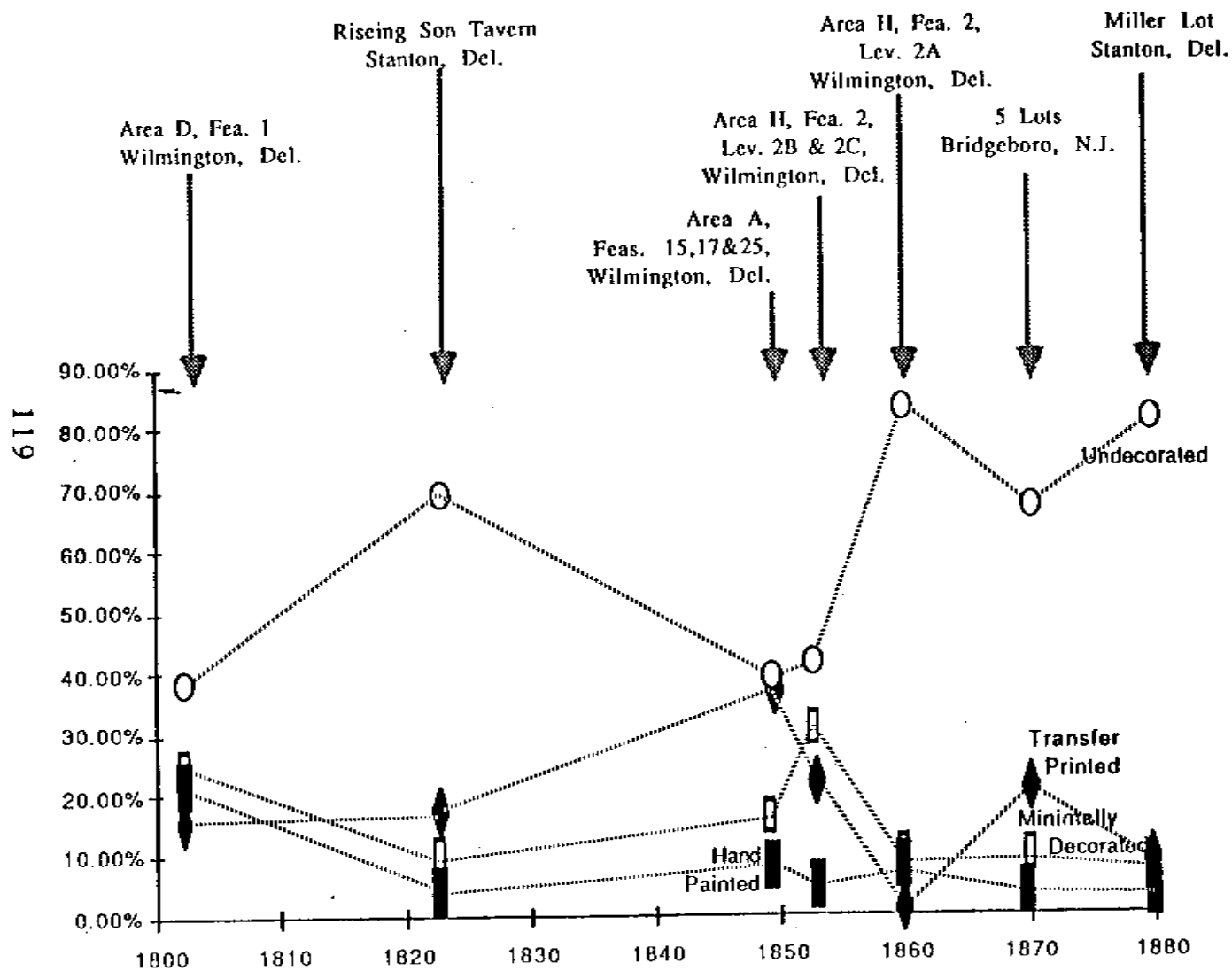




Figure 64

## Refined White Earthenwares, Only, Intersite

[The dotted lines connecting the data points represent directional trends for this type, rather than implying continuous variation. Sources: See Text]



on peculiar types of tools, or unusual quantities of common items may leave a characteristic "footprint" in the archaeological record as South predicts, and South provides an example with the case of the Public House-Tailor Shop in Brunswick Town (South 1977:102). In that case, the discrepancy showed up at the "Group" level, specifically the clothing group. For nineteenth century sites, with more specialized functions we should probably look within the "Activities" group to find the site attributes that are distinctive.

An additional observation concerning the tavern may be made. It seems to have been typical for tavern operators to live at their places of business, judging from the wording of the license forms. The tavern therefore combines a residential function with its primary business activities. The latter, however, are not significantly different from the activities at a normal domestic site -- food processing, consumption, sleeping, team and stock maintenance, etc. -- just presumably more intense, serving a larger number of people. The lack of distinction between ceramic assemblages at taverns and typical farm sites has been noted by Feister (1975:14), and the fact that the Robinson Coefficient measures the greatest similarity in functional groupings between the Riseing Son Tavern and the nearby farmstead, the William Hawthorne site, tends to support this view. While this is true for the artifact percentages, it may be recalled that the inventories showed contrast in certain specific items like furniture and linens. Differences in the proportions of these items is not likely to be apparent in the archeological record. Our hypothesis that the most and least expensive of the ceramic wares would be present in larger proportions appears to be true at only a very marginal level, and the pattern of proportions is not sufficiently distinct that an assemblage of unknown origin could be assigned the Tavern Function on that basis alone.

Two of the three hypotheses posed in the Research Design for this project depended directly on the artifact analysis. As the preceding discussion indicates, the expectation that clear differences would be observed between the assemblages from the Riseing Son Tavern and those from domestic and urban sites was not met. In fact, when the percentage distribution of South's Functional Groups is examined, the Tavern is most similar to the Hawthorne site, a high status rural, residence. The problem of commodity flows could not be realistically addressed because of inadequate samples of source-identified items. Some additional discussion of these research projects will be given in the next chapter.

## Notes: Artifact Analysis

<sup>1</sup>"Field Specimen" numbers were assigned to the materials from each provenience in the field, continuing the numerical sequence begun during the survey and testing phase of work. Accession numbers were obtained from the Delaware Bureau of Archives, History, and Historic Preservation for marking on the artifacts, which will be turned over to the Island Field Museum for maintenance and curation.

<sup>2</sup>A two digit computer coding allocation was made for the provenience groupings, and, for reasons that are entirely arbitrary for the purposes of this discussion, "thirties" range was convenient for the first digit, except for Feature 99. All of the artifacts collected at 7NC-E-65 are included within the provenience groups 31 through 38, and Feature 99.

<sup>3</sup>There are more dated types whose medians are available for inclusion in the calculations, that are from the eighteenth century. When the quantity of types more common in the nineteenth century (such as pearlwares and Whiteware) is larger, the Mean Date is skewed later while only small quantities, or even single occurrences of earlier types can draw the bracket date earlier since it is not weighted by quantity. South provided dates for pearlware from the perspective of the eighteenth century sites with which he was dealing. The decorative and other attributes for this class of ceramics grade imperceptibly into groups such as "Whiteware" and "Ironstone", so the assignment of a particular sherd or sherds to a "Pearlware" dated type group may be marginally accurate as far as the attributes of the sherd are concerned, but may be placing it in a statistical position that is earlier in date than the actual date of its manufacture. We do not propose to solve these problems here -- only acknowledge them and account for their effects on the analysis.

<sup>4</sup>In South's discussion of the use of the Carolina Pattern, he formalizes one of the conclusions that he draws into the "Law of Behavioural By-Product Regularity":

The by-product of a specified activity has a consistent frequency relationship to that of all other activities in direct proportion to their organized integration (South 1977:122).

In the same sentence he identifies this as both "an empirical generalization" and a "basic assumption", and this is consistent with his view of the cyclical relationship between induction and deduction, as outlined by Kemeny (1959:86 - South's illustration, 1977:15, Figure 2, is both whimsical and accurate).

<sup>5</sup>The notable exception is the continued presence of Yellowware mixing and baking dishes in the kitchen.

<sup>6</sup>It must be emphasized again here that the ceramics collected from the Riseing Son Tavern site were very fragmentary, so that the analysis of vessel function based on vessel size and shape was not possible. There are numerous obvious exceptions to the implied functional consistencies in these ware type groups, such as the use of all the ware types for chamber ware, but in the absence of vessel data this is the best that can be done. Yellowware was produced in a range of paste hardness, but was most commonly fired harder than the coarse earthenwares for use in the oven and for storage.

<sup>7</sup>This system does not take into account decorations that are the result of plastic molding or modelling that produces designs in the body of the ceramic vessel. These may be produced by "jollies" or lathe-turning, by bat-molding against plaster of paris of molds, or by slip casting in similar molds. All these methods were in common use by early in the nineteenth century (Barber 1902), and, although a considerable variety of kinds of patterns were produced, they apparently did not affect the sale cost of the ceramics, or did so only in combination with the application of colored surface decoration, judging from Miller's (1980) research.

<sup>8</sup>In doing the calculations for the Riseing Son Tavern, the values used in the original study were recalculated and the results obtained varied, in some cases, by a fraction of a percentage point from those in the original. This is apparently because the sum of the three classes of items shown in their Table 1 (Rockman and Rothschild 1984:118) for the Wellfleet Tavern is 37,681, rather than 37,691, as they indicate. The discrepancy is obviously too miniscule to affect the interpretation of the results of the analysis.

<sup>9</sup>An additional decorative type, decalcomania, is included in the breakdown here, because it appears at the Miller Lot and at Bridgeboro, New Jersey. It is a more elaborate method of transferring a design than the tissue transfers from copper plate engravings, and does not commonly appear until around 1900 (Wegars and Carley 1982:6-7), but the type has been included in Tau calculations for comparisons between the Bridgeboro samples and other sites, so it is included here even though it would not be expected to occur at the earlier proveniences.