further from the central core of the city, never achieved the residential status that the other three block faces did. Throughout both the mercantile and industrial periods, the block's population was remarkable homogeneous. Only near the turn of the nineteenth century were a significant proportion of the inhabitants foreign-born. This trend did become increasingly more common in the twentieth century.

In terms of social status, the Second Street face and the King Street face were always considered to be the better locations for residences. Front Street held this position in the middle of the eighteenth-century, but the other two block faces soon predominated. The French Street block face was not considered a good residential area at any time in its history. Corner lots during both the mercantile and industrial periods were choice locations, regardless of block face.

The early history of the block witnessed a proliferation of absentee landlords. This trend was reversed in the nineteenth century, with owner-occupied houses peaking about 1860. After that time, a steady decline in the number of owner-occupants occurred into the twentieth century.

DATA COLLECTION AND ANALYSIS METHODS

Documentary Research

Documentary research in deeds, Wilmington City Directories and tax assessments was carried out primarily in order to identify the occupants of the house lots on Block 1191, and to gather information concerning social and economic characteristics of the households for which archaeological evidence was collected. The following is a discussion of the document sets used and the methods of data collection and analysis.

Deed Research Methods

The first step in tracing the chains of title for lots on Block 1191 was to consult the Wilmington City Registry Books in the Office of Public Works, City-County Building, Wilmington. These books were begun around 1874 and contain property line drawings of each block with boundary measurements and a record of lot ownership from at least the transaction resulting in the 1874 owner's possession of the property to the present. The deed book references are not included, but the list of names and dates helps fill in gaps in the chains of title obtained from deed records.

The tax assessor's office, also in the City-County Building, has modern maps of city blocks with current property boundaries. Their records also provide the deed reference for the latest

property transfer, thus giving the researcher a place to start in the deeds. Deeds and other property transfers, such as transfers by will or auction, were traced for each property on the block. Chains of title were frequently broken, but could usually be picked up again. As soon as it became clear which lots would be the focus of the study, those lots were concentrated upon and it is their chains that are most complete.

All information contained in a deed was recorded. Standard entries were seller (Grantor), and buyer (Grantee), date of transaction, price, boundary description, and a back-reference to the previous transfer. Sometimes the description included walls or fences and information concerning structures on the property. The deeds provide the information necessary to divide the block into its constituent parts and to begin evaluating property use. In addition, the names of the property owners could lead to other transactions, such as wills or inventories of estates, in which tenants' names were occasionally listed. Also wills might indicate that the property owner was also the occupant of a property. Indications of occupancy such as these are of importance, especially in the eighteenth and first half of the nineteenth centuries when few other sources of this information are available.

Wilmington City Directories

Directories for the borough and city of Wilmington are extant at the Historical Society of Delaware for the years 1814, 1845, 1853, 1857, 1859/60, and 1862/63, and annually after 1866 to the present. According to the preface of the 1859 Directory, the first four directories listed here were the only canvasses done of Wilmington in the early- to mid-nineteenth century (two were done in 1857; one was strictly a business directory). Although the format varies through time, the information presented in the volumes is, for the most part, consistent. Each directory lists alphabetically the name, occupation, home address and business address (if different), the sex, and through 1870, the race of each head of household at each address in the city. A business directory and, after 1884, a block directory, serve as cross-indices for the name directory. An examination of consistency, year-to-year, of entries in the city directories shows that the most complete listings are in census years.

Recent work by urban, social, and economic historians (Knights 1971; Hershberg 1976; Thernstrom 1973; Warner 1968; Blumin 1969; Thernstrom and Sennett 1969) has shown the value of studying city directories. In these cases the directories have been used only as supplements to other sources of documentary information, such as census schedules, and the directories chosen for study correspond to either federal, state or local censuses. These studies, while of interest to historical archaeologists, do not present a useful methodology that can be applied to an

archaeological situation. Thus a methodology for the use of city directories specific to this project was devised.

Previous archival research by DelDOT in the project area (Cunningham et al. 1984) used the city directories to gather information on the block occupants for four separate years - 1862, 1872, 1881, and 1890. These decennial listings are similar to the types compiled by the social and urban historians noted above. Using these listings as midpoints, information from the two preceeding directories and the two subsequent directories was compiled. Thus we were able to create four, five-year groupings of years for the inhabitants of the block. These groupings were of contiguous years, except for the 1862 grouping, where contiguous directories do not exist. In this case, the listings for 1857 and 1859/60 were compiled, as they were the next closest directories. In addition, the 1814, 1845, 1853, 1901, 1910, and 1920 directories were also examined and compiled. Table 4 is a complete listing of those directories used for this project.

Table 4

City Directories Studied

1814	1857	1870/71	1879/80	1888	1901
1845	1859/60	1871/72	1880/81	1889	1910
1853	1862/63	1872/73	1881/82	1890	1920
	1866/67	1873/74	1882/83	1891	
	1867/68	1874/75	1883/84	1892	

Through the use of these groupings, information concerning the persistence, mobility, movements, turnover, and status of the block's inhabitants will be derived. This site specific data can then be compared to previous city-wide social and demographic studies (Klein and Garrow 1984; Hoffecker 1974) and to other urban studies (Knights 1971; Thernstrom 1973; Hershberg 1976), and evaluated for patterns of similarity and difference.

City directories are valuable sources of social, occupational, and demographic information, and when combined with data derived from tax assessments, census schedules, probate records, and vital records can be extremely useful. As Knights (1971) has noted, however, they should not be taken at face value and should be used with caution. During the course of this research, several problems arose concerning the uses of the directories and the accuracy of the information which they contain. In the hopes that future researchers should not encounter the same difficulties, or at least will be aware of them, these problems are outlined below.

Under the broad category of human errors, five points of difficulty were encountered. Human error in this case is defined as the present researcher's errors, as well as historic or contemporary errors--those caused by the directory publishers or canvassers, the block inhabitants, and the geography of Wilmington. The sheer volume of names within the directories, which averaged over 12,000 names,for the names between 1860 and 1890, and the small number of block occupants' names within the books, averaging 50 per year for the same period, represents the first of these human errors. Some names may have been inadvertently missed by the researchers during compilation. This error is somewhat offset, however, because of the year-grouping method employed--a name which shows up in the first book, not in the second, but again in the third, at the same address and with the same occupation, was probably missed by the researchers in the second book. The grouping shows him to be a continuous resident for the period, thus negating the inadvertent missing of the name in one directory.

The canvassers and publishers of the directories are a second source of error. A missed address, an incorrect occupation, or a mispelled name were all quite possible errors, as the publishers, in every directory that contained an introduction or a preface, indicated. A case in point is one of the occupants of 112 East Second Street. Between 1889 and 1892, this man's name was listed at the above address (twice in 1892) with four spelling variations - Lewis Slawter, Louis Slauter, Lewis Slaughter, and Louis Schlotter - and two occupations.

The publishers and canvassers were not the only sources of contemporary errors. Often the city's occupants gave incorrect information. In the introduction to the 1853 edition, it was noted that misspellings occurred because of the "impossibility of procurring the correct orthography from those whom it was necessary to rely on for the information." Residents of the city were required to notify the publishers if they were moving, to avoid having an incorrect address in the directory; often this was not done. Finally, some residents were suspicious of the motives behind the directories. The publisher of the 1866/67 edition lamented that "some people insist on connecting us with the U.S. Internal Revenue, and consequently make themselves out to be `only poor laborers,' when in fact they are well to do mechanics." (Directory 1866/67:iii).

A final source of human error was in the numbering system used in Wilmington. Prior to 1859, the houses were numbered consecutively from the Christiana River northward and from Market Street east and west (Young 1940). This meant that, if a new building was erected, all subsequent buildings going up the street would have to be renumbered. After 1859, the present day decimal system of numbers (100 block, 200 block, 300 block, etc.) was introduced. The project block became the 100 block, thus making directory research easier. Conversely, the directories

published prior to 1859/60 (the first year that the new number system was used) are of dubious value, some listing street numbers which bear no relation to later or earlier directories, and one, 1845, listing no house numbers at all.

Another major category of errors were those caused by the nature of the directories and the uses they were originally meant for. All directories only record the heads of households at individual addresses. Thernstrom (1973:287) has found that the directories of Boston did not deliberately exclude "men on the lower rungs of the social ladder," but Blumin (1969:170) and Warner (1968:227) found that the directories of Philadelphia did not include journeymen, and were unreliable in listing unskilled workers, female occupations, and male and female factory operatives. While it has not been determined whether this is the case in Wilmington, it should be assumed that the directories of Wilmington did not include all portions of the city's population, and are therefore not totally representative of the city.

Related to this point is the fact that the majority of directories were business-oriented. The Wilmington directories contain advertisements on almost every page. In an era of poor intra-urban communications, this should be expected. Knights has found a distinct economic bias in the antebellum Boston directories, with persons taxed over $1,000 being more likely to be included than those taxed below that amount. He has also noted the inclusion (or exclusion, if you prefer) of persons based on ethnicity (Knights 1971:134).

As a final point, it should be noted that city directories represent "ideal censuses" rather than "actual censuses" of the population (Wrigley 1966:161). The directories listed those inhabitants who belonged at a particular address, or who might be expected to be found at that address when the directory was published. The directories were therefore not like censuses, which list the occupants of a dwelling at a single moment in time, but were lists of the residents of Wilmington for a particular period of time.

Keeping in mind these biases and errors, the city directories still afforded us with a great deal of useful information concerning the inhabitants of the block through time, their occupations, places of business, and addresses. Much of this data was not available in any other source.

Tax Assessments

In order to obtain documented socio-economic data concerning the occupants of Block 1191, the Wilmington City Tax Assessments were extensively researched. The data gathered from this source were then compared to the data collected during the archaeological testing, and to information gathered in other

archaeological research in Wilmington (Klein and Garrow, 1984; Frielander et al 1985). These lists are located, both in original form and on microfilm, at the Delaware State Archives, Hall of Records, Dover, Delaware.

Tax assessments for the Borough and City of Wilmington are extant at the State Archives for the years 1834 to 1910. Prior to that time, Wilmington was not collected separately, but was considered part of Christiana Hundred. Tax lists for Christiana Hundred that were consulted cover the time period between 1776 and 1834. The assessment years that were collected ranged between 1776 and 1892. Tax lists for Wilmington vary considerably in regards to the types of information that the tax collectors recorded. The years chosen to be studied were selected from the available lists on the basis of 1) a correspondence with another documentary source, such as a city directory, to serve as a cross-check, 2) the quality and amount of information that the individual lists contained, and 3) a research requirement that each decade, if possible, be represented. With these criteria in mind, a total of sixteen lists were collected. Table 5 is a list of those assessments that were collected for the project.

Table 5

Wilmington City Tax Lists Studied*

1776	1785	1820	1868-72
1778	1798	1845	1877-81
1779	1803-04	1857-61	1881-85
1781	1816	1866	1892

*Available on microfilm at the Delaware State Archives, Hall of Records, Dover, Delaware.

Even within this sample, the types of information included or excluded were of variable quality. For example, the first five assessments (1776 through 1785) are listings of names and tax amounts only, with no information concerning structures, occupations, or tenantry recorded. Between 1798 and 1892 the lists are much more inclusive, containing useful and pertinent data such as the name of the property owner or tenant, a property description - including size and type of structure, occupation, and amount of tax to be paid. Table 6 is a summation of what types of information can be gathered from these assessments. It is intended to provide a general idea of which assessments

Table 6

Summary of Data Available in Selected
Wilmington Tax Lists

YEAR	NAME	ACREAGE	HOUSES & LOTS	LIVE-STOCK	SLAVES	PLATE	PERSONAL PROPERTY	PERSONAL TAX	VALUE	PROPERTY DESCRIPT.
1776	X							X		
1778	X							X		
1779	X							X		
1781	X							X		
1785	X							X		
1798	X	X	X	X	X	X	X	X	X	X
1803 -04	X	X			X		X	X	X	
1816	X	X	X	X	X	X	X	X	X	X
1820	X	X		X	X	X		X	X	
1845	X	X		X	X	X		X	X	X
1857 -61	X	X		X	X	X		X	X	X
1866	X	X		X	X	X		X	X	X
1868 -72	X	X		X		X		X	X	X
1877 -81	X	X		X		X		X	X	X
1881 -85	X	X		X		X		X	X	X
1892	X	X		X		X		X	X	X

Notes:

A Includes quantity of acres, improved, unimproved, buildings and improvements, and valuations.
B Includes houses on rent, lots on rent, valuations of the same, and houses and lots not on rent, and their valuations.
C Includes the number of male and female slaves, and their valuation.
D Includes weight and value of plate.
E Includes the valuation of the property.
F Includes the value of the whole of the real and personal property and personal tax.
G Includes Address and description of the actual property, both buildings and lots.

contain what types of information. It should be noted that the column headings are presented as a research aid, and do not in all cases reflect the headings found in the assessments themselves.

There are several advantages in using tax assessments to document socio-economic ranking, particularly when compared to other types of documentation, such as probate records. First of all, assessments, unlike probate records (inventories, wills, and accounts of administration), are much more representative of the living adult male population as a whole. Main (1974) has suggested that probate records contain two biases that are not found in assessments: 1) the majority of probate records come from older, wealthier, adult male members of a free population, and 2) they do not identify all the non-probate members of the population. Probate records, when they exist, are fine for the study of an individual, but if information about a larger group of people is needed, probate records are insufficient and must be supplemented by other data. Tax assessments provide the wider population base needed to study socio-economic status. Finally, probate records show an individual at only one point in his lifetime -- death. Tax assessments often afford a researcher several "snap-shots" of an individual's life, showing different periods in his economic growth and social status. Thus, through assessments, a person's life can be traced through time and a more complete picture of his social and economic standing can be produced.

There are also several drawbacks that should be kept in mind when using assessments. There are often incongruities and inconsistencies in the assessments that may or may not be explicitly stated by the tax collector. These are usually related to the biases contained within the state or city tax system. Darroch (1983), in his study of Toronto, has noted that the bewildering variety of exemptions allowed in that city in the mid-19th century make the use of tax assessments extremely difficult. In Toronto, for example, those exempt from taxation included income earners below certain levels, all persons with property values at less than $100, annual incomes under specified (and annually changed) values, government, church, and educational properties, rental and real estate income, and capital investments in stocks and inventories.

A similar problem exists for Wilmington. In Wilmington, the city tax ordinances in 1857 established a poll tax for all free males above the age of 21 "at a capital not exceeding $2000 nor less than $250." By the same Act all real estate within the city was taxable at a rate of 6% per year on the estimated value of the property. By 1871 the rate of the poll tax ranged between $125 and $2000 for all male citizens above the age of 21, and by 1885 between $100 and $3000. The real estate tax was "according to a certain rate in and upon every $100 of the estimated value of the property assessed." (Ordinances of the City of Wilmington

1857:65 [hereafter cited as OCW]; OCW 1872:54; OCW 1885:89). A clear understanding of the city tax laws are therefore necessary to make sense of the changing nature of assessments, and why some item or property is assessed one year and not the next. This will be crucial if any meaningful interpretations are to be concluded from the study of assessment lists.

Assessment lists are not always inclusive of the population. This is often the result of the methods used by the assessors, the time of year that the assessment was made, and the impermanent nature of many of the individuals being assessed. In a number of cases for the block, names of individuals which came from the city directory for a specific year were missing from the tax rolls for the same year. Given that assessors in Wilmington were exempting a portion of the population whose income was below variably $125, $150. or $250, and given that a large percentage of the population -- perhaps as high as 60% -- were fairly mobile and impermanent, a possible explanation for this discrepancy between the tax lists and the directories could be the time of the year each was prepared. The date that assessments were to be completed varied between January and May, while city directories were usually compiled in early summer. The lack of inclusion of a name could therefore be the result of one of several factors, none of them explicitly stated.

Finally, as can be seen from the small sample size used for this project, assessments often do not contain data that are applicable to a socio-economic study. There were over 80 possible tax lists that could have been used for this project, but only 16 were found to contain the right types of information that could be of use. Since there are no indices to the tax rolls, a time-consuming method of looking at each of the lists was required. As a result, some decades are over-represented, while others are under-represented or not represented at all. This lack of material does not necessarily exist for other parts of the state. A similar study using tax lists of White Clay Creek Hundred found over 50 lists that were useful (Coleman et al 1984). Unfortunately, it is only through trial-and-error that the usefulness of these lists will be discovered.

Tax assessments can be used as cross-checks for city directories, and in other cases, as supplements to city directories. Used alone, tax lists are of limited value. When used in combination with city directories, censuses, probate records, and deeds, tax lists become part of an inter-related corpus of information of immense value for the study of past societies. It is only necessary to keep in mind the abilities and liabilities of the lists.

Censuses

All of the available census schedules for Delaware were consulted for this project. Each census was examined for the

names of the block inhabitants, and all information concerning these inhabitants was recorded. Table 7 is a summary of the types of information available in the Federal Censuses taken between 1790 and 1910, and that were recorded for each block inhabitant or household. In addition to the Federal Censuses, state censuses, taken in 1782 and 1790, were also consulted (Hancock 1983, DeValinger 1954).

It should be noted that both the state census of 1782 and the Federal census of 1790 are reconstructions from other sources. Their value is thus limited and subject to question.

Table 7*

Contents of Census Schedules 1790-1840 and 1850-1910

1790-1840	1790	1800	1810	1820	1830	1840
Name of head of family and number of free white males (within specific age groups) and free white females (age groups unspecified in each household)	Yes	Yes	Yes	Yes	Yes	Yes
Number of free white females, within specified age groups, in each household	No	Yes	Yes	Yes	Yes	Yes
Name of slaveowner and number of slaves owned by each owner	Yes	Yes	Yes	Yes	Yes	Yes
Number of male and female slaves, within specified age groups, owned by each owner	No	No	NO	Yes	Yes	Yes
Number of foreigners, in each household, not naturalized	No	No	No	Yes	Yes	Yes
Number of deaf, dumb, and blind persons, within specified catergories, in each household	No	No	No	No	Yes	Yes
Name and age of each person recieving a federal military pension	No	No	No	No	No	Yes
Number of persons in each household attending specified classes at school	No	No	No	No	No	Yes

1850-1910
(free inhabitants of each household)

	1850	1860	1870	1880	1890	1900	1910
Name and age	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Name of street and number of house	No	No	No	Yes	Yes	Yes	Yes
Relation to head of family	No	No	No	Yes	Yes	Yes	Yes
Month of birth, if born within the year	No	No	Yes	Yes	No	Yes	No
Sex, color, birthplace, and occupation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Whether naturalized or whether naturalization papers had been taken out	No	NO	No	No	Yes	Yes	Yes
Number of years in the United States	No	No	No	No	Yes	Yes	Yes
Value of personal estate	No	Yes	Yes	No	No	No	No
Value of real estate	Yes	Yes	Yes	No	No	No	No
Whether home and farm free of mortgage	No	No	No	No	Yes	Yes	Yes
Marital status	No	No	No	Yes	Yes	Yes	Yes
Whether married within the year	Yes	Yes	Yes	Yes	Yes	No	No
Month of marriage, if married within the year	No	No	Yes	No	No	No	No
Whether temporarily or permanently disabled	No	No	No	Yes	No	No	No

Whether suffering from acute or chronic disease	No	No	No	No	Yes	No	No
Whether crippled, maimed, or deformed	No	No	No	Yes	Yes	No	No
Time unemployed during the census year	No	No	No	Yes	Yes	Yes	Yes
Whether deaf, dumb, blind, or insane	Yes	Yes	Yes	Yes	Yes	No	Yes
Whether a pauper	Yes	Yes	No	No	Yes	No	No
Whether a prisoner or homeless child	No	No	No	No	Yes	No	No
Whether a convict	Yes	Yes	No	No	Yes	No	No
Whether able to speak English	No	No	No	No	Yes	Yes	Yes
Whether able to read and write and whether attended school within the year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birthplaces of father and mother	No	No	No	Yes	Yes	Yes	Yes
Whether father or mother of foriegn birth	No	No	Yes	Yes	Yes	Yes	Yes
Number of living children, if a mother	No	No	No	No	Yes	Yes	Yes
Whether soldier, sailor, or marine during the Civil War (U.S. or Conf.), or widow of such person	No	No	No	No	Yes	Yes	Yes
Number of years in present marriage	No	No	No	No	No	Yes	Yes
Number of children born	No	No	No	No	No	Yes	Yes
Mother tongue	No	No	No	No	No	No	Yes

* National Archives Trust Fund Board, 1983:p. 20-21)

The early censuses were difficult to use for this project because there were no cross-checks available, such as city directories or detailed tax assessments, that could be applied to them. Thus, the data gathered from the 1782, 1790, 1800, and 1830 schedules are of questionable value in that some inhabitants who may have been tenants on the block were excluded from our data collection. The 1810 and 1820 censuses have a much better reliability factor because they can be cross-referenced to the 1814 street directory. However, inadvertent errors could have occured in this source as well (see the discussion of city directory methodology). Beginning with the 1840 census, good cross-checks are available for the schedules, and the types of information recorded are progressively more detailed. All of the Federal Censuses are available on microfilm at the Hall of Records, Dover, Delaware, and censuses for the years up to 1880 are available at the Morris Library at the University of Delaware. The 1782 and 1790 censuses are published and available at most state repositories.

In addition to the major documentary sources listed above, the names gathered from those sources were looked for in probate records. This group of records, including wills, inventories, and administration accounts, when they are available, sometimes refer to the name of the tenant, if the lot is not owner-occupied. In cases where probate records can be found for a lot occupant, additional information on the household's composition and economic condition may be gathered.

The results of the documentary research on the Block 1191 inhabitants are discussed later in this report and the raw data collected are on file at the University of Delaware Center for Archaeological Research.

Archaeological Research

Archaeological research consists of fieldwork followed by laboratory processing and analysis. The methods used in the field and laboratory followed standard procedures which are described here.

Field Methods

Excavation on Block 1191 began by using a backhoe to strip off the overburden of demolition rubble, clay and sand fill, and asphalt down to the top of the nineteenth century yard levels. A 10' x 10' excavation unit was the standard unit, although these were not fully excavated in all cases due to variable depositional contexts. Excavation units were placed where most advantageous within the dimensions of house lots. No attempt was made to maintan an overall site grid because continuous backhoe work constantly changed the block's terrain, and spoil piles

blocked lines of sight. Units and features were, however, tied into the center lines of Second and King Streets, and thereby were related to a 0.0S 0.0E point at the monument in the intersection of those two streets (Figure 9).

Both features and excavation units were excavated in natural strata, unless the depth of a stratum exceeded 0.5 foot. In this case the stratum was divided into two or more parts, none exceeding 0.5 foot deep. This was done primarily to facilitate handling the large quantities of artifacts recovered, and to detect stratification within the deposit not apparent to the eye.

All non-fill levels were water-screened through 1/4" mesh screen, using fire hoses attached to a fire hydrant on the corner of the block. Soil and flotation samples of 250 ml. each were taken from contexts which showed evidence of organic remains having been preserved. In addition, smaller samples were taken from these contexts for parasitological and microbiological examination. In a few cases, such as those in which tiny fish remains dominated, all the material was collected from the screen and bagged to be sorted in the lab.

The artifacts and samples recovered from each provenience were given distinct, arbitrary field specimen numbers. These numbers remain associated with their respective artifacts and samples throughout processing and analysis.

Artifact Processing

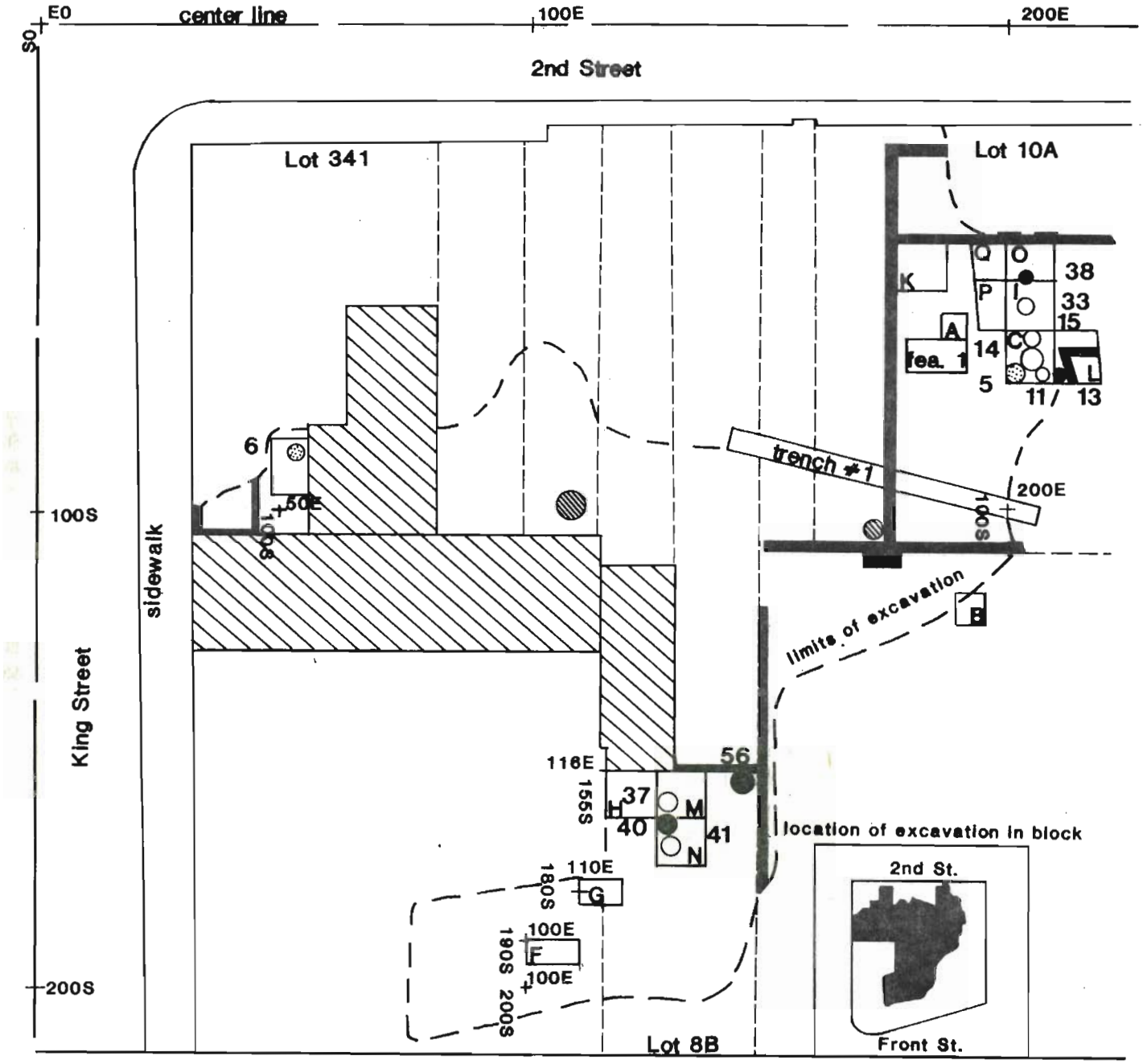
All artifacts, bone and shell were cleaned in the lab with plain water, or, in the case of deteriorating bone, damp-brushed. Bone and shell were then placed in labeled bags, while artifacts were themselves labeled with the site number (84-1) and three-digit field specimen number. Artifacts were sorted into categories for cataloguing based on their material composition or special association. For instance, prehistoric ceramics and colono ware were separated from the more general category of ceramics. All recovered remains, once identified and catalogued, were classified into groups according to their function in everyday human activity. The classificatory groups follow Stanley South's schema for pattern analysis, with additions made where necessary (South 1977:95-96).

The specific treatments and cataloguing procedures used for different sets of artifacts and other remains are described below. Examples of the catalogue and analysis forms are contained in Appendix V.

Ceramic artifacts were catalogued on two different catalogue sheets, depending on their provenience. Ceramics recovered from closed contexts, such as privies, were catalogued on a sheet that allowed particularistic description of the sherds. These

FIGURE 9

Block 1191



were then coded to a set of standard descriptive terms for analytical purposes. The same codebook was used to catalogue ceramics from backyard strata. In these cases only attributes with codes were recorded on catalogue sheets. The ceramics from most proveniences were entered into a computer data base program. Only very small proveniences with few ceramics and contexts that were too disturbed to retain analytical value were omitted from the computerized data base. A copy of the Ceramics Code Book is included in Appendix VI. The ceramics were identified according to established typologies published by Noel Hume (1969) and South (1977).

Attributes recorded for each ceramic sherd, if identifiable were:

WARE - a combination of paste and glaze characteristics that serve to separate types on a basic level.

PLASTIC DECORATION - records decorations involving the paste of the ceramic item. Examples include bat-molded plate rim treatments such as shell- and feather-edging and overall ribbed decoration such as that found on some teapots.

COLOR OF DECORATION - refers to the color of painted, or otherwise applied, decoration, including slips and glazes.

APPLIED DECORATION - includes all non-plastic decorations, having to do with applied color.

VARIETY - records certain types of decoration, for instance a specific, named transfer print such as the "Willow" pattern.

SOUTH TYPE NUMBER - Stanley South codified the ceramics described by Noel Hume in A Guide to Artifacts of Colonial America (1969). These types are useful as time markers and are used in South's Mean Ceramic Date Formula. The numbered types found in the Block 1191 assemblages are contained in Appendix VI.

USE/SHAPE/FUNCTION - these codes classify sherds according to the shape of the vessels they belong to and the use to which the vessels are put. Examples are chamber pot and milk pan.

COUNT - sherd counts according to their positions on the vessel--rim, base, body, other (including handles and spouts, for instance), and total.

VESSEL NUMBER - in addition to provenience labeling, reconstructed vessels were assigned unique numbers to identify groups of mended sherds.

MILLER'S SCALING CATEGORIES - these categories are based on the cost-for-decoration indexes compiled by George L. Miller, (1980), plus additional ceramics not in Miller's scheme but which may be included in a hierarchical arrangement of ceramics.

DATE RANGE - range of time during which a particular type or variety was manufactured.

MEDIAN DATE - median date of manufacture, from South (1977), used to calculate Mean Ceramic Dates for the early nineteenth century contexts (see section on dating).

The attributes recorded place the sherds in chronologically sensitive typologies, and provide the necessary information for analyses of their distribution in use-related categories and cost-related categories.

The analysis of ceramics in use-related categories is based on a similar analysis exploring the relationship of ceramics to socio-economic status in Alexandria, Va. (Beidleman, et al. 1983). The analysis follows South's (1977) suggestions and John Otto's (1984) verification, that ceramic form, a combination of vessel shape and type, may be more sensitive to status differences than type alone. The cost-related analysis originated with Miller's cost index study (1980), modified from an index of white-bodied earthenwares to a hierarchical arrangement of all ceramic types by Beidleman in Alexandria, Va. (Beidleman et al. 1983) and expanded by Thompson in Bridgeboro, New Jersey (Thompson and Beidleman 1983), to include a statistical test (Kendall's Tau) of the hierarchical distributions found in different contexts. The Use Categories and their constituent shapes, as well as the Miller categories are listed in the Ceramic Code Book in Appendix VI.

Other artifacts were identified and catalogued with emphasis on time-sensitive attributes and use-related descriptors in addition to other attributes serving to distinguish artifact types. In addition to the catalogue, all artifacts were classified and tabulated according to South's (1977) functional group and class classification system. The list of groups, classes, and types used by South, with the additions made for the Block 1191 project is contained in Appendix VI. This system provides a convenient and lucid method for presenting the entire assemblage of artifacts, faunal, and floral remains recovered from a site. While each category may not be directly comparable to all others, it is useful to see, for instance, that one barrel privy contains only half the number of bone fragments that another contains. Comparisons between assemblages of artifact frequencies in some categories have proven useful in illuminating different patterns of site activities, either within a site, or between sites (see South 1977; Otto 1984; Deagan 1983). In the present report, these compilations are used to discuss the remains recovered from Block 1191 and the patterns of activity taking place there.

Organics and Metals Conservation (by Keith Doms)

The Block 1191 excavation recovered many artifacts made of metal, bone, cloth, leather, and wood. All of these types of artifacts require treatment to either become (in the case of corroded metals) or remain identifiable. The conservation was supervised by Dr. Luis Torres and performed by Keith Doms. Ms. Claudia Deschu compiled "A Guide to the Materials and Techniques of Artifact Conservation" guided by the types of problems encountered with the Wilmington artifacts. Her procedures were developed with Dr. Torres's guidance and these were the treatments applied by Mr. Doms.

Each artifact receiving treatment beyond manual cleaning was described and its treatment recorded on the "Registration and Conservation Treatment Form." A completed example of this form is included in Appendix V.

Due to the limited facilities and time, it was decided that of all the various organic and badly deteriorated wood and metal artifacts only the most significant artifacts were to be conserved. The rest of the artifacts were cleaned and stabilized as opposed to more complete forms of conservation/restoration. The more complex procedures used on selected artifacts are recorded on conservation forms (Appendix V). The rest of the material that was conserved, mostly leather, followed by textile, then metal, was treated with set procedures established by Professor Louis Torres.

The following is an outline of the general conservation procedures that were used for leather, textile and copper, the most frequent materials conserved.

Leather:

1) Washed in warm water with Lysol and Betadine Scrub so as to clean the leather and inhibit bacterial and fungal growth.

2) Rinsed leather so as to remove soap and dirt.

3) Shoe soles were measured or traced.

4) Complete or mostly complete shoes and other nearly intact leather items were painted daily with a 30% PEG 1500 solution that contained 30% isopropyl alcohol, 30% distilled water, and 10% Lysol for no fewer than 5 days. The more fragile or heavier the leather the more days of treatment were allowed.

5) Individual soles, those with no other corresponding shoe parts were traced and then allowed to dry slowly between 2 pieces of 1/4" mesh so as to retard curling.

6) Miscellaneous leather scraps were cataloged and allowed to dry slowly.

Textile:

1) The pieces of textile were carefully placed and spread out between 2 pieces of fiberglass window mesh. They were then washed in a weak detergent solution (1 g/l Triton x-100).

2) After washing, the textile was washed in a 3% solution of acetic acid so as to cut the detergent and shorten the rinse time.

3) The textile was then rinsed 3 times.

4) The textile was removed from the mesh, and while still wet, painted with a 5% solution of Rhoplex. Extra coatings of Rhoplex were applied to fragile and heavy pieces of textile.

5) The textile was then allowed to dry slowly.

Copper and copper alloys:

1) Badly corroded copper, especially those pieces which had bronze disease, were first gently cleaned with water.

2) The copper was then rinsed with acetone to deacidify it.

3) The objects were then submersed in a bath of 5% sodium sesquecarbonate that was tested weekly for salts. If the test was positive, the artifact was resubmersed in a fresh solution of sodium sesquecarbonate for another week. If the test was negative, the copper artifact was removed, rinsed with distilled water, then allowed to dry.

Faunal Methods (by Edward Otter)

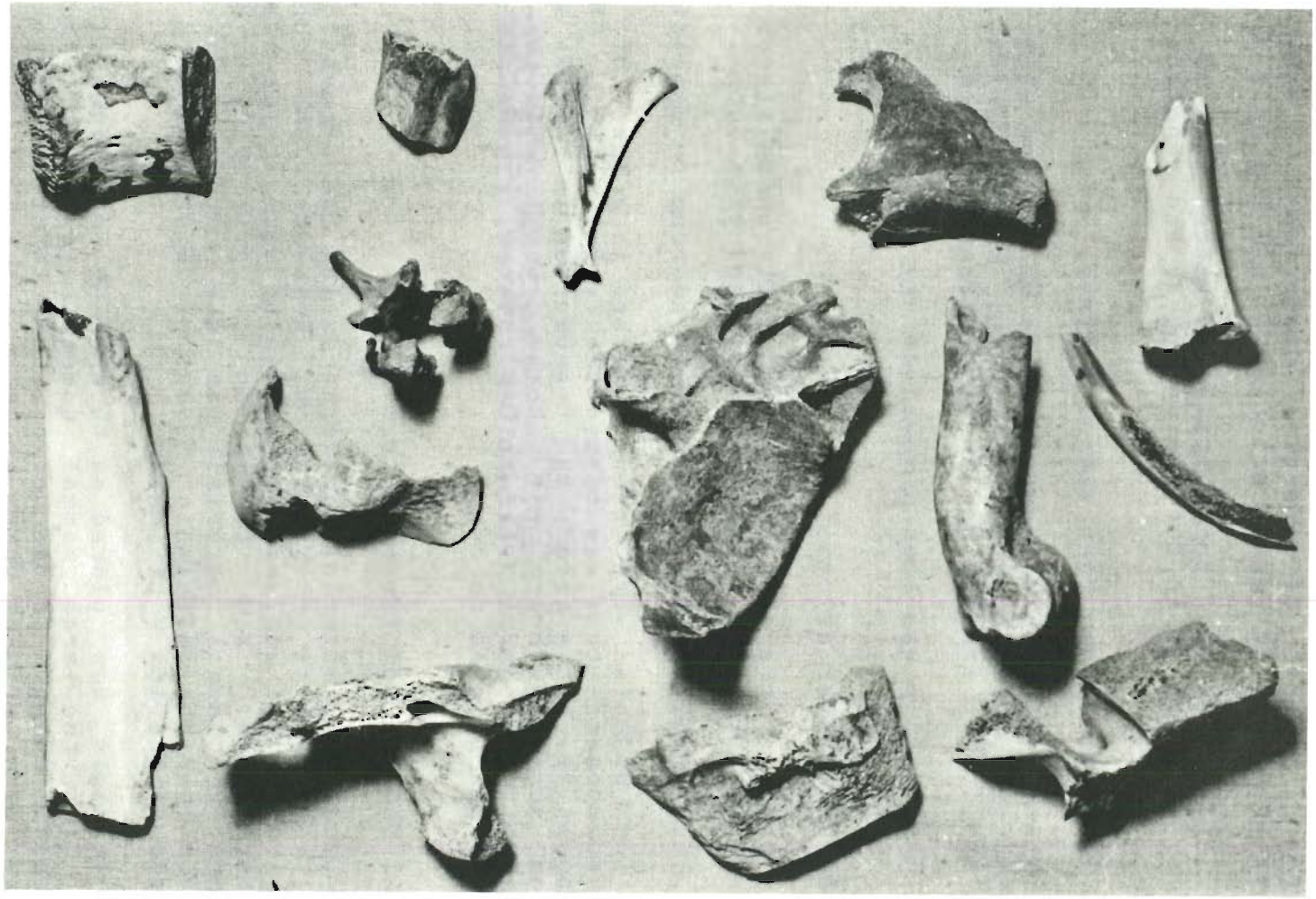
The faunal material recovered during the excavation of block 1191 in the city of Wilmington, Delaware, was subjected to standard faunal analysis techniques of macroscopic examiniation, identification, and tabulation of attributes (Plate 3). Comparative faunal materials at the Catholic University of America and the Smithsonian Museum of Natural History were used for identification verification.

Emphasis was placed on butchering techniques and cuts of meat from the large mammal domesticates (cow, sheep, pig). Diachronic changes in butchering, and information as to economic status were primary goals of this research. General dietary information was also approachable through this line of analysis.

Butcher cuts were identified using illustrations from The Joy of Cooking (Rombauer and Becker 1931), illustrations and text from Ten Lessons on Meat (National Livestock and Meat Board 1926)

PLATE 3

Sample of Faunal Remains from Block 1191



and The Meat We Eat (Ziegler 1962). Available Meat from Faunal Remains (Lyman 1979) was used also. The individual cuts of meat were first identified in their basic units; i.e. picnic ham, sirloin steak, etc. These were then grouped into larger categories based on general methods of preparation. These categories included steaks, hams, soup, etc. These are general cuts since butchering techniques vary from region to region (Zeigler 1961).

Butchering marks were tabulated during the identification stages of the analysis. Illustrations of the bone of the cow, sheep, and pig taken from The Anatomy of Domestic Animals (Sissen and Grossman 1938) were used to show the locations of cuts so these could be correlated and compared to standard techniques such as those outlined in the books listed above under cuts of meat. The type of cut, whether sawing, or hacking were recorded also. This procedure is similar to that used to study prehistoric butchering (Otter 1986).

Common names of animals have been used throughout the text. This was done to facilitate reading. It is expected that most readers would not be familiar with the latin terms. Appendix VI presents the common names with the latin names for those in need of such a list.

In the comparisons used in this report, the number of identified specimens or NISP (Grayson 1984), is used as the unit of comparison. This measure was selected rather than the minimum number of individuals (MNI) due to the problems of aggregate size encountered with MNI's (Grayson 1984). MNIs have been calculated and appear in the species list for each feature simply to satisfy curiosity. Besides aggregate problems, it is felt that MNIs are of no use in the analysis of domestic animals when those animals are not being raised and butchered at the site. Evidence presented here indicated a market system in which cuts would be purchased, not complete animals. Since MNIs were devised to estimate meat weight (White 1953) and are based on the weights of complete animals, MNIs lose all significance in a sample of this type.

What is presented here is not only what animals were consumed, as represented by the remains collected from several filled privies, but also what parts of those animals were being eaten. Caprinae remains (sheep or goat) are assumed to be sheep. All bones which could be determined to be sheep or goat were found to be sheep. Comparisons are made between features and lot units. All comparisons are in relative terms, that is relative to each other. All comparisons are also in terms of bone numbers. This is an important factor when comparing the number of, for example, chicken bones to the number of cow bones to see which was more important in the diet; the weights of the animals must be considered. Future work may someday provide us with a means of accurately estimating the amount of meat from all

animals found in a given situation. At this time no means of accomplishing this exist.

Oyster Shell (by Keith Doms)

The oysters from Block 1191 in Wilmington were examined using techniques that were derived from Kent (1981, n.d.). The shells were specifically examined for the following four characteristics: the salinity of the water from which the oysters were collected, the type of oyster (mud flat, channel, or coon) and the kind of environment in which they grew, the season of death or harvest of the oysters, and the techniques that were used to open the oysters. The salinity can be determined by the presence or absence of bore holes caused by parasitic sponges (see Table 8). The type of oyster can be determined by the size and shape of the shell which is influenced by the environment in which it is found. The season of death or harvest can be determined by examining the growth rings on the hinge or umbo of the left ventral valve of the oyster. Opening by shucking, sawing or breaking leaves certain distinctive marks on the shell.

TABLE 8

Salinity Regime Determination

Salinity regimes as indicated by combinations of small (*c. truttitype*) and large (*c. celata*) boreholes (Kent 1981, n.d.)

	Borehole Combination	Salinity Regime
I	No boreholes	Salinity below 10 ppt for about half of year and rarely above 20 ppt.
II	Valves with small boreholes present, no valves with large boreholes	Salinity below 10 ppt for about one-fourth of year below 15 ppt for about half of year, and occasionally above 20 ppt.
III	Valves with small boreholes more common than valves with large boreholes	Salinity occasionally below 15 ppt and above 20 ppt for one-fourth to to half of year.
IV	Valves with large boreholes as common or more common than valves with small boreholes	Salinity rarely below 15 ppt and above 20 ppt for most of year.

ppt = parts per thousand

The salinity of the oysters' habitats were determined by the amount of two different size bore holes on the exterior of the oyster. These bore holes are caused by c. truttitype, which makes the small holes, and c. celata, which makes holes about four times the size of c. truttitype. These sponges are very sensitive to salinity and, therefore, act as good salinity markers. Table 8 outlines the characteristics for determining which salinity regime is characterized by which sponge.

The oysters were sorted into three groups depending on their shape. Though all are the same species, Crassostrea virginica, the environment in which the oyster is grown can drastically change its shape. Mud flat oysters grow in shallow water on firm muddy sand bottoms. These oysters have a height/length ratio of less than 2 (Kent 1981, n.d.). Channel oysters usually grow in clumps or reefs in deeper water and are more elongated, having a height/length ratio greater than 2. Coon oysters also grow in reefs, but in shallow water, and usually are exposed to the air and sun for long periods. These oysters also have a height/length ratio greater than 2, but they have very thin shells, never grow very large, and have multiple attachment scars.

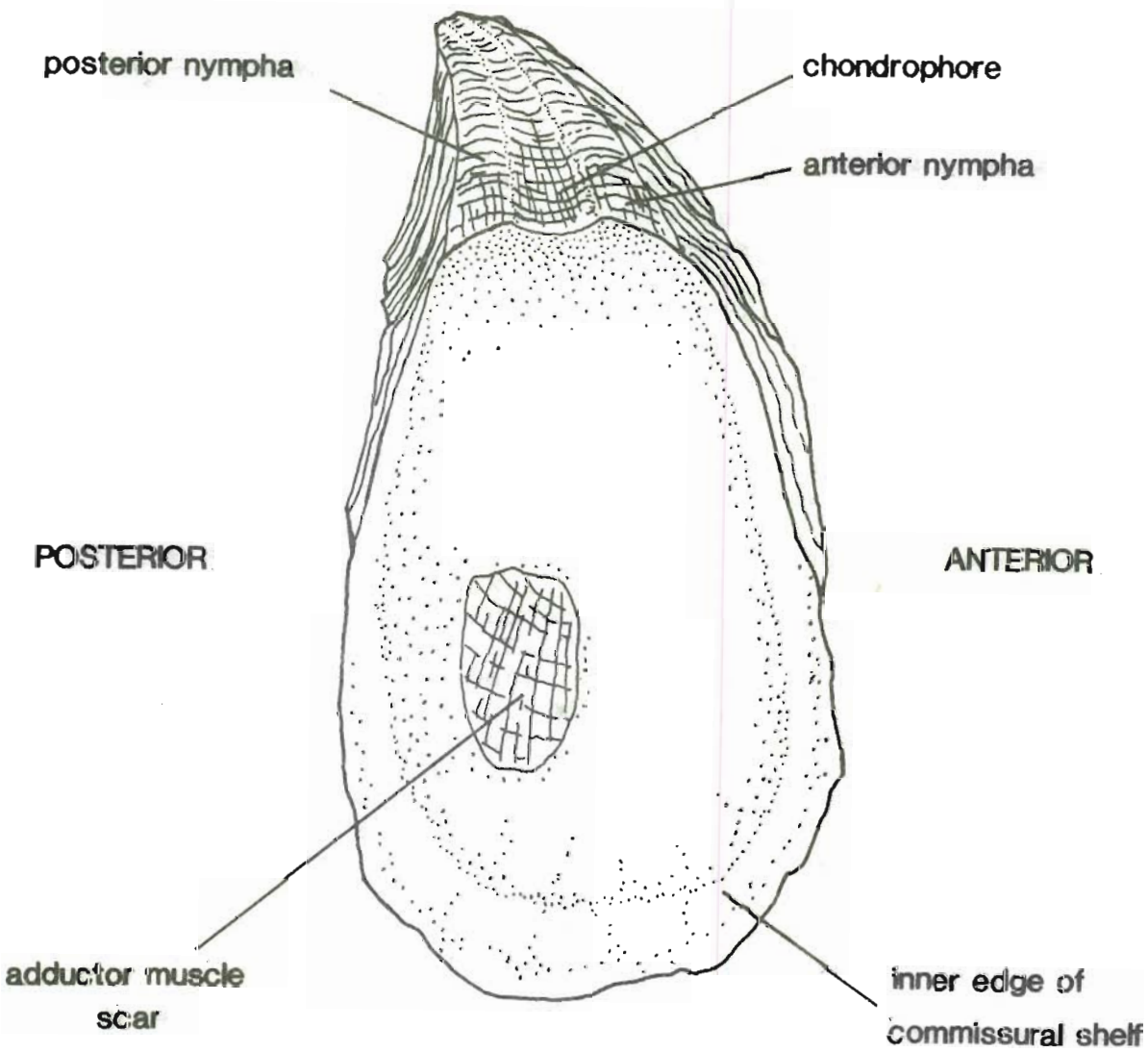
The season of death or harvest was determined by observing the pattern of growth rings on the anterior nympha of the ventral or left valve of the oyster (Plate 4) as demonstrated by Kent (1981, n.d.). After examining an oyster under the microscope it was placed into one of the following six seasonal categories: fall (September-November); late fall/early winter (December); winter (January and February); late winter/early spring (March); spring (April and May), and summer (June through August). Seasonal limits were based on the case with which growth breaks can be seen. During the winter, January and February, the oyster closes and deposits a conchiolin-rich layer instead of the $CaCO_3$-rich layers that are deposited during the rest of the year. These conchiolin layers known as winter growth checks, are visible as deep "V"-shaped grooves or, on some eroded oysters, as narrow raised ridges. The distance beyond the last growth check when correlated with the previous three years of growth determines the amount of time that has passed since winter.

The left valves were examined under a stereo directing microscope and then placed in one of the following categories:

Season	Description
Fall	September, October, November growth exceeding 2/3 the distance of the average of the previous years.

PLATE 4

Diagram of Oyster Shell Illustrating Location of Examined Area



Late Fall/ Early Winter	December, either a partial or developing winter growth check can be seen on the edge of the anterior nympha or when no development could be seen on the edge of the anterior nympha but the last year was as long or longer than the norm for the previous 3 years.
Winter	January, February, the edge of the anterior nympha is completely caped by a conchiolin layer.
Late Winter/ Early Spring	March, partial or very narrow growth beyond the last winter growth check.
Spring	April, May growth beyond the last winter check not exceeding 1/2 the average distance of the previous 3 years.
Summer	June, July, August growth exceeding 1/3 but not exceeding 2/3 the distance of the average distance of the previous 3 years.
Unknown	Oysters which were too damaged or not distinct enough for proper estimation.

Oysters are commonly opened in 3 ways: by steaming/baking, shucking and breaking. However, in this site, evidence of sawing was present as well. All the above methods leave marks or shell damage except for steaming and baking. Shucking can leave a shallow, "U"-shaped scar along the edge. Breaking leaves a relatively straight line across the edge when broken with a heavy blade (e.g. a hatchet) or large U shaped indentations around the edge from blunt instruments. Sawing leaves a narrow rectilineal groove from the edge inward.

The counts of organisms were obtained by counting both right and left valves of clams and oysters. Whichever valve count, left or right, was highest was used as the number of organisms present.

Flotation Samples--Analysis of Floral Remains (by Roger Moeller)

The 250 milliliter flotation samples were collected to provide for recovery of tiny plant seed remains. The samples were gently washed through gradually smaller screens and all material collected in the screens and the residue were dried and

examined. While all components of the samples were identified and recorded, the purpose of the procedure was to record the presence of floral species represented by their seeds and an estimate of the numbers represented.

It was especially helpful to see the entire matrix rather than just the materials sorted by others. The background noise, soils, gravels, clays, obviously recent contaminants (modern trash, rodent deaths, burrow "treats," seeds) each tell the story of the archaeological context. The absence of recent contaminants must be confirmed from the original sample and not just be assumed from the sorted data. Were the contaminants never present, had they been removed by an astute sorter, was the research design intentionally or unintentionally responsible for precluding their inclusion, or what? Each question must be raised and answered before one can assume that the data are truly reliable indications of what actually happened in the past. Some contaminants are "always" present and are assumed to be a part of everyday life. Their absence is extremely important to document.

Quantification of flotation data is very difficult and should be undertaken carefully and differently in each research design. The simplest quantification is presence/absence. Weights, counts, volumes, and minimum number of individuals (plants, animals, vessels, etc.) are more precise, but the implications of each are complicated by a consideration of the relative and absolute amounts of matrix flotated from features, levels outside of features, and portions believed not to have cultural deposits.

Counts of seeds must be placed into the context of their abundance on each plant, the role of that plant in the life of the people, and the manner in which seeds come to be in an archaeological context. The mere presence of the seeds is important, whether they are in context or are actually recent contaminants. Contaminants must be quantified and explained. A large number of similar features from the same archaeological components are expected to have similar contaminants if the agents providing them are the same. If agents differ, then quantity and diversity will differ as well.

A recent seed is almost impossible to recognize in the current context. The site is not very old, the potential for anerobic preservation of uncarbonized seeds is very high, and no domesticates can be excluded. The cultural processes to account for the presence of any seed are virtually unlimited. For this reason all seeds are considered to be archaeologically significant since there is no way to determine which ones are not.

Given all of these considerations, the identifications themselves must be addressed. With prehistoric collections one can easily exclude European or Asian introduced species, non-

natural hybrids, species known only from hundreds of miles distant, and "recent" domesticates. That is not the case with historic sites. In the absence of a forest of a comparative collection, a positive identification to the species level is not always possible. Family or Genus may be easy, but species or subspecies would be extremely difficult and consequently only important within the framework of certain research designs.

Integration of Archaeological and Documentary Data

Archaeologists collect archival information regarding their sites and sites' inhabitants for several reasons. Any information that can be gathered concerning structures on the site, and how those structures were used helps to guide the archaeologist in deciding where to dig and in interpreting structural remains uncovered. In addition, also in order to interpret what is found, an archaeologist collects as much information as possible about the people who discarded the materials he is excavating. In this way an archaeologist can make statements about the everyday lives of particular, known individuals, and begin to make statements about the differences and similarities between groups of people possessing certain characteristics.

In some cases, however, what the archaeologist, or consulting historian, is able to find in the documents and what is actually excavated do not mesh. In the case of Wilmington's Block 1191, the majority of the documentary evidence available for the Block's inhabitants is for the years after 1830. As the nineteenth century progresses, the amount and variety of information available increases rapidly. The Block 1191 project did produce two privies dating to the late nineteenth-century, but the majority of closed contexts date to the late-eighteenth and early-nineteenth centuries, roughly 1780-1820. For the inhabitants of the block during this time period, very little documentary evidence exists. Therefore, with the early features, analysis must depend largely on the archaeological evidence alone.

The following section of the report presents the results of both the documentary and archaeological research. Emphasis is placed on the sites and time periods for which archaeological evidence was collected and analyzed.

RESULTS AND ANALYSIS

Prehistoric Archaeological Remains

A variety of prehistoric artifacts were recovered from the excavations at Block 1191. For the most part, these artifacts were discovered in historic features and are almost certainly