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The Middleton Place Privy: A Study of Discard Behavior and the Archeological Record

Kenneth E. Lewis

Helen W. Haskell

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES.</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>x</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS</td>
<td>xi</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>xiii</td>
</tr>
<tr>
<td><strong>PART I: THE MIDDLETON PLACE PRIVY, HISTORICAL BACKGROUND</strong></td>
<td></td>
</tr>
<tr>
<td>and Archeological Investigations</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>THE HISTORICAL DEVELOPMENT OF THE MIDDLETON PLACE SETTLEMENT</td>
<td>5</td>
</tr>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Middleton Place in the Colonial and Antebellum Periods.</td>
<td>6</td>
</tr>
<tr>
<td>Middleton Place in Transition</td>
<td>9</td>
</tr>
<tr>
<td>THE ARCHITECTURE OF THE MIDDLETON PLACE PRIVY.</td>
<td>19</td>
</tr>
<tr>
<td>ARCHEOLOGICAL INVESTIGATIONS AT THE MIDDLETON PLACE PRIVY</td>
<td>27</td>
</tr>
<tr>
<td>Introduction</td>
<td>27</td>
</tr>
<tr>
<td>The Excavation of the Archeological Deposit</td>
<td>27</td>
</tr>
<tr>
<td>Dating the Privy Deposit</td>
<td>27</td>
</tr>
<tr>
<td>The Functional Context of the Privy Deposit</td>
<td>31</td>
</tr>
<tr>
<td>Introduction</td>
<td>31</td>
</tr>
<tr>
<td>The Privy Deposit as a Late Historic Domestic Assemblage</td>
<td>31</td>
</tr>
<tr>
<td>The Privy Deposit as a Reoccupation Assemblage</td>
<td>38</td>
</tr>
<tr>
<td>SUMMARY AND CONCLUSIONS</td>
<td>43</td>
</tr>
<tr>
<td><strong>PART II: ANALYSIS AND DESCRIPTION OF ARTIFACTS FROM THE</strong></td>
<td></td>
</tr>
<tr>
<td>MIDDLETON PLACE PRIVY</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>47</td>
</tr>
<tr>
<td>BOTTLES AND JARS</td>
<td>49</td>
</tr>
<tr>
<td>Introduction</td>
<td>49</td>
</tr>
<tr>
<td>Alcohol Bottles</td>
<td>59</td>
</tr>
<tr>
<td>Beer Bottles</td>
<td>59</td>
</tr>
<tr>
<td>South Carolina Dispensary Bottles</td>
<td>62</td>
</tr>
<tr>
<td>Unembossed Whiskey Flasks</td>
<td>66</td>
</tr>
<tr>
<td>Wine and Spirits Bottles</td>
<td>68</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine and Chemical Bottles</td>
<td>71</td>
</tr>
<tr>
<td>Square-sectioned Pharmacy Bottles</td>
<td>71</td>
</tr>
<tr>
<td>Narrow-mouthed Round Pharmacy Bottles</td>
<td>73</td>
</tr>
<tr>
<td>Wide-mouthed Round Pharmacy Bottles</td>
<td>75</td>
</tr>
<tr>
<td>Oval Pharmacy Bottles</td>
<td>77</td>
</tr>
<tr>
<td>Paneled Pharmacy Bottles</td>
<td>80</td>
</tr>
<tr>
<td>Free-blown Bottles</td>
<td>82</td>
</tr>
<tr>
<td>Embossed Pankrin Apothecary Bottles</td>
<td>85</td>
</tr>
<tr>
<td>Patent Medicine Bottles</td>
<td>87</td>
</tr>
<tr>
<td>Other Embossed and Specialized Bottles</td>
<td>90</td>
</tr>
<tr>
<td>Cosmetic and Ointment Jars</td>
<td>93</td>
</tr>
<tr>
<td>Pharmaceutical Accessories</td>
<td>95</td>
</tr>
<tr>
<td>Household Bottles</td>
<td>96</td>
</tr>
<tr>
<td>Food Containers</td>
<td>96</td>
</tr>
<tr>
<td>Ink, Polish, and Glue Bottles</td>
<td>100</td>
</tr>
<tr>
<td>TABLE GLASS</td>
<td>105</td>
</tr>
<tr>
<td>Stemmed Drinking Glasses</td>
<td>105</td>
</tr>
<tr>
<td>Tumblers</td>
<td>108</td>
</tr>
<tr>
<td>Decanters and Pitchers</td>
<td>112</td>
</tr>
<tr>
<td>Glass Serving Dishes</td>
<td>115</td>
</tr>
<tr>
<td>LAMP GLASS</td>
<td>117</td>
</tr>
<tr>
<td>Student Lamp Chimney</td>
<td>117</td>
</tr>
<tr>
<td>&quot;Pearl Top&quot; Lamp Chimneys</td>
<td>119</td>
</tr>
<tr>
<td>LABORATORY GLASS</td>
<td>120</td>
</tr>
<tr>
<td>CERAMIC KITCHEN AND TABLEWARES</td>
<td>122</td>
</tr>
<tr>
<td>Earthenwares</td>
<td>122</td>
</tr>
<tr>
<td>Creamware</td>
<td>126</td>
</tr>
<tr>
<td>Undecorated Whiteware</td>
<td>128</td>
</tr>
<tr>
<td>Transfer-printed Whiteware</td>
<td>131</td>
</tr>
<tr>
<td>English Majolica</td>
<td>134</td>
</tr>
<tr>
<td>European or American Porcelain</td>
<td>135</td>
</tr>
<tr>
<td>Dinnerware</td>
<td>135</td>
</tr>
<tr>
<td>Tea and Coffeeware</td>
<td>140</td>
</tr>
<tr>
<td>Oriental Porcelain</td>
<td>144</td>
</tr>
<tr>
<td>CERAMIC TOILET ITEMS</td>
<td>145</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>MISCELLANEOUS OTHER ARTIFACTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>147</td>
</tr>
<tr>
<td>Personal Items</td>
<td>149</td>
</tr>
<tr>
<td>Non-metal Household and Construction Items</td>
<td>152</td>
</tr>
</tbody>
</table>

APPENDIX A: CATALOGUE OF ARTIFACTS | 153 |

APPENDIX B: CALCULATION OF ARTIFACT TYPE PROBABILITIES | 159 |

REFERENCES | 161 |
LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIGURE 1.</td>
<td>Locator map of Middleton Place plantation, Dorchester County, South Carolina.</td>
<td>2</td>
</tr>
<tr>
<td>FIGURE 2.</td>
<td>Map of Middleton Place structures of the colonial and antebellum periods.</td>
<td>8</td>
</tr>
<tr>
<td>FIGURE 3.</td>
<td>Ruins of the main house and northern dependency at Middleton Place in 1865.</td>
<td>11</td>
</tr>
<tr>
<td>FIGURE 4.</td>
<td>The west face of the southern dependency at Middleton Place after its conversion to a residence in 1871.</td>
<td>12</td>
</tr>
<tr>
<td>FIGURE 5.</td>
<td>The southern dependency residence with the &quot;pagoda&quot; porch mentioned in 1879.</td>
<td>12</td>
</tr>
<tr>
<td>FIGURE 6.</td>
<td>The east face of the southern dependency residence in the 1920s showing the frame kitchen wing at the southern end.</td>
<td>13</td>
</tr>
<tr>
<td>FIGURE 7.</td>
<td>Map of structures in the vicinity of the southern dependency residence prior to the construction of the modern guest-house and stableyard in 1837.</td>
<td>17</td>
</tr>
<tr>
<td>FIGURE 8.</td>
<td>The Middleton Place privy as it appears today in its role as a public restroom facility, looking southeast.</td>
<td>20</td>
</tr>
<tr>
<td>FIGURE 9.</td>
<td>The Middleton Place privy at the time of the archeological excavations. Visible in the photograph are the wainscoting on the south wall and the raised foundation below it.</td>
<td>21</td>
</tr>
<tr>
<td>FIGURE 10.</td>
<td>Plan and cross-section of the foundation of the Middleton Place privy.</td>
<td>22</td>
</tr>
<tr>
<td>FIGURE 11.</td>
<td>Plan of the first floor of the Middleton Place privy.</td>
<td>22</td>
</tr>
<tr>
<td>FIGURE 12.</td>
<td>Elevation of the north side (front) of the Middleton Place privy.</td>
<td>23</td>
</tr>
<tr>
<td>FIGURE 13.</td>
<td>Elevation of the east side of the Middleton Place privy.</td>
<td>23</td>
</tr>
<tr>
<td>FIGURE 14.</td>
<td>The privy pit during excavation.</td>
<td>28</td>
</tr>
<tr>
<td>FIGURE 15.</td>
<td>Comparison of use ranges of artifacts recovered from the Middleton Place privy.</td>
<td>30</td>
</tr>
<tr>
<td>FIGURE 16.</td>
<td>Comparison of use ranges of precisely datable artifacts with the documented occupations of Middleton Place.</td>
<td>41</td>
</tr>
<tr>
<td>FIGURE</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>17</td>
<td>Graph of probability distribution of accurately dated artifacts from the Middleton Place privy by five year intervals.</td>
<td>42</td>
</tr>
<tr>
<td>18</td>
<td>Bottle shapes from the Middleton Place privy.</td>
<td>53</td>
</tr>
<tr>
<td>19</td>
<td>Bottle finishes from the Middleton Place privy.</td>
<td>54</td>
</tr>
<tr>
<td>20</td>
<td>Beer Bottles.</td>
<td>59</td>
</tr>
<tr>
<td>21</td>
<td>South Carolina dispensary bottles.</td>
<td>62</td>
</tr>
<tr>
<td>22</td>
<td>Unembossed whiskey flasks.</td>
<td>66</td>
</tr>
<tr>
<td>23</td>
<td>Wine and spirits bottles.</td>
<td>68</td>
</tr>
<tr>
<td>24</td>
<td>French square pharmacy bottles.</td>
<td>71</td>
</tr>
<tr>
<td>25</td>
<td>Narrow-mouthed round pharmacy bottles.</td>
<td>73</td>
</tr>
<tr>
<td>26</td>
<td>Wide-mouthed round pharmacy bottles.</td>
<td>75</td>
</tr>
<tr>
<td>27</td>
<td>Oval pharmacy bottles.</td>
<td>77</td>
</tr>
<tr>
<td>28</td>
<td>Paneled pharmacy bottles.</td>
<td>80</td>
</tr>
<tr>
<td>29</td>
<td>Free-blown bottle necks</td>
<td>82</td>
</tr>
<tr>
<td>30</td>
<td>Pontil-marked bottle bases.</td>
<td>84</td>
</tr>
<tr>
<td>31</td>
<td>Panknin Apothecary bottles.</td>
<td>85</td>
</tr>
<tr>
<td>32</td>
<td>Patent medicine bottles</td>
<td>87</td>
</tr>
<tr>
<td>33</td>
<td>Other embossed and specialized bottles.</td>
<td>90</td>
</tr>
<tr>
<td>34</td>
<td>Cosmetic/ointment jars</td>
<td>93</td>
</tr>
<tr>
<td>35</td>
<td>Pharmaceutical accessories.</td>
<td>95</td>
</tr>
<tr>
<td>36</td>
<td>Food bottles.</td>
<td>96</td>
</tr>
<tr>
<td>37</td>
<td>Armour beef extract jar</td>
<td>99</td>
</tr>
<tr>
<td>38</td>
<td>Ink, polish, and glue bottles</td>
<td>100</td>
</tr>
<tr>
<td>39</td>
<td>Stoneware and machine-made inks</td>
<td>102</td>
</tr>
<tr>
<td>40</td>
<td>Stemmed drinking glasses</td>
<td>105</td>
</tr>
<tr>
<td>FIGURE</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>41</td>
<td>Reproduction of champagne flute and &quot;Mascotte&quot; wine glass</td>
<td>107</td>
</tr>
<tr>
<td>42</td>
<td>Tumblers</td>
<td>108</td>
</tr>
<tr>
<td>43</td>
<td>Tumblers</td>
<td>110</td>
</tr>
<tr>
<td>44</td>
<td>Cut glass decanters</td>
<td>112</td>
</tr>
<tr>
<td>45</td>
<td>Cut glass pitcher</td>
<td>114</td>
</tr>
<tr>
<td>46</td>
<td>Glass bowl fragments</td>
<td>115</td>
</tr>
<tr>
<td>47</td>
<td>Pressed glass lid</td>
<td>116</td>
</tr>
<tr>
<td>48</td>
<td>Student lamp chimney</td>
<td>117</td>
</tr>
<tr>
<td>49</td>
<td>Reproduction from catalogues of student and piano lamps</td>
<td>118</td>
</tr>
<tr>
<td>50</td>
<td>&quot;Pearl top&quot; lamp chimneys</td>
<td>119</td>
</tr>
<tr>
<td>51</td>
<td>Laboratory beaker</td>
<td>120</td>
</tr>
<tr>
<td>52</td>
<td>Ceramic makers' marks from Middleton Place</td>
<td>123</td>
</tr>
<tr>
<td>53</td>
<td>Creamware sauce tureen</td>
<td>126</td>
</tr>
<tr>
<td>54</td>
<td>Creamware baker</td>
<td>127</td>
</tr>
<tr>
<td>55</td>
<td>Undecorated whiteware plates</td>
<td>128</td>
</tr>
<tr>
<td>56</td>
<td>Whiteware nappy</td>
<td>129</td>
</tr>
<tr>
<td>57</td>
<td>Whiteware cup</td>
<td>130</td>
</tr>
<tr>
<td>58</td>
<td>Transfer-printed whiteware bowl</td>
<td>131</td>
</tr>
<tr>
<td>59</td>
<td>Transfer-printed mug and cup fragment</td>
<td>133</td>
</tr>
<tr>
<td>60</td>
<td>Majolica handle</td>
<td>134</td>
</tr>
<tr>
<td>61</td>
<td>Enamed English porcelain platter</td>
<td>135</td>
</tr>
<tr>
<td>62</td>
<td>Undecorated porcelain plates and saucers</td>
<td>137</td>
</tr>
<tr>
<td>63</td>
<td>Undecorated porcelain platters</td>
<td>139</td>
</tr>
<tr>
<td>64</td>
<td>Decal-printed Austrian teaware</td>
<td>140</td>
</tr>
</tbody>
</table>
LIST OF FIGURES (Continued)

FIGURE 65: "Cornflower" pattern porcelain plate. 142
FIGURE 66: Gold-banded porcelain cup 143
FIGURE 67: Oriental export porcelain 144
FIGURE 68: Molded chamber pot 145
FIGURE 69: Iron hazel hoe 147
FIGURE 70: Miscellaneous metal artifacts 148
FIGURE 71: Liberty head quarters and nickel 149
FIGURE 72: Bone toothbrush 150
FIGURE 73: Leather shoe heel 151
FIGURE 74: Isinglass stove windows 152

LIST OF TABLES

TABLE 1: Comparison of the ratios of bone to all other artifacts at nineteenth and early twentieth century sites 34
TABLE 2: Comparison of the percentage frequencies of the percentage of occurrence of containers by functional type at nineteenth and early twentieth century sites 37
TABLE 3: Probability distribution of accurately dated artifacts from the Middleton Place privy by artifact class and time interval 40
TABLE 4: Technological and social changes affecting nineteenth and twentieth century glass manufacture 55
TABLE 5: Technological and stylistic changes in nineteenth and early twentieth century ceramic manufacture 124
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCROPJI</td>
<td>Charleston County, Records of the Ordinary/Probate Judge, Inventories, Appraisements, and Sales.</td>
</tr>
<tr>
<td>CCROPJW</td>
<td>Charleston County, Records of the Ordinary/Probate Judge, Wills.</td>
</tr>
<tr>
<td>CCRRMCC</td>
<td>Charleston County, Records of the Register of Mesne Conveyance, Conveyances.</td>
</tr>
<tr>
<td>CoCRPJW</td>
<td>Colleton County, Records of the Probate Judge, Inventories.</td>
</tr>
<tr>
<td>DCRRMCC</td>
<td>Dorchester County, Records of the Register of Mesne Conveyance, Conveyances.</td>
</tr>
<tr>
<td>GCRPJW</td>
<td>Greenville County, Records of the Probate Judge, Wills.</td>
</tr>
<tr>
<td>MCASC/SGDP/CD</td>
<td>Manuscript Census, Agriculture, South Carolina/ St. George Dorchester Parish/Colleton District.</td>
</tr>
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<td>MCPSC/SGDP/CD</td>
<td>Manuscript Census, Population, South Carolina/ St. George Dorchester Parish/Colleton District.</td>
</tr>
<tr>
<td>MCPSC/SS/SGDP/CD</td>
<td>Manuscript Census, Population, South Carolina/ Slave Schedules/St. George Dorchester Parish/Colleton District.</td>
</tr>
<tr>
<td>MFP</td>
<td>Middleton Family Papers.</td>
</tr>
<tr>
<td>MPRNHL/MFP</td>
<td>Middleton Place Registered National Historic Landmark, Inc. and Middleton Place Foundation.</td>
</tr>
<tr>
<td>SCRSSLGCS</td>
<td>South Carolina, Records of the Secretary of State, Land Grants, Colonial Series.</td>
</tr>
<tr>
<td>WMP</td>
<td>Williams Middleton Papers.</td>
</tr>
</tbody>
</table>
The Middleton Place privy project has involved a large number of individuals and organizations without whose contributions the final results would not have been possible. The Middleton Place Foundation sponsored both the excavations and the analysis of the data, the latter of which was funded by a grant from the Coastal Plains Regional Commission. Sarah Lytle, Director of the foundation, was instrumental in supporting both phases of the archeological work at the Middleton Place privy. Her interest, foresight, and perseverance are much appreciated. We also wish to thank Charles H. P. Duell, and Alan Powell, General Manager and Administrative Assistant of the Middleton Place Registered National Historic Landmark, Inc., and Barbara Doyle, Secretary of the Middleton Place Associates, for their contribution to this project. Mary Sheppard, who served as the family cook at Middleton Place from 1925 to 1974 provided much useful information about the plantation in the twentieth century. J. Edward Smith, Carpentry Superintendent at Middleton Place, carried out the conversion of the privy structure to modern restrooms. His alertness first called our attention to the presence of the archeological deposit and his memory helped fill in many details of the privy building and its recent history.

The field crew who labored long hours in the far from appealing conditions of the Middleton Place privy pit consisted of Robert M. Paulling and Deloris Grainger. Don Hardesty of the University of Nevada, Reno, helped supervise these excavations in addition to his duties as co-director of concurrent archeological work elsewhere on the plantation. Unpublished information on late nineteenth century ceramics was provided by Albert Bartovics of North Adams State College in Massachusetts, and Stanley South of the Institute of Archeology and Anthropology. Duan Sinclair, George Hartness, and Ronald Long, Columbia antique specialists, took time out from their busy schedules to offer advice on early nineteenth century English porcelain. Comments on the French "Bourbon Sprig" porcelain were taken from information earlier provided to the Middleton Place Foundation by Mellanay Delhom of the Delhom Gallery and Institute in Charlotte, North Carolina. James Mazzulo, of the University of South Carolina Geology Department, performed spectrometric analyses of glass from the excavations, and Jon Eklund of the Smithsonian National Museum of American History, and Sidney Goldstein of the Corning Museum of Glass, provided information on late nineteenth century laboratory glass. Appreciation is also due Elizabeth M. Sadler, librarian of the Fort Washington, Pennsylvania, Historical Society, Roxanna Deane of the District of Columbia Public Library, and William Felker of the Free Library of Philadelphia for their help in tracking down Washington and New England companies and products. Harmon Wray, of Memphis, Tennessee, graciously shared his knowledge of Armour & Co. history and artifacts, and Harvey Teal of Columbia provided invaluable information on the South Carolina dispensary system.

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PART I

THE MIDDLETON PLACE PRIVY
HISTORICAL BACKGROUND AND
ARCHAEOLOGICAL INVESTIGATIONS
INTRODUCTION

In the fall of 1978 construction work was begun to remodel an outbuilding lying just south of the house museum at Middleton Place (38DR16), an eighteenth century plantation on the Ashley River in Dorchester County, South Carolina (Fig. 1). This structure was identified traditionally as a privy. During the removal of a concrete platform within the structure, a rectangular brick privy pit was exposed, revealing a substantial cultural deposit requiring attention before the remodelling of the building could continue. Fortunately, archeological excavations were underway elsewhere on the plantation under the direction of Kenneth E. Lewis and Donald L. Hardesty, who undertook investigation of the privy deposit with the support of the Middleton Place Foundation. Materials recovered from the privy were subsequently stored at the Institute of Archeology and Anthropology at the University of South Carolina. Conservation and analysis of the material has been sponsored by the Middleton Place Foundation, funded by a grant from the Coastal Plains Regional Commission.

Despite the circumstances of the discovery, the contents of the privy represent an intact deposit undisturbed since the time they were laid down. The significance of the deposit lies in the fact that it contains the remains of an activity whose date and nature may be discerned from an examination of its contents. Because Middleton Place has been occupied as a plantation since the eighteenth century, the activity represented by the archeological deposit may have occurred at any time during a period of over two centuries. However, because privy deposits are usually very rapid accumulations, made to seal a pit no longer in use, it is likely that the deposit from Middleton Place contains a collection of roughly contemporaneous material. The archeological collection should provide a comprehensive picture of the material culture in use at the time of its disposal and permit a variety of inferences to be made about lifeways associated with the plantation and its occupants.

In addition to gaining an understanding of the occupation that produced the archeological deposit, it should also be possible to address questions relating to the artifacts themselves. Studies of these items, many of which are intact or restorable artifacts, may contribute to our knowledge of the technology that produced them as well as the social and economic networks through which they passed. Because analysis of the archeological materials will produce a large body of descriptive data, the report should also be useful in future comparative studies of contemporary artifacts.

This study will look at aspects of life at Middleton Place primarily through the examination of archeological materials. The archeological record constitutes the remains of activities engaged in by people who once occupied a site. It represents an accumulation resulting from day-to-day behavior and provides a record of the more mundane aspects of life as well as the larger behavioral processes of which they were a part. Because
Figure 1. Locator map of Middleton Place plantation, Dorchester County, South Carolina.
the production of the archeological record is unconscious, it is not subject to the intentional biases that so often alter the contents of historical documents. It is an independent form of evidence, the results of which are often complementary to those obtained from documentary studies.

The crucial problem in using archeological materials in historical research is understanding the relationship between artifacts in the ground and the behavior that resulted in their accumulation there. Perhaps the most fundamental assumption in archeological research is that human behavior now and in the past is patterned and that the occurrence and distribution of archeological materials reflect this patterning. Different patterns are assumed to reflect different activities. In a general way this is no more than common sense; the debris accumulated around a blacksmith's shop would hardly be the same as the garbage from a kitchen or the materials left over in a tailor's or shoemaker's shop. The trash disposed of by a plantation owner would be likely to have differed significantly from that thrown away by his field hands. Care, however, must be taken in identifying archeological patterns associated with human activities. Contrary to the wishes and hopes of all archeologists, people seldom just drop things where they were used. Some things are, in fact, "trampled" underfoot but others are tossed outside or carried to a dump; some things are treasured and seldom, if at all, find their way into the archeological record but others have little value and are thrown away readily, over-representing their importance; "small" things tend to be trampled into the ground close to where they were originally used, but "large" things are kicked aside or carried away from their original place of use; and so forth. All of these disturbances make it difficult to recognize a pattern that could be used to identify and reconstruct ancient or not so ancient human activities, and problems of differential preservation and natural disturbances make it even more difficult. Consequently, mistakes of identification are easily made; garbage too can be deceiving. (See Schiffer 1976 for a useful but technical discussion of the problems involved in relating the archeological record to human behavior.) Verification, then, is no less a problem to archeologists than to historians working with the documentary record.

Because of the difficulty of verification, it is helpful to incorporate available documentary information into archeological studies for the purpose of direct identification as well as the construction of analogies useful in interpreting material evidence. (See Gould 1971: 175 for a discussion of historical/ethnographic analogies in archeological research.) Historical and archeological evidence should both be employed in order to develop as detailed a picture of the past and as complete an understanding of the behavioral processes involved as possible. At Middleton Place, documentary data, as well as standing architectural evidence, will be examined together with the archeological materials from the privy structure in order to shed light on a part of the plantation's past as well as the evolution of this structure and the activities associated with it.
THE HISTORICAL DEVELOPMENT OF THE MIDDLETON PLACE SETTLEMENT

Introduction

The privy structure is situated in the main house complex of Middleton Place plantation, which for over two centuries has occupied a position on the west bank of the Ashley River. Middleton Place is typical of colonial plantations in the South Carolina lowcountry because of its role in the development of this area as well as the changes it underwent in response to the adaptive pressure of commercial rice agriculture. Both these characteristics reflect the settlement's position on the periphery of European expansion and the function of such colonial regions in this larger economic system.

The "world economy" that arose from the expansion of post-medieval Europe was characterized by relationships of exchange that divided the European-controlled world into "core" and "periphery" areas (Wallerstein 1980: 21). These geographical divisions reflected a division of labor within the system corresponding to the nature of production. Peripheral areas, at the edge of the world economy, were regions where essential goods whose production was less well-rewarded were produced for shipment to the core states at the center of the system (Wallerstein 1974: 302). Exchange between these two areas tended to reflect a "vertical specialization" involving the movement of raw materials from the periphery to the core and the movement of manufactured goods and services in the other direction (Gould 1972: 235-236). Colonial North America, especially the agricultural South (Sellers 1934: 302), was initially a peripheral area.

One of the institutions best adapted to carrying out the task of commercial agricultural production in frontier areas was the plantation, which was essentially a capitalistic agricultural venture intended to produce staples on a large scale for a substantial non-domestic market (Wagley and Harris 1955: 435). The competition of agricultural staples for suitable land, labor supplies, and markets favored the location of plantations so as to minimize cost while maximizing access to markets. These conditions were found on the periphery of a world economic system where native resources could be cheaply exploited to obtain raw commodities for shipment directly from a colonial entrepot to markets in the parent state (Thompson 1959: 29-30).

The first permanent British colonization of South Carolina took place in 1670. Through the early years of the eighteenth century, settlement in the colony was primarily confined to the coast and soon evolved into a plantation economy centered around the port of Charleston. This port provided a direct link to the metropolitan area of Great Britain as well as to other British colonial ports in the New World. Its location at the mouth of the Cooper and Ashley Rivers greatly facilitated the emergence of
a plantation economy on the lower Coastal Plain and it served as a collecting point for colonial export commodities and a redistribution center for imported commercial goods and plantation slaves (Sellers 1934: 5). In addition to supplying its own inland settlements, Charleston became a re-export center for the West Indies (Earle and Hoffman 1976: 17). Being the focus of the coastal plantation economy, Charleston served as the terminus of the British Indian trade in the Southeast (Crane 1929: 108).

The earliest coastal settlement in South Carolina was confined to the area between the Santee and Edisto Rivers and centered on Charleston. Early land allotments were made along the rivers and tidal inlets, for these watercourses offered the easiest means of trade and communication with Charleston as well as some protection against hostile Indian attack (Retty 1943: 23). The first expansion of settlement inland from Charleston took place along the Ashley River, particularly along its west bank where lands were granted as early as the 1670s (Smith 1915). Among the lands granted during the colony's first decade of existence were those that were later to comprise Middleton Place.

Middleton Place in the Colonial and Antebellum Periods

The future site of Middleton Place was included in a 764-acre grant on the south side of the Ashley River issued to Jacob Waight in 1675. It was bounded on the west by Jacob's Creek (SCRSSLGCS/38: 9). This land was apparently abandoned or disposed of, for in 1692/1700, 600 acres of it was granted to Richard Godfrey (SCRSSLGCS/38: 380), from whom it passed to John Williams in 1729.

Williams was a large landowner who had acquired 200 acres of a grant on the south side on the Ashley prior to 1712. On the basis of comparative map evidence, Smith (1919: 116) placed this tract adjacent to the Godfrey property. In 1725, Williams also acquired 825 acres that had been Peter Bacot's property and which bounded on the west of Godfrey's land. This holding of over 1,600 acres passed to Williams' daughter Mary upon his death, and, following her marriage to Henry Middleton in 1741, it became a Middleton residence (Smith 1919: 118).

Henry Middleton I was the son of Arthur Middleton I, a wealthy landowner and former governor of the province. Henry inherited the Oaks plantation in St. James Goose Creek Parish, South Carolina. His South Carolina holdings eventually totaled 26,263 acres and he possessed 199 slaves at his death. In addition to managing these activities he was politically active, having been a member and speaker of the provincial Commons House of Assembly, a member of His Majesty's Council, a delegate to the First and Second Provincial Congresses and the Council of Safety, and a member and President of the Continental Congress (Cheves 1900: 239-240; Edgar and Bailey 1977: 458-459).

Although Henry Middleton owned other properties, he made his wife's Ashley River estate his principal residence. He may have modified the
existing mansion there and added two dependencies in 1755. He employed an English landscape architect to lay out terraces and formal gardens beside the main house complex (Redfield 1978: 104). Unfortunately there is little available documentary information describing either Middleton Place or the activities carried out there during Henry's residence. A 1753 "poetical essay" mentions the Middleton seats but notes only that such an estate "would make a good figure in England" (Gentleman's Magazine 1753: 337). The major agricultural product at the time was rice, which had become the primary money crop in the South Carolina low country in the second decade of the eighteenth century (Gray 1932: 56).

Henry Middleton I died in 1784 and Middleton Place, along with other tracts in South Carolina, was inherited by his son Arthur Middleton II (CCROPJW/1783-1786/A: 345). Like his father, Arthur pursued political interests. He was elected to the provincial Commons House of Assembly and to the Provincial Congress. Prior to the American Revolution he was a leader of the American party in South Carolina and a member of the Council of Safety. Arthur succeeded his father as a delegate to the Continental Congress and was a signer of the Declaration of Independence. After the war he served in the United States Congress and the state legislature. Although Middleton's losses from the Revolution were heavy, his fortune was vast enough to allow him to maintain both his plantations and style of living after the war (Edgar and Bailey 1977: 456-457). Arthur Middleton died in 1787.

It is uncertain how long Arthur Middleton was actually in residence of Middleton Place or what innovations his ownership of the estate may have brought. Rice remained the main cash crop, and it may have been during this time that the tidal marshes along the Ashley River were first utilized for its cultivation. Prior to the Revolution most rice had been cultivated in inland swamps or fields adjacent to freshwater streams where water could be impounded and applied to the fields; however, efforts to expand production in the 1780s led to the development of a more efficient method of cultivation which utilized the tidal action of the rivers to flood the fields (Hilliard 1975: 58). At Middleton Place, tidal fields comprise over one-third of the total frontage on the Ashley River, and a mill pond and rice mill are situated near these fields (Fig. 2). Although it is not known if these features date from the time of Arthur's residence, the mention of tidal rice fields there in 1786 (Castiglioni 1790: 233-234) suggests that the innovation had been adopted prior to his death. Arthur's inventory reveals that the work force at Middleton Place consisted of 50 slaves (CCROPJI/1783-1797: 499).

The earliest account of the actual plantation buildings was made during Arthur's residence by Luigi Castiglioni, a touring Italian nobleman who visited Middleton Place in 1786. It describes the main residence as a three storied structure with the design of an antique castle. A wing was situated on either side to create a symmetrical arrangement of buildings (Castiglioni 1790: 234).

During Arthur's time the family holdings were substantially enlarged with the inheritance of the large Cedar Grove plantation directly across
Figure 2. Map of Middleton Place structures of the colonial and antebellum periods.
the river by his wife Mary Izard Middleton in 1782. It remained Middleton property until 1820 (Smith 1919: 40). Following Arthur's death, Mary Middleton also purchased the adjacent Ashley Hall plantation, but owned it only briefly (Smith 1919: 114).

Henry Middleton II, Arthur's son, inherited Middleton Place together with the family's Newport, Rhode Island estates, and apparently divided his time between these and his travels in Europe (Cheves 1900: 245). His mother, however, continued to reside at Middleton Place (Smith 1919: 119). Henry also followed a political career, serving as state representative, senator, and governor from 1801 to 1812, United States Congressman from 1816 to 1820, and then as Minister to Russia until 1830 (Cheves 1900: 246). He then retired to Middleton Place where he died in 1846, leaving the property to his younger son, Williams (CCROPJW/1845-1851/K: 32).

A general description of Middleton Place was written during Henry's early ownership by the Duke de la Rochefoucault-Liancourt who visited the plantation in 1798. He noted:

> The outbuildings, such as kitchen, wash-house, and offices, are very capacious. The ensemble of these buildings calls to recollection the ancient English country seats. The rooms in the house are small, and the outside, as well as the inside is badly kept .... The garden is beautiful, but kept in the same manner as the house; the soil is very bad, ... (Smith 1919: 119).

During Henry's residence the gardens at Middleton Place were maintained and enlarged. His garden notes made between 1800 and 1838 reveal experimentation with over 200 varieties of plants (MFP/1-6). Andre Michaux, the French botanist, made frequent visits to Middleton Place during his travels in the United States in the late eighteenth century and himself introduced many of the rare plants found there (Smith 1919: 120).

Rice remained the major money crop at Middleton Place as it did on other family plantations during Henry's lifetime and was cultivated by a portion of the 123 slaves he maintained there (MCPSC/SGDP/CD/1820: 62).

**Middleton Place in Transition**

Williams Middleton inherited Middleton Place in 1846 and resided there until the American Civil War. During the period immediately preceding the war he was active in the secession movement as a member of the Secession Convention and a signer of the Ordinance of Secession. Following the war he lived in Charleston and at Middleton Place, and died in Greenville, South Carolina in 1883 (Cheves 1900: 251).

For the period of Williams' residence we have the most complete record of events at Middleton Place. The following description of the antebellum
planted by Nathaniel Russell Middleton, Jr. (1929: 153) in his later years.

As you approach the place on the road, a gateway set in a semicircular brick wall opened on the lawn, across which, a third of a mile back, stood the house, a three story brick structure with a smaller brick building of two stories on either side, which, although not joined to the house, presented the effect of wings. In these were the library on one side, laundry and additional bedrooms on the other. As one entered the gate, the lawn was flanked by rows of oak and beech trees, and as the house was approached, the outbuildings appeared to the right, while on the left, behind a wire fence, extended the ornamental grounds and gardens and artificial ponds. The shrubbery extended around the front of the house, descending to the river in a series of fine terraces ... The estate was an extensive one, about seven miles long by three wide.

In February 1865, Federal troops looted the plantation and burned the main house, the two dependencies, the stable, the barn, and some slave houses (Fig. 3). Slave houses located on the hill south of the mill pond, however, were not disturbed (John Drayton to Williams Middleton June 2, 1865/MFP/7-2).

Following the destruction of the residence, Middleton Place was temporarily abandoned by its owner and was for a while rented to a "Yankee Captain" (Williams Middleton to Eliza M. Fisher and J. Francis Fisher/March 1, 1866/MFP/8-3), during which time the garden became overgrown and some of the plants were removed by Federal officials who visited the site (Williams Middleton to J. Francis Fisher/April 21, 1866/MFP/8-3). In 1867, while still living in Charleston, Williams began rebuilding the plantation. He reroofed the rice mill (Fig. 2), had two servants' houses constructed (Williams Middleton to Eliza M. Fisher/March 10, 1867/MFP/8-9), and began the repair and conversion of the southern dependency into a residence for his family (Edward Middleton to Williams Middleton/June 6, 1867/MFP/8-10). The move to the rebuilt house took place in the summer or fall of 1871 (Williams Middleton to Henry Middleton/April 15, 1871/MFP/11-3), although the construction work was still not completed (Susan Pringle Middleton to Henry Middleton/November 25, 1871/MFP/12-12). By February of the following year the house was nearly finished (Susan Pringle Middleton to Henry Middleton/February 2, 1872/MFP/13-2) (Fig. 4). In the 1870s a "pagoda" porch had been added to the extension built on the front of the house (Henry Middleton to Susan Pringle Middleton/May 25, 1879/MFP/21-5). A photograph showing this porch (Fig. 5) is of additional interest because it provides the earliest evidence of the privy building's existence. The outline of its roof, partially obscured by foliage, may be seen to the right of the house. During this time the springhouse (Fig. 2) was reroofed and floored (John I. Middleton to Williams Middleton/September 11, 1876/MFP/17-4) and a wire fence was erected around the house (Susan Pringle Middleton to Henry Middleton/August 24, 1875/MFP/16-5). Work on the house and gardens continued through the 1870s (Williams Middleton to Susan Pringle Middleton/March 10, 1878/MFP/19-3). A frame kitchen wing (Fig. 6) appears to have been added to the
Figure 3. Ruins of the main house and northern dependency at Middleton Place in 1865 (Photo courtesy Middleton Place Foundation).
Figure 4. The west face of the southern dependency at Middleton Place after its conversion to a residence in 1781 (Photo courtesy Middleton Place Foundation).

Figure 5. The southern dependency residence with the "pagoda" porch mentioned in 1879. The privy can be seen at the extreme right of the photograph. Its slanted roofline appears as a shadow beneath the trees (Photo courtesy Middleton Place Foundation).
Figure 6. The east face of the southern dependency residence in the 1920s showing the frame kitchen wing at the southern end (Photo courtesy Middleton Place Foundation).
During Williams Middleton’s ownership the plantation underwent radical change as a result of the economic effects of the Civil War and the abolition of slavery. Prior to the war, Middleton Place was primarily an agricultural operation. The 1850 census reveals that the plantation was producing a cash crop of 45,000 pounds of rice annually and lesser amounts of corn, oats, peas and beans, sweet potatoes, and hay (MCASC/SGDP/CD/1850: 494-495). Cotton was also grown in the marsh fields at least during some years (Williams Middleton to Eliza M. Fisher/April 16, 1853/MFP/5-7). Middleton Place plantation maintained a herd of 1,000 cattle as well as 100 milk cows, 300 sheep, 200 hogs, and 3 working oxen. In addition, Williams Middleton had imported 11 water buffaloes, presumably as experimental beasts of burden (Williams Middleton to W. D. Clancey/November 29, 1870/MFP/10-13). The plantation was worked by 116 slaves at this time (MCASC/SS/SGDP/CD/1850).

By 1860 rice production was 210,000 pounds annually with some increase in the amounts of other crops produced and numbers of livestock maintained (MCASC/SGDP/CD/1860: 529-530). The production of substantial quantities of food crops in addition to the cash crop of rice, the annual slaughter of a sizable number of livestock, and an absence of accounts for the purchase of substantial amounts of provisions suggest that Middleton Place was largely self-sufficient in terms of foodstuffs.

Production of rice continued during the Civil War, at least as late as 1863 (Williams Middleton to Susan Pringle Middleton/September 11, 1863/WMP). Much of the labor force from Middleton Place, however, was often diverted to construction projects for the Confederate government later in the war, and this undoubtedly had the effect of curtailing production on the plantation (T. B. Burnett to Williams Middleton/October 28, 1864/MFP/6-11). Livestock were also sold off during the war (Williams Middleton, Account/April 8, 1863/MFP/6-6), and those animals that remained were taken by the Federal army in 1865 (A. C. Anderson to Williams Middleton/July 1865/MFP/3-7).

Attempts were made to cultivate rice, cotton, and corn after the war (Williams Middleton to Eliza M. Fisher/April 14, 1867/MFP/8-9), but these appear to have been largely unsuccessful. The 1870 census reveals the extent to which the war had curtailed agricultural production at Middleton Place. Rice, so long the staple crop, is entirely absent. Small amounts of corn and cotton were the only crops reported that year and only eight head of livestock were present (MCASC/SGDP/CD/1870: 3-4). Sheep, although not reported in 1870, were maintained at Middleton Place until 1880 (Williams Middleton to Susan Pringle Middleton/April 28, 1880/MFP/22-4), and cattle were kept there as late as 1884 (Williams Middleton/January 28, 1884/CoCRPJ1).

Because of the absence of a salable agricultural commodity, Williams Middleton turned to the heretofore unexploited mineral deposits on his land. In the immediate post-war period phosphate deposits on the Ashley River were beginning to be commercially mined as a source of fertilizer (Antisell 1869: 74-75). As early as 1868 phosphate was excavated on Middleton property and Williams had become a partner in the Ashley Mining and Phosphate Company.
during the two years of its existence (John I. Middleton to Williams Middleton October 11, 1870/MFP/10-12). The following year Middleton leased out four tracts of Ashley River property for phosphate mining (Williams Middleton to Thomas C. Davies/June 8, 1871/MFP/11-5), and 10 years later he contracted with another party to mine phosphate on Middleton property (Williams Middleton to Julien Fishburne/February 8, 1881/MFP/23-7). It is uncertain how recently phosphate was mined at Middleton Place, but the operation appears to have continued at least as late as 1915 (Elizabeth M. Heyward/July 6, 1915/GCRPJW/250/6).

In addition to phosphate, lumbering became a significant economic activity at Middle Place after the Civil War. During the war Middleton had furnished lumber and railroad ties for the Confederate government (T. B. Bennett to Williams Middleton/October 28, 1864/MFP/6-11). Within a year after the cessation of hostilities a sawmill was erected on the plantation (Williams Middleton to J. Francis Fisher/April 1, 1866/MFP/8-3) and, by 1871, leases had been granted to cut timber on Middleton property (W. H. Bartless to Williams Middleton/May 9, 1871/MFP/11-4). Lumbering was carried out there at least into the early twentieth century (Elizabeth M. Heyward to United Timber Co./CCRRMCC/23: 256; DCRRMCC/6: 165).

Williams Middleton appears to have given up residence at Middleton Place by late 1880. His subsequent removal to Greenville and Summerville is reflected in his correspondence (Susan Pringle Middleton to Williams Middleton/June 11, 1881/WMP), and his absence from the 1880 census for St. Georges Dorchester Parish. Upon Williams' departure, Middleton Place was abandoned as a year-round family residence, although bills for repair work (MFP/25-3-4) indicate the house was maintained after this time. The Charleston earthquake of 1886 caused damage to the property, demolishing the standing ruins of the main house and northern dependency (Dutton 1889: 295), draining the ponds, and damaging the terraces. The restored residence, however, remained intact (MPNRNHL/MFP/1976: 11). Williams Middleton died intestate in 1883 and the plantation passed to his wife, Susan Pringle Middleton and his two children, Henry and Elizabeth. Upon the death in 1900 of Susan Middleton, also intestate, her children inherited the property (Julius H. Heyward to J. J. Pringle Smith/March 20, 1916/DCRRMCC). Three years later Henry sold his portion of the estate to his sister (June 22, 1903/CCRRMCC/F/24: 194, 196; DCRRMCC/4: 518, 520). When Elizabeth M. Heyward died in 1915, she left Middleton Place to her husband Julius H. Heyward until his death or remarriage when it was to pass to her cousin, J. J. Pringle Smith (July 6, 1915/GCRPJW/250/6). Smith inherited the plantation in 1916, and in the fall of 1925 he and his family moved into the southern dependency house which had been abandoned since the turn of the century.

Little documentary information is available concerning the overall post-bellum settlement at Middleton Place. Apparently it included a number of structures in addition to the owner's house. Tax records reveal that the property contained nine structures in 1875 (A. C. Shaffer to Williams Middleton/February 25, 1875/MFP/16-1) and that this number had increased to 16 by 1881 (J. D. Edwards to Williams Middleton/May 16, 1881/MFP/3-10). Undoubtedly these included the rice mill, the spring house, and any remaining antebellum slave houses across the millpond, as well as structures associated with phosphate extraction elsewhere on the plantation. An 1875
letter reporting the construction of a wire fence between the house and the outbuildings (Susan Pringle Middleton to Henry Middleton/August 24, 1875/MFP/16-5), however, suggests that some of these buildings formed a settlement immediately adjacent to the family residence. This settlement is likely to have included the new servants' quarters as well as the stable and carriage house. A plat of the area lying south of the house was drafted in 1936 to show the positions of existing structures (Fig. 7). In addition to the house and privy (the latter misidentified as a pump house), the map discloses the existence of a stable, garage, office, three dwellings, and four agricultural buildings. Because the plat was drawn for the purpose of redeveloping this area, it is likely that all the buildings were old and in need of replacement. Several were reported to date back to the 1880s (News and Courier, April 12, 1937) and are likely to represent the post-bellum settlement described in documents. Evidence of this occupation was revealed archeologically in previous investigations in this area (Lewis and Hardesty 1979: 35). The composition of this settlement seems to reflect the plantation's post-war role as a residence with several tenant or servant families quartered near the owner's house and equipment buildings.

The Smiths' reoccupation in 1925 ushered in a period of restoration and rebuilding that saw the expansion of both the plantation settlement and its gardens (Redfield 1978: 110). Perhaps the most extensive construction projects involved the immediate replacement of the wooden kitchen wing with a brick addition and the demolition of a small settlement south of the house in 1937 to permit the construction of a brick stableyard and guest house (News and Courier, April 12, 1937).

The frame privy was apparently used briefly after 1925 as a latrine and then filled in to allow the installation of the first of two Delco direct current generators within the structure. These machines provided electricity for Middleton Place until the subsequent arrival of outside electrical power. The disused generator remained in the privy structure until 1978 when the building was remodeled for use as a public restroom. This construction revealed the archeological feature dealt with in this report. In 1963 the privy was expanded for use as a shed by placing an addition on its west side. This work resulted in little modification to the original structure and did not disturb archeological deposits associated with the building's interior.

Following the death of J. J. Pringle Smith in 1970, the plantation became the Middleton Place Registered National Historic Landmark, Inc. under the management of Charles Duell. The Middleton Place Foundation was created in 1975 to oversee the restoration of the residence and to conduct research pertaining to past lifeways at Middleton Place. The archeological work upon which this report is based was carried out under the sponsorship of the foundation.
Figure 7. Map of structures in the vicinity of the southern dependency residence prior to the construction of the modern guest-house and stableyard in 1937 (Source: John McCrady Co. 1936).
The Middleton Place privy is a one-story frame structure resting on a brick foundation (Fig. 8). It faces north toward the southern dependency and appears to have been aligned with the north-south axis of this structure. The privy is situated at the edge of the high terrace on which the main house complex lies and from which the ground to the south and east slopes abruptly toward the mill pond and the Ashley River (Fig. 2). At the time of the 1978 archeological investigations the structure was not in use; it had, however, been maintained in good condition and was structurally sound despite a marked easterly tilt (Fig. 9). Since this time an addition has been built on the eastern end of the privy building to create the more symmetrical structure shown in Figure 8. The following discussion will describe the privy structure as it appeared at the time of the excavations.

The foundation of the privy is composed of walls one brick thick. The original portion of the foundation measures 10.0 x 11.0 feet, while that of a twentieth century addition on the west end of the structure is 5.0 x 11.0 feet in size (Fig. 10). The walls are in English bond, laid in a shallow footing trench. They extend to a height of 1.5 feet on the north and most of the west side of the structure. Because of the sloping surface on which the privy rests, however, the south and east walls extend to a depth of at least 3.5 feet. The top of the south wall also extends 2.0 feet above the level of the rest of the foundation. At a distance of 1.8 feet from the south wall a narrow, half-brick thick interior wall bisects the original structure and extends 3.5 feet below the surface to form the front wall of the privy pit. The center portion of this wall had partially collapsed into the pit fill at the time of the excavations. At the base of the southern end of the east wall an arched opening (Fig. 10 and 13) was placed to permit the regular removal of waste from the floor of the privy pit. A concrete platform (Fig. 11) had been poured inside this portion of the structure as a support for the electric generator installed in the 1920s. The slab sat on a thin cushion of earth just above and immediately north of the collapsed south wall. Settling caused by the combined weight of the slab and generator is probably the reason for the dislocation of this wall.

The first floor of the privy consists of two rooms with interior dimensions of 9.5 x 10.2 feet and 4.3 x 10.2 feet (Fig. 11). The wall sills rest directly on the brick foundations and are sufficiently wide to have supported floor joists in the original structure room. A raised floor is not present because it would have been removed to accommodate the generator platform.

The building's walls are of open frame construction covered on the outside with clapboards. The structural members of the frame of the original structure are joined with pegs and covered on the interior by split
Figure 8. The Middleton Place privy as it appears today in its role as a public restroom facility, looking southeast.
Figure 9. The Middleton Place privy at the time of the archeological excavations. Visible in the photograph are the wainscoting on the south wall and the raised foundation below it.
Figure 10. Plan and cross-section of the foundation of the Middleton Place privy.

Figure 11. Plan of the first floor of the Middleton Place privy.
Figure 12. Elevation of the north side (front) of the Middleton Place privy.

Figure 13. Elevation of the east side of the Middleton Place privy.
wood laths and plaster. The laths were attached with wrought lathing nails. The upper two-thirds of the south wall are lined with wainscoting. No evidence of a ceiling remained at the time of the excavation. Alterations of the roofline have made it impossible to determine whether the ceiling rested on joists, or followed the roof line; however, the termination of the wainscoting at the level of the wall plates suggests that there was once a ceiling. Exterior openings in the first floor include a doorway situated in the center of the east room facing the house. On either side of the door is a double hung window, each sash of which contains six panes measuring 5 x 6 inches (Fig. 12). This side obviously served as the front of the privy. Windows of the same size and composition are situated in the center of the east and west walls of the original structure (Fig. 13). The front door is reached by three brick steps that are integral with the foundation and appear to be part of the original structure. The western addition is of frame construction joined with nails and has a large opening in its northern wall, presumably to facilitate the storage of large items.

The gable roof centers on the east room of the structure. Its shallow slope descends from a peak of 11.5 feet to a minimum height of 5.2 feet at the west end of the structure. At present the roof is covered with asbestos shingles.

Despite the relatively complete condition of the privy, there are very few architectural details that can be used to ascertain the date of the original building's construction. There are, however, several other types of material evidence contained in the structure that may be extremely helpful in determining its age.

Chief among these are the nails employed in the building's construction. The remaining lathing nails in the interior of the original structure were all hand wrought. In general, wrought nails were used until the end of the eighteenth century when they began to be replaced by machine-made cut nails (Mercer 1923: 4). Smaller nails, including lathing nails, were the first to be machine made so that the replacement of wrought nails of these types would likely have occurred around 1800 (Nelson 1968). The presence of wrought nails in the Middleton Place privy indicates that this structure was built in the eighteenth century or the early years of the nineteenth. Wire nails used in the addition confirm the twentieth century construction date of this portion of the structure (Nelson 1968).

Another architectural characteristic helpful in dating the privy is the technique of brick bonding employed in its foundation. The foundation is laid in English bond, a form common in American brickwork until the late seventeenth century, when it was replaced by Flemish bond for aboveground work. Both bonds were supplanted by common bond and American bond in the early nineteenth century (Noël Hume 1969: 122-123). The presence of English bonding here suggests that the Middleton Place privy was erected prior to this time.

The overall form of the original structure, with its symmetrical layout, and employment of a pedimented gable are elements of Georgian architecture, a style common in the British American colonies by the mid-eighteenth century (Kimball 1922: 54-55). Sash windows are another Georgian innovation; however, six-pane sashes such as those found on the privy windows do not appear
appear to have come into use until the latter part of the eighteenth century (Wilson 1976: 156-157). This period of construction is supported by the use of split, or riven, laths in finishing the interior of the privy. Split laths were used until 1825 when they were replaced by sawn laths (Mercer 1923: 27). The absence of the latter at the Middleton Place privy points to a construction date in or before the first quarter of the nineteenth century.

Architectural details of the Middleton Place privy suggest an eighteenth or early nineteenth century date for its construction. If so, the building could have been an early component of the main house complex and is likely to be among the oldest standing structures on the plantation. Although the privy was built during the early years of the plantation's existence, its use as a toilet extended into the twentieth century when it was converted into a generator house and later a shed. The artifacts associated with the fill should reveal the time at which the privy was closed, providing a terminal date for the initial use of this structure.
ARCHEOLOGICAL INVESTIGATIONS AT THE MIDDLETON PLACE PRIVY

Introduction

The investigation of the privy was undertaken in November 1978 and was intended to recover systematically archeological materials and information associated with the privy pit. This work attempted to address several basic problems relating to the privy feature: the size and architecture of the pit, the number of dumping episodes involved in filling it, their dates, and the nature of the deposition. Because the architecture of the pit has been discussed in the previous section, the following archeological presentation will concentrate on analysis of the privy fill.

The Excavation of the Archeological Deposit

In order to address questions related to temporal association within the privy pit deposit, an attempt was made to distinguish stratigraphic variation that might reflect the number and order of archeological deposits. Using the top of the privy foundation as a datum, the contents of one-half of the pit were excavated with trowels by natural layers (Fig. 14). It soon became evident, however, that no stratigraphy could be discerned in the pit fill which consisted of a single layer of dark grey, wet, organic, sandy loam interspersed with thin lenses of lime. Artifacts were found throughout the fill. Because the structure and composition of this layer suggested a homogeneous deposit produced by continuous filling without discernible breaks, the remainder of the pit was excavated as a single unit and the contents of both halves combined as a single cultural deposit. The pit contents are likely to represent a relatively rapid deposition composed of refuse as well as human waste, to which lime had been periodically added for sanitary purposes. The disturbed remains of a continuous layer of lime were encountered at the top of the pit deposit. Lime caps were commonly used to seal off the odiferous content of privy pits after the abandonment of these features (Noël Hume 1969: 139).

Dating the Privy Deposit

Although the Middleton Place privy has apparently stood for nearly two centuries, the deposit it contains represents only a single event in its long history. It marks the time at which the building ceased to be used as a privy, a date not clearly recorded in documentary sources. The relatively recent conversion of the privy to a generator house represents
Figure 14. The privy pit during excavation.
the building's only other known use; however, there may have been others.

The date of the privy pit's filling should be reflected in its contents. The *terminus ante quem*, or date before which deposition of archeological materials must have ceased, is not usually determined from the deposit itself, but from external factors such as an overlying deposit or a seal made at a known later date. In this case, the *terminus ante quem* is the sealing of the pit during installation of the electric generator in the late 1920s. The *terminus post quem*, or earliest date at which deposition could have occurred, is indicated by the earliest date of manufacture of the most recent artifact. A deposition associated with the generator installation could be expected to have a *terminus post quem* dating to the third decade of the twentieth century, and to contain primarily artifacts likely to have been in use at that time. A refuse deposit may, however, contain material produced at any time prior to its creation. Given the fact that Middleton Place plantation, and particularly the main house area, has been occupied since the second quarter of the eighteenth century, the likelihood of some earlier material finding its way into a later deposit here is increased. The presence of such material in a late deposit, however, should reveal information about the rates of retention and recycling of the particular types of artifacts involved, increasing our knowledge of the roles they played in the society that produced and used them.

The Middleton Place privy deposit may be dated by comparing the use ranges of the artifacts it contained.* These ranges are displayed graphically in Figure 15. The artifacts recovered from the privy represent types in use from the second quarter of the nineteenth century through the first quarter of the twentieth. An absence of earlier material suggests that, despite the apparent age of the privy structure, the deposit it contains is more recent than and seemingly unrelated to the colonial and much of the antebellum periods of the plantation's history. Because the objects having the latest use ranges are likely to have found their way into the archeological record by the third decade of the twentieth century, a *terminus ante quem* in the 1920s is indicated for their deposit. Information supplied by the privy artifacts suggests a deposition that terminated not long before the time of the privy structure's conversion to a generator house. These materials also imply an occupation stretching back into the post-bellum period, and perhaps earlier. This time saw Middleton Place destroyed, re-occupied permanently and then seasonally, abandoned, and reoccupied again as a residence. Remains of activities associated with this period of instability should be present in the archeological record. The recognition of such activities is likely to shed light on the role played by particular areas of the plantation in its historical development. The remainder of this section will be concerned with exploring the function of the privy deposits.

*See Part II of this report for a detailed description and analysis of the archeological materials recovered from the Middleton Place Privy.
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Figure 15: Comparison of approximate date ranges of artifacts recovered from the Middleton Place Privy.
The Functional Context of the Privy Deposit

Introduction

An examination of the artifacts from the privy deposit indicates that the privy pit was filled before the end of the third decade of the twentieth century, by which time the southern dependency had been reoccupied on a full-time basis. If this conclusion is correct, it is likely that the composition of the refuse deposit will exhibit characteristics reflecting its function as a midden produced at this particular time in the plantation's history. The deposit should reflect the types of activities associated with Middleton Place plantation at the time of its accumulation, namely those involved in occupying a domestic structure following a period of abandonment. Recognizing behavioral patterning paralleling functional differences in late historic period sites is a problem of increasing concern to archaeologists (e.g., Dickens 1979; Dickens and Bowen 1980: 52-54), and recent studies offer valuable comparative data helpful in evaluating the Middleton Place privy materials.

In order to demonstrate archeologically that the privy represents a domestic reoccupation deposit of short duration, we may examine its contents in terms of several hypotheses related to this proposed use. First, the Middleton Place privy should contain an archeological assemblage like that found in functionally similar domestic refuse deposits at contemporary settlements. Secondly, the necessity of filling such a pit as rapidly as possible would have required the use of relatively large amounts of refuse, perhaps more than would be the normal output of domestic activities during that time. If so, the creation of the privy deposit is likely to have entailed the redeposition of items already discarded elsewhere or in disuse. The reoccupation and refurbishing of the Middleton Place house is likely to have produced a sizable amount of refuse and, because this event is close in time to the privy's filling, such material is likely to have been used in filling the privy pit.

The Privy Deposit as a Late Historic Domestic Assemblage

The privy deposit is expected to have been created from the refuse produced by domestic activities associated with the occupation of Middleton Place as a residence by 1925. Consequently, it is anticipated that the archeological record will reflect household activities and the processes involved in discarding their unwanted by-products. Archeological patterning evident here should be similar to that found in refuse deposits at comparable domestic sites of the late nineteenth and early twentieth centuries.

Because the archeological record represents only a portion of the material culture associated with the activities that produced it, our ability to interpret this record is dependent upon an understanding of the processes by which it was formed as well as those that may have affected it prior to its recovery. Discard, or the deliberate deposition of waste material, is the process primarily responsible for refuse deposits such as
those normally contained in a privy pit. Schiffer (1972: 161) has identified two basic types of discard, primary refuse, deposited at its place of manufacture, and secondary refuse which is disposed of elsewhere. In settlements where the occupation is intensive and permanent, most refuse must be collected and redeposited. Consequently, historic sites are characterized by the predominance of secondary refuse.

South (1977: 179) has distinguished two types of secondary refuse deposits on historic sites in the American South, those occurring adjacent to a living or activity area and those lying peripheral to it. Size and smell have been identified as two variables affecting the types of artifacts found in each type of deposit, with larger items and those possessing a disagreeable odor being discarded in peripheral areas (South 1979: 218). Adjacent secondary refuse deposits generally consist of small and fragmentary artifacts deliberately discarded or lost.

The distribution of secondary refuse has been found to vary with the layout of structures and activities on a settlement. Plantations, such as Middleton Place, show a layout linked to their organization as large-scale producers of staple crops within a larger world economy. The necessity of managing and maintaining the unfree labor force necessary to carry out agricultural production resulted in a compact pattern of settlement centered around the owner's residence (Prunty 1955: 465-466). The main house and its symmetrically placed dependencies were flanked by quarters, farm, service, and other specialized activity buildings lying to one or both sides. These structures were situated apart from the main house complex and were often geometrically arranged as distinct units (Waterman and Barrows 1969; Phillips 1929: 332). In contrast, the areas to the front and rear of the main house complex were often left vacant as lawns or gardens.

Archeological investigations at several plantations in South Carolina have shown that the distribution of refuse follows the layout of buildings and their accompanying activity areas, leaving the rest of the site generally free of adjacent secondary refuse (L. Lewis 1978: 21, 34, 50, 54; Lewis and Hardesty 1979: 44; Lewis 1979: 50; Lewis and Haskell 1980: 46). Peripheral secondary refuse deposits do not appear to be associated with the main house itself (Lewis and Hardesty 1979: 36; L. Lewis 1978: 54). Rather, they are found in the vicinity of its outbuildings (L. Lewis 1978: 30, 42; Lewis and Haskell 1980: 72; Lewis and Hardesty 1979: 36), indicating that an effort was made to redeposit peripheral refuse material away from the owner's residence.

By the time of the Middleton Place privy deposition, the southern dependency had become the main house on the plantation. Although Middleton Place was no longer engaged in commercial agriculture, it still supported a small community of servants housed nearby and would soon begin the restoration of its plantation landscape, particularly the gardens, as a tourist attraction. These factors are likely to have resulted in the maintenance of the grounds surrounding the south dependency house, limiting their use as adjacent secondary refuse zones and encouraging the deposition of peripheral refuse elsewhere.
The privy, just south of the kitchen wing, lies within the adjacent secondary refuse zone of the house and the privy fill is expected to contain material normally deposited in such areas. Because the refuse would have been deposited in the privy pit, these materials would not be restricted to the small-sized debris commonly associated with surface refuse. Consequently, it is anticipated that while archeological materials in the privy fill will be of the same type as those in adjacent secondary refuse deposits, larger and more intact examples of these artifacts will be found.

An examination of secondary refuse features at 15 documented sites of nineteenth and early twentieth century settlement has been conducted in an attempt to provide information regarding artifact patterning in adjacent and peripheral secondary refuse deposits.* Such patterning should permit the recognition of different types of deposits on the basis of quantitative relationships among various categories of artifacts, the occurrence of which is related to the type of behavior that produced the archeological deposit. Of the 15 deposits examined, 11 appear to represent peripheral refuse areas, while the remaining four lie adjacent to the sites of inhabited structures. Archeologically these two types of secondary refuse deposits should be distinguished by the relative ratio of bone to other artifacts if the pattern noted by South (1977: 181) prevailed into the early twentieth century. The bone ratios for the 15 refuse deposits appear in Table 1.

*The 15 secondary refuse deposits include four lying adjacent to structures and 11 in peripheral locations. All date from the second half of the nineteenth century until the 1930s. The adjacent deposits are a 1900-1930 dump containing redeposited material from the immediate vicinity of the main house at Oatlands plantation, Leesville, VA (L. Lewis, personal communication); middens near jails built in 1838 and 1870 in Berrien Springs, MI (Demeter and Lowery 1977); and 34GR94, a dugout structure on the Elm Fork of the Red River in Southwestern Oklahoma occupied between 1890 and 1915 (Northcutt 1978: 53-61). Peripheral secondary refuse deposits consist of the cistern of the Thomas Wolfe house in Asheville, NC, filled in the twentieth century (T. Erlandson and D. Hall, personal communication); the Rhinehart house cellar, a 1910-1930 deposit in Floyd County, GA (Williams, Kellar, and Wheaton 1979: 96-104); the nineteenth century post dump at Fort Sill, OKLA (Spivy, et al. 1979); two deposits from Atlanta, GA consisting of a small domestic dump (9FU92) dating from 1890-1910 (Carnes, Dickens, and Evans 1979: 60-66) and a late nineteenth and early twentieth century well (9FU118) located on a Garnett Street residential lot (Futch, Worthy, and Dickens 1980: 36-39); an 1840-1900 well near the Dekalb County courthouse in Decatur, GA (Bowen, Carnes, and Dickens 1977: 66-72); two late nineteenth century deposits, a trash pit and privy, located on a residential lot on the Courthouse Square, Edenton, NC (Garrow, Haacker, and Hurry 1978: 84, 89-95); the cellar of the Stell House in Conway County, ARIZ, used as a dump from 1890-1930 (L. G. Santeford, personal communication); Max's well (3LN42) in Tolte Mounds State Park, ARK; a domestic deposit filled between 1910 and 1920 (S. Stewart-Abernathy, personal communication); and a midden deposit along the property boundary of Site F, a Washington, D.C. domestic structure occupied from 1859 until the present (J. Kellar, personal communication).
An examination of these figures reveals that the occurrence of bone in secondary refuse deposits varies considerably; however, this artifact appears in substantially lower ratios in those middens lying adjacent to structures. Although the actual ratios generally fall below those noted by South (1977: 180) at eighteenth century sites, the relative ratios suggest a similar pattern of infrequent bone disposal in adjacent midden areas.

The Middleton Place privy deposit compares well with the data from these sites. Faunal material was absent from the collection, indicating that the assemblage is likely to represent an adjacent secondary refuse deposit. This function is in keeping with the privy’s proximity to the Middleton Place residence and confirms our expectations regarding this archeological feature.

TABLE 1

COMPARISON OF THE RATIOS OF BONE TO ALL OTHER ARTIFACTS AT NINETEENTH AND EARLY TWENTIETH CENTURY SITES

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<td>2. 9FH92 Atlanta dump</td>
<td>30</td>
<td>564</td>
<td>.05</td>
</tr>
<tr>
<td>3. Berrien Springs 1838 jail street midden*</td>
<td>0</td>
<td>104</td>
<td>0</td>
</tr>
<tr>
<td>4. Thomas Wolfe house cistern</td>
<td>2,028</td>
<td>30,545</td>
<td>.07</td>
</tr>
<tr>
<td>5. Berrien Springs 1870 jail street midden*</td>
<td>1</td>
<td>194</td>
<td>.005</td>
</tr>
<tr>
<td>6. Rhinehart house cellar</td>
<td>23</td>
<td>235</td>
<td>.10</td>
</tr>
<tr>
<td>7. Garnett Street well</td>
<td>505</td>
<td>2,016</td>
<td>.25</td>
</tr>
<tr>
<td>8. Fort Sill dump</td>
<td>145</td>
<td>3,127</td>
<td>.05</td>
</tr>
<tr>
<td>9. Decatur courthouse well</td>
<td>131</td>
<td>5,863</td>
<td>.02</td>
</tr>
<tr>
<td>10. Edenton privy</td>
<td>8</td>
<td>651</td>
<td>.01</td>
</tr>
<tr>
<td>11. Edenton trash pit</td>
<td>2</td>
<td>173</td>
<td>.01</td>
</tr>
<tr>
<td>12. Stell house</td>
<td>126</td>
<td>1,179</td>
<td>.11</td>
</tr>
<tr>
<td>13. Max's well</td>
<td>28</td>
<td>1,164</td>
<td>.02</td>
</tr>
<tr>
<td>14. Site F domestic midden</td>
<td>195</td>
<td>1,730</td>
<td>.11</td>
</tr>
<tr>
<td>15. 34GR94 dugout*</td>
<td>0</td>
<td>323</td>
<td>0</td>
</tr>
</tbody>
</table>

*Indicates adjacent secondary refuse deposit

The domestic origin of the privy deposit at Middleton Place may also be recognized through an examination of the artifacts recovered from this feature. As is the case with other settlements, the extent to which function is represented archeologically varies with the types of activities.
carried out as well as the nature of the archeological deposit from which the materials were excavated. Some activities such as pottery-making, glass-making, and domestic subsistence result in the accumulation of large amounts of waste that is easily preserved in the ground. Others, store-keeping or shoemaking for instance, would not be expected to leave a substantial imprint on the archeological record. Artifacts characteristic of these activities would normally have been retained as long as possible, or recycled due to their value and continued usefulness, and thus are less likely to have been discarded or abandoned in quantity at their place of employment. The nature of deposition also varies spatially on a site, as we have seen, and evidence of specialized activities may appear unevenly throughout the area of a settlement.

The contents of an adjacent refuse deposit such as the privy at Middleton Place are likely to consist of materials associated directly with the nearby structure out of which they were discarded. Activities related to the function of the building, whether or not they produced a substantial by-product, will probably be in evidence. What, then, may we expect to find reflecting the domestic nature of the Middleton Place house? Artifacts deposited in the privy feature should be those associated with living areas. These might include artifacts used in the procurement, storage, preparation, and consumption of food; household artifacts such as furniture, lighting devices, hardware, toys, and medicinal and cosmetic artifacts; personal items that would have been carried into many contexts; and finally architectural artifacts related to the structure itself. The last two categories, of course, would include items common to domestic as well as many specialized activities. If, on the other hand, the privy feature was associated with a specialized activity, it would be likely to contain specialized artifacts, even in small numbers, and purely domestic-subsistence items would be few or possibly even absent. If a domestic occupation were combined with the specialized function, as in the case of an owner living in the same building as his business, both domestic and specialized archeological components should be present, though the former would be relatively smaller than at entirely domestic sites (see Lewis 1976: 118-119, 1979: 56-59; Lewis and Hardesty 1979: 50-52).

An examination of the Middleton Place privy collection reveals that all of the artifacts recovered are domestic artifacts or personal or architectural artifacts that would not be out of place in a domestic context (see Appendix A). This is fully consistent with our expectations for a refuse deposit associated with a dwelling and suggests that no activities of a specialized nature were being carried out in the vicinity of the privy at the time of its filling.

A closer look at the domestic deposit materials reveals that the greatest part of the collection (53.9%) is composed of objects associated with the serving and consumption of food. The 250 artifact fragments consist of table ceramics and glassware as well as a single spoon. The second largest category of 166 artifacts, (35.7% of the collection) is composed of containers for various household commodities. Ninety-six pharmaceutical and cosmetic bottles and jars are the most common of these, making up 57.8%
of all containers. Fifty beverage bottle fragments constitute the next largest group of containers (30.1%), followed in turn by 13 non-food containers (7.8%) and seven food storage jars (4.2%). The predominant occurrence of medicine bottles and the near absence of food containers of any kind suggests that this deposit, while domestic in origin, does not represent refuse generated by everyday household activities. Rather, the bulk of the collection is characterized by items that are more likely to have constituted a more permanent assemblage of household artifacts, items that would have been retained until used up or broken. Such artifacts could easily have become abandonment refuse accumulating in the house following each episode of its seasonal occupation in the last decades of the nineteenth century and have remained there following its long term abandonment around 1900.

In order to examine this assumption the glass containers from the Middleton Place privy by type may be compared with collections of artifacts made at other contemporary archeological domestic sites.* The counts and percentage frequencies for these artifacts and relative rankings by site are shown in Table 2. Although representing different types of settlements, all the sites yielded specimens of each type of container. In all sites but one either food storage or beverage containers constituted the most common type, with medicinal bottles occurring next in popularity. These artifacts, in general, represent refuse deposits accumulated during the occupation of each site. The single site exhibiting a predominance of pharmaceutical containers similar to that occurring at the Middleton Place privy is Hardesty, Oklahoma, where several structure locations yielded material that appears to have accumulated as a result of the settlement's rather rapid abandonment following a relatively short occupation (Lees 1977: 50). The corresponding occurrence of container types is hardly adequate to constitute a pattern; it does, however, suggest a functional relationship between a particular assemblage of artifacts and the presence of abandonment refuse in sites of this period.

An examination of the artifacts from the Middleton Place privy has revealed that it represents an adjacent deposit of secondary refuse that accumulated as a result of domestic occupation in the late nineteenth and early twentieth centuries. Although it is a domestic deposit, the privy fill lacks many items normally associated with day-to-day life and the discarded materials it produces. Similarities with other abandoned sites of this period suggest that the privy material may consist largely of a permanent assemblage of abandonment refuse left in the house during and after its period of seasonal occupation in the late nineteenth century and disposed of when the house was reoccupied. The employment of abandonment

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*The seven sites used for comparison include the Fort Sill, OKLA dump, the Stell House, ARK cellar, and the Edenton, NC privy mentioned earlier as well as the Reward Mine, a 1885-1915 labor camp in the Vekol Mountains, ARIZ (Teague 1980); the Motherwell farmstead, a post-1897 settlement near Abernathy, Saskatchewan (Adams 1978); Hardesty, OKLA, a late nineteenth century town in the panhandle region of the state (Lees 1977); and the Park house, a twentieth century refuse deposit in an abandoned root cellar in the Wallace Reservoir area in Georgia (Bartovics, personal communication).
## TABLE 2

COMPARISON OF THE PERCENTAGE FREQUENCIES OF OCCURRENCE CONTAINERS BY FUNCTIONAL TYPE AT NINETEENTH AND EARLY TWENTIETH CENTURY SITES

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fort Sill Dump, OK (Spiey, et al. 1977)</td>
</tr>
<tr>
<td></td>
<td>Edenton Privy, NC (Carrow &amp; Haecker 1978)</td>
</tr>
<tr>
<td></td>
<td>Reward Mine, AZ (Lees 1980)</td>
</tr>
<tr>
<td></td>
<td>Motherwell Farm, Saskatchewan (Adams 1978)</td>
</tr>
<tr>
<td></td>
<td>Stell House, AR</td>
</tr>
<tr>
<td></td>
<td>Park House, GA</td>
</tr>
<tr>
<td></td>
<td>Hardesty, OK (Lees 1977)</td>
</tr>
<tr>
<td></td>
<td>Middleton Place Privy, SC</td>
</tr>
<tr>
<td>Food Storage</td>
<td>38</td>
</tr>
<tr>
<td>Beverage</td>
<td>546</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>220</td>
</tr>
<tr>
<td>Non-Food</td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>809</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Storage</td>
<td>5.3</td>
<td>35.1</td>
<td>47.9</td>
<td>5.4</td>
<td>9.1</td>
<td>4.2</td>
<td>99.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Beverage</td>
<td>67.5</td>
<td>25.5</td>
<td>19.0</td>
<td>16.9</td>
<td>13.8</td>
<td>18.2</td>
<td>30.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>27.2</td>
<td>25.9</td>
<td>23.3</td>
<td>7.1</td>
<td>35.1</td>
<td>63.6</td>
<td>57.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Non-Food</td>
<td>6</td>
<td>13.6</td>
<td>9.8</td>
<td>.6</td>
<td>2.2</td>
<td>9.1</td>
<td>7.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Totals</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Type Rankings    | 3                                      | 3                                        | 1                           | 1                                        | 1               | 1               | 3                           | 4                          |
| Beverage         | 1                                      | 1                                        | 3                           | 3                                        | 2               | 3               | 2                           | 2                          |
| Pharmaceutical   | 2                                      | 2                                        | 2                           | 3                                        | 2               | 1               | 1                           | 1                          |
| Non-Food         | 4                                      | 4                                        | 4                           | 4                                        | 4               | 3               | 3                           | 3                          |

37
debris in this deposit and its role in the reoccupation of Middleton Place in the twentieth century will be further discussed below.

The Privy Deposit as a Reoccupation Assemblage

It is anticipated that the archeological assemblage from the Middleton Place privy will provide evidence of the reoccupation of the plantation about 1925. The privy is believed to have been filled shortly after this event and archeological materials contained in this deposit are expected to reflect activities associated with the reoccupation. These activities are likely to include the discard of abandoned artifacts left by the previous inhabitants of the house as well as the disposal of items that became unusable during or soon after the reoccupation. If, as we suppose, the privy artifacts represent two different occupations separated in time, they should be identifiable as separate components in the archeological record.

As previously mentioned, abandonment refuse would have resulted from the discontinued use of the Middleton Place house around 1900. Because the house remained family property it would very likely have retained those items that had been kept there permanently during its previous use as a part-time residence after 1880. Presumably the contents of the house included a great many useless, broken, or worn-out artifacts that rapidly found their way into refuse deposits following the reoccupation of Middleton Place by the Smiths about 1925. The materials in the privy deposit should be identifiable as household refuse from the earlier occupations. Because the Middleton Place house was abandoned at the beginning of the twentieth century, all evidence of its earlier occupation should date prior to this time. Most of the material is likely to have originated during the post-Civil War occupation, but earlier items, including "heirlooms," may also have been in use at that time. Domestic artifacts falling into this category should constitute the early archeological component at the privy.

The second component of this assemblage should consist of refuse dating from the period of the reoccupation. This material might include items broken in shipping as well as those discarded as a result of subsequent breakage or disuse. The short period between the reoccupation and the creation of the privy deposit would tend to limit the size of this accumulation and it is likely to form the smaller portion of the privy deposit.

Because the Middleton Place house lay abandoned and relatively undisturbed for as long as 25 years, little intervening accumulation of refuse is assumed to have taken place. The archeological record may be expected to reveal this hiatus by a relative absence of artifacts manufactured during this time. Some items from this period may have formed part of the reoccupation refuse; however, their occurrence is expected to be markedly less than that of the later period.

Our previous discussion of chronology established that the privy was closed as late as the mid 1920s, yet it contained artifacts that may date as far back as the second quarter of the nineteenth century (Fig. 15).
In order to determine which parts of this potential range are actually represented by the privy deposit, it will be necessary to compare the range with the use spans of the most closely dated types. Because of the short time during which they were used, these artifacts are more sensitive time markers and are likely to provide a more accurate guide to the period during which refuse deposited in the privy was used.

An examination of the use spans of accurately datable artifacts reveals ranges that cluster into three separate periods. As seen in Figure 16, the majority of these items were used from the late 1860s until about 1900, a time corresponding almost exactly with the post-Civil War occupation of the southern dependency house. The occurrence of an item, the use range of which lies after 1916, establishes the presence of a later occupation such as that associated with the Smiths' removal to Middleton Place in 1925. The paucity of artifacts from this period also conforms to our expectations that the filling of the privy not long after the Smiths' arrival would have limited the amount of post-1925 refuse available as fill. A third occupation in the 1840s is indicated by a single ceramic vessel. This artifact, dating from a time prior to the plantation's destruction in 1865, is likely to have been an heirloom piece employed during the post-bellum occupation of Middleton Place. Several other less closely datable glass and ceramic tableware items also appear to date from this earlier period (Fig. 15), and given the continuity of the Middleton family's occupation of the plantation, such items would not be unexpected.

The relative intensity of the historic occupations represented in the Middleton Place privy deposit is reflected grossly in the number of artifact types manufactured, and very likely used, during a given interval of time. Unfortunately many of the accurately datable artifacts shown in Figure 16 have relatively extensive use ranges, making the assignment of precise manufacturing dates uncertain. It is possible to estimate such dates however, by calculating the probability that each artifact type was manufactured during a particular interval of time. The probability of each type is proportional to both the fraction of the total sample it represents and the fraction of its known interval of manufacture which overlaps the given interval of time. Based on a technique developed by Bartovics (1978: 164-167), a statistical formula for deriving the probability (P) that a particular type of artifact (j) represents a specific interval (k) may be written as follows:

\[ P_{jk} = \left( \frac{n_j}{N} \right) \frac{D_{jk}}{D_j} \]

where:  
- \( n_j \) = number of artifacts of type j.  
- \( N \) = total number of artifacts.  
- \( D_{jk} \) = duration of overlap between the manufacturing range of type j and interval k.  
- \( D_j \) = length of the manufacturing range of type j.
The probability that a given interval of time encompasses the manufacturing dates of all of the artifacts is equal to the sum of the type probabilities for that interval. The sum of the interval probabilities, in turn, should equal 1.0, which is the total probability that all of the artifacts will fall within the entire time of the site's occupation.

Probabilities for the artifact types shown in Figure 16 are listed by five year intervals in Table 3.* These values are portrayed graphically in Figure 17. This graph of probabilities clearly shows that the bulk of the archeological deposition is made up of artifacts that originated in the last half of the nineteenth century. The probabilities of an earlier occupation are low or non-existent, suggesting that antebellum artifacts present in the privy deposit represent heirlooms used in a later occupation. The marked increase in probabilities after 1865 coincides with the post-war reoccupation of Middleton Place, an event that ushered in a period of intensive use which peaked in the 1870s and again in the 1890s. A sharp decline in probabilities occurs around the turn of the century, paralleling the abandonment of Middleton Place. The subsequent low probabilities reflect the absence of deposition after this period and the lack of a substantial accumulation of new artifacts following the 1925 reoccupation of the plantation.

In short, the distribution of probabilities of artifact manufacture follow a pattern similar to that revealed by a comparison of the artifact type date ranges. Both techniques have yielded results that support documented events in the historical development of Middleton Place during the post-Civil War era. The artifacts from the privy appear to reflect the two domestic occupations of the southern dependency house following the Civil War. By far the dominant archeological component is that which accumulated during the period from 1870 to 1900, while a lesser component represents the 1925 reoccupation of the site after a hiatus of several decades. The presence of both components in mixed context indicates that the material was deposited together in a single disposal episode. Such a mixed deposit is likely to have resulted from refurbishing activities accompanying the reoccupation of the southern dependency house, particularly the disposal of no longer useful abandoned artifacts left in the house by its previous occupants and of more recently discarded refuse accumulating during and after the Smiths' move to Middleton Place. In short, the archeological data have revealed evidence of the type of deposit likely to have been produced by processes accompanying recent events in the plantation's long history.

*See Appendix B for the calculation of artifact type probabilities for one time interval.
"J. & C. Alcock" Bowl
"Panknin Apothecary" Bottles
"C. C. Thompson & Co." Bowl
"Whitall Tatum" Plate-molded Bottle
"Limoges" Saucer
"Haviland & Co." Plate
"A. J. Wilkinson" Saucers
"John Maddock & Sons" Plate
"John Edwards" Plate
"Palmetto Brewing Co." Bottle
"S. C. Dispensary" Bottle
"Pat. 1916" Ointment Jar
"Whitall Tatum" Poison Bottle

Documented Occupations at Middleton Place

FIGURE 16: Comparison of use ranges of selected precisely datable artifacts with the documented occupations at Middleton Place
<table>
<thead>
<tr>
<th>Time Interval</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1846-1850</td>
<td>0.0416</td>
</tr>
<tr>
<td>1851-1855</td>
<td>0.0416</td>
</tr>
<tr>
<td>1856-1860</td>
<td>0.0403</td>
</tr>
<tr>
<td>1861-1865</td>
<td>0.0126</td>
</tr>
<tr>
<td>1866-1870</td>
<td>0.0364</td>
</tr>
<tr>
<td>1871-1875</td>
<td>0.0028</td>
</tr>
<tr>
<td>1876-1880</td>
<td>0.0046</td>
</tr>
<tr>
<td>1881-1885</td>
<td>0.0034</td>
</tr>
<tr>
<td>1886-1890</td>
<td>0.0046</td>
</tr>
<tr>
<td>1891-1895</td>
<td>0.0046</td>
</tr>
<tr>
<td>1896-1900</td>
<td>0.0046</td>
</tr>
<tr>
<td>1901-1905</td>
<td>0.0043</td>
</tr>
<tr>
<td>1906-1910</td>
<td>0.0043</td>
</tr>
<tr>
<td>1911-1915</td>
<td>0.0043</td>
</tr>
<tr>
<td>1916-1920</td>
<td>0.0043</td>
</tr>
<tr>
<td>1921-1925</td>
<td>0.0043</td>
</tr>
<tr>
<td>1926-1930</td>
<td>0.0043</td>
</tr>
</tbody>
</table>

**TABLE 3:** PROBABILITY DISTRIBUTION FOR ACCURACY DATED ARTIFACTS FROM THE MIDDLETON PLACE PRIVY BY ARTIFACT TYPE AND TIME INTERVAL.
Figure 17. Graph of probability distribution of accurately dated artifacts from the Middleton Place privy by five year intervals.
SUMMARY AND CONCLUSIONS

Archeological investigations at the Middleton Place privy were conducted in order to determine the nature of a deposit in this structure. The archeological materials, all dating from the nineteenth and early twentieth centuries, had been placed in a brick-lined pit inside the frame building which architectural details suggest was constructed in either the eighteenth or early nineteenth century. The filling of the pit occurred shortly after the plantation was reoccupied following a period of abandonment and preceded the conversion of the privy to a generator house in the late 1920s. In addition to identifying it as a relatively recent refuse feature, archeological information has permitted the investigation of processes related to the formation of this deposit.

As a refuse deposit, the privy represents the deliberate discard of material in connection with activities carried out at the Middleton Place house. The form and content of this archeological feature appear to have been influenced by the nature of these activities and their relationship to the historical development of the plantation. The proximity of the privy to the house suggests that it served as an adjacent secondary refuse deposit, created as a result of discarding domestic trash containing little odiferous organic matter in the vicinity of a dwelling. Comparative archeological data indicate that the pattern observed at Middleton Place corresponds to that occurring on other contemporary settlements.

Because of the wide range of materials recovered and mixed context of their deposition, it is assumed that the privy deposit included materials left at the Middleton Place house from its earlier post-bellum occupation as well as newer artifacts associated with its twentieth century reoccupation. These two archeological components have been identified relatively easily by separating the artifacts by time period. The earlier component, however, also exhibits characteristics that seem to identify it as an assemblage of artifacts produced as a result of abandonment processes rather than those of day-to-day living. This material consists largely of artifacts used to store commodities such as pharmaceutical containers and beverage bottles, items that might have been retained during the plantation's period of seasonal residence after 1880 and abandoned there afterward. In contrast, there is a relative absence of food containers which are usually associated with daily subsistence. These constitute the most common type of container found on contemporary dumps produced by domestic subsistence activity.

The archeological data from the Middleton Place privy have revealed little new information about the overall historical development of the plantation. They have, however, demonstrated that the archeological record, representing one moment of the settlement's past and a small portion of its total settled area, is capable of reflecting particular activities resulting from past events. The historical and the archeological records both mirror
the same processes of human behavior, yet the manner in which the latter does so is still only partially understood. Recent studies in historical archeology have demonstrated the existence of meaningful patterning reflective of past activities and the larger processes they represent. The Middleton Place privy excavations have added to this knowledge by permitting us to explore archeological remains produced by processes of abandonment in domestic structures, processes that are revealed to us through a study of archeological features and other data associated with historical abandonment activities. The results of the investigations thus have methodological value pertaining not only to this site but extending beyond it to the study of contemporaneous settlement as well.

With regard to the everyday life at Middleton Place in the post-bellum period, the privy deposit is limited in what it can tell us. Because it represents largely abandonment refuse, it lacks the residue of daily life that might be found in dumps for kitchen garbage or other household debris. For data on diet, subsistence, and other specific aspects of household composition and economy we must look elsewhere; however, for information about particular items associated with the Middleton occupation, the privy collection is quite helpful. In order to shed light on these artifacts and their roles in the activities carried out at Middleton Place, a separate section has been compiled (Part II). This discussion will explore an aspect of the archeology different from that presented previously in that it will focus on the individual artifact and its relationship to the society that produced, used, and eventually discarded it. Here the material culture recovered in the privy excavation will be described, classified, and compared with collections of similar artifacts. This analysis, focused on individual objects, should complement the functional discussion of the privy and provide information useful to those interested in post-bellum Middleton Place as well as to investigators seeking nineteenth and early twentieth century data for comparative studies.
PART II

ANALYSIS AND DESCRIPTION
OF ARTIFACTS FROM THE
MIDDLETON PLACE PRIVY
ARTIFACT ANALYSIS AND DESCRIPTION

Introduction

The preceding section has dealt with the privy deposit as a whole, its relation to documented activities at Middleton Place, and the nature of the deposit as disclosed by comparison with other archeological sites of the same period. To facilitate these comparisons, the material recovered from the privy has been discussed in general functional categories and artifacts tabulated by fragment as well as by minimum vessel count. This section will focus on the artifacts themselves as discrete entities. Through examination of manufacturing technique, dates of manufacture and use, and intended use of the individual objects, it will deal with the relation of the privy artifacts to social and industrial events and trends in the nineteenth and early twentieth century U. S. in general, as well as to specific developments on the site from which they were excavated. Each item will be discussed in terms of the complete form in which it was manufactured and used. A table correlating artifact fragments with minimum number of individual items can be found in Appendix A.

One hundred sixty-six whole or fragmentary items were recovered from the Middleton Place privy. Most of these artifacts are glass, with the largest number (76) consisting of whole or nearly whole bottles and jars, probably discarded unbroken after their contents had been consumed. The 13 glass tableware items, as well as glass lamp chimneys (5), ceramics (29), and other fragile non-container objects (1), were all found in varying degrees of fragmentation, presumably having been discarded only after they were broken in use.

Only three artifacts--two ink bottles and an ointment jar--definitely post-date the 1900 abandonment of the plantation. Most of the bottles and jars fall into a general late nineteenth century range. This range may extend as late as the early 1920s, but still antedates the 1925 reoccupation of Middleton Place and the subsequent conversion of the privy to a generator house. As many as six medicine bottles were probably manufactured before the Civil War, and may reflect accumulation from that period in the southern dependency or other surviving buildings.

A number of glass ceramic serving vessels also appear to date from the early nineteenth century, but these items were probably still in use during the postbellum period. Both the glass and ceramic tablewares include a mixture of comparatively "expensive" and "cheap" nineteenth century artifacts. Recognizably inexpensive items tend to be from the later part of the century. All ceramics, and some of the heavier cut glass, show signs of use and wear, and one ornate porcelain platter has been partially mended with brass rivets. This may reflect not only curation of valued objects, but the necessity of maintaining all utilitarian items, given the change in the family's financial situation after the Civil War.
The largest single component of the assemblage consists of pharmaceutical prescription bottles, a number of them embossed with the name of a Charleston apothecary. Alcohol bottles also constitute a significant, although much smaller, sub-category. Striking in their absence from a collection of this date are patent medicine bottles (only three definitely identified specimens) and food bottles (four specimens). The absence of proprietary remedies in an overwhelmingly medicinal collection suggests that their popularity was not as universal as has been supposed, while the paucity of food bottles, as discussed in Part I of this report, supports the argument that the privy material represents redeposited abandonment refuse rather than day-to-day disposal of domestic garbage.

The kerosene lamp chimneys are likely to predate the installation of the Delco generator for other than stratigraphic reasons. At Middleton Place, as in other rural areas (Russell 1968: 317), kerosene was probably the only means of lighting available before the introduction of this type of small gasoline-powered generator. A single glass laboratory beaker, the only specialized non-domestic artifact recovered, probably reflects the special interests of a late nineteenth century family member, Henry Middleton, an amateur scientist and inventor who lived with his parents at Middleton Place before moving to England to pursue his studies (Sarah Lytle, personal communication). This item, therefore, is not likely to indicate the presence of commercial activity in the vicinity of the family residence.

The only items likely to represent loss associated with the privy's original function are six coins minted between 1883 and 1912, but presumably in circulation for some time after their issuance. Because of their intrinsic value, these objects were probably not discarded intentionally. Rather, their small size, together with the inaccessibility of the privy pit into which the coins are likely to have fallen from the pockets of their seated owners, increases the chances that their archeological occurrence is a result of loss. Chamber pots are also sometimes dropped into privies and, as such, represent loss or, if fragmentary, primary refuse. Since the single chamber pot recovered from the Middleton Place privy is missing several pieces, it was probably broken elsewhere. Other possible primary refuse includes a window glass fragment, wrought lathing nails similar to those used in the privy building's construction, and cut flooring nails that may have been associated with later repairs or additions. No wire nails were found. A terracotta drainpipe fragment, a roofing tile fragment, and possibly a small piece of white clay tobacco pipe stem appeared to be secondary refuse redeposited from elsewhere on the grounds. All other artifacts, including small non-ceramic and non-glass personal and household items, can be considered secondary refuse from a domestic occupation.

The following artifact descriptions are divided into seven categories: bottles and jars, table glass, lamp glass, laboratory glass, ceramic kitchen and tableware, ceramic toilet items, and miscellaneous other artifacts. Categories have been kept deliberately specific in order to allow, as much as possible, classification by both function and material of manufacture. Where classification by material appears to clash with classification by function, function has been the deciding criterion. Thus, stoneware ink bottles have been included with "bottles and jars" rather than "ceramics," and window glass is in the household and construction section of "miscellaneous artifacts."
Glass manufacture in the nineteenth and early twentieth centuries went in less than 100 years from an individual handicraft to a fully automated industry producing hundreds of millions of containers a year. At the end of the eighteenth century, bottles in the United States and England were manufactured by the time-honored methods of free-blowing and blowing in one-piece molds that formed only the basic body shape. A three-piece mold, capable of shaping the shoulder as well as the body, was developed in England just after the turn of the century and popularized by Henry Ricketts' 1821 patent on a three-piece mold with a lettered base ring (Morgan n.d.: 21, 25-29). The two-piece hinged mold, first definitely used in the U. S. in 1809, probably became common about the same time, although it had been used for embossed bottles in England as early as the 1750s (McKearin and Wilson 1978: 219, 291).*

Most bottles, whether free-blown or mold-blown, were fixed with hot glass to an iron pontil rod, while the upper neck and lip were shaped with hand tools. This process left a rough scar on the base of the bottle at the spot where the pontil had been detached. Holding devices that gripped the body of the bottle and eliminated the need for empontilling were apparently known in England in the 1820s, but did not become common in American glasshouses until the 1840s or 50s (McKearin and Wilson 1978: 216). Sometime before about 1840, a specialized "lipping tool," with a central plug and one or more jaws to form the collar, was introduced (McKearin and Wilson 1978: 217).

The most significant American contribution to the early nineteenth century glass industry was the development in the 1820s of the hand-operated side-lever pressing machine (Scoville 1948: 18; McKearin and McKearin 1966: 334-335). This device consisted of a single- or multi-piece mold into which the glass was pressed by means of a plunger. Since the plunging process required wide-mouthed molds, pressing was used primarily for glass tableware, although straight-sided jars were also pressed in the later part of the century.

In 1864, William Leighton of J. H. Hobbs, Brockunier & Co. in West Virginia, perfected a formula for an inexpensive soda-lime glass that was as crystalline as the heavy lead glass previously used for most American-made clear glass items. This new glass revolutionized the pressed glass tableware industry, and probably made possible the flood of clear glass medicinal and household bottles after the Civil War (Scoville 1948: 22; Davis 1949: 152; Douglas and Frank 1972: 40). Like earlier clear glass, the improved soda-lime glass was tinted with manganese oxide to remove its natural green coloring (McKearin and McKearin 1966: 8; Jones 1971b: 11).

*In this and other matters, most glass historians disagree with T. Stell Newman's 1970 "Dating key for post-eighteenth century bottles" (Historial Archaeology 4: 70-75), a work that has unfortunately gained wide circulation among archeologists. See Jones (1971b) for a point-by-point refutation of Newman's dating system.
During the post-war period, the American glass industry expanded rapidly. Molds were improved, and worker and furnace productivity increased (Davis 1949: 141-143). Scoville (1948: 17-28) has estimated output of the average furnace in 1880 at 14 times greater than it had been at the beginning of the century. New bottle shapes were introduced, and specialized and embossed bottles proliferated. A popular method of embossing, particularly on pharmacy and beverage bottles, was plate-molding, whereby a removable name plate could be inserted into a standard mold for comparatively inexpensive lettering of even small runs of bottles.

The first mechanized production of bottles in the U. S. was on a semi-automatic "press-and-blow" machine, which manufactured wide-mouthed jars by pressing the lip and blowing the body in two separate operations. The molten glass to make the bottle, however, still had to be gathered and dropped into the mold by hand. This machine, patented by Phillip Argobast in 1881, was used by the Enterprise Glass Co. of Pittsburgh to produce Vaseline jars in 1893. Semiautomatic production rapidly took over the fruit jar industry, and a large percentage of fruit jars were produced on semiautomatic machines by the turn of the century. Narrow-necked bottles could not be manufactured on "press-and-blow" machines because the plunger could not be withdrawn through a narrow opening. Although a "blow-and-blow" machine for narrow-necked bottles was patented in England in the late 1880s, semiautomatics for small-mouthed ware were apparently not introduced in the United States until several years after the development of the completely automatic Owens bottle machine in 1903 (Davis 1949: 205-209; Douglas and Frank 1972: 173-179).

The Owens machine, developed by Michael J. Owens of the Toledo Glass Co., was put into production in 1904 (Walbridge 1920: 71-72). It differed from the semiautomatics in that glass was gathered into the molds by means of a mechanical suction process, thus completely eliminating hand labor. Despite a series of improvements from 1904 to 1911, the Owens machine was slow to gain acceptance, both because of its expense and because of the restrictive licensing policies adopted by the Toledo Glass Co. In 1905, most bottle production other than wide-necked jars was still by hand. Semiautomatics came into increasing use, however, and a number of improvements made them a serious threat to the Owens machine. After about 1914 there was a proliferation of patents for automatic feeding devices that could cheaply convert the more modern semiautomatics into fully automatic machines. Use of feeder-fed semiautomatics, as well as the Owens machines, reduced hand bottle production to 50% of the country's output by 1917, and to less than 10% by 1925. The more efficient feeder machines slowly replaced the Owens-type suction machines, and are the type in general use today (Davis 1949: 209-215; Douglas and Frank 1972: 179-189).

The glass artifacts in the following catalogue are described according to form, color, measurements and capacity, finish, method of manufacture, embossing, and probable date range. Since most of these categories require use of technical or easily misunderstood terminology, the descriptive terms we have employed are explained below.

**Form:** The artifacts have been divided into general functional categories, then subdivided by shape. Since bottle shape was fairly standardized by the late nineteenth century, items are called, as much as possible, by the
names under which they were advertised in catalogues. The references listed after each bottle name are works in which the bottle is illustrated and identified; glass-makers' catalogues are the preferred sources. The standard bottle shapes of which examples were found at Middleton Place are illustrated in Figure 18.

Color: The color names used are clear, sun-colored amethyst, amber, cobalt blue, aqua, white milk glass, dark green, and dark olive green. Clear glass, known as "flint" in the glassmakers' catalogues, is either lead or soda-lime glass. The designation of a single pharmacy vial as "clear lead glass" is based on weight and the presence of striae, both characteristics of early lead glass (Daniel 1971: 101). Spectrographic analysis of samples of the Middleton Place pharmacy glass indicates that most of the clear glass bottles are made of soda-lime glass. The composition is similar to that of modern soda-lime glass, and is probably the improved lime glass introduced by William Leighton in 1864 (Douglas and Frank 1972: 40, 66). Based on this and other criteria, most clear lime glass bottles from the privy deposit are assigned date ranges beginning in the 1860s, but clear glass apparently did not become the common color for pharmaceutical and other household containers until the 1870s or later (Chance and Chance 1976: 134; Jeter and Teal 1976: 20-29).

Sun-colored amethyst is the traditional name for clear glass that has been decolored with manganese oxide and exposed to the sun, turning it varying shades of lavender. Manganese for this purpose was imported from Germany and was no longer used after World War I (Jones 1971b: 10). Although most, if not all, of the clear glass bottles from the Middleton Place privy were probably decolored with manganese, only the alcohol bottles show evidence of exposure to the sun.

Amber is simple translucent brown glass; cobalt blue is a deep royal blue; aqua or aquamarine is the typical light blue-green "bottle glass green" called "green glass" in the bottle catalogues. White milk glass or "opal glass" is a translucent white glass usually reserved for pressed glass jars or tableware. Dark green is the so-called "black glass" of early wine bottles, perhaps the color referred to as "imported color" by the bottle manufacturers. Dark olive green glass is a similar color, but has a distinct brownish or amber cast when held to the light. Dark green glass of both kinds was common before the Civil War, but Chance and Chance (1976: 133-136) note that it is rarely found in quantity in contexts dating after about 1880.

Measurements and capacity: Measurements are in inches and capacities in ounces, the units of measure by which the artifacts were manufactured and sold. Except for very small bottles, capacities are to the nearest ounce.

Finish: This is the glassmaker's term for the upper neck and lip, the last part of a mouth-blown bottle to be shaped. Standard bottle finishes are shown in Figure 19. Although almost all pre-automation bottles were finished with some sort of tool, the terms "tooled" and "tool-finished" are here used to describe bottle necks with the regular lip surface and faint horizontal striations produced by a specialized lipping tool with external jaws. Applied lips are those showing a definite juncture between lip and neck, and no indication of use of a jawed finishing tool.
Method of Manufacture: Method of manufacture is determined primarily from mold seams, and is described in terms of the type of mold used and the process (i.e., blowing, pressing, or machine manufacture) by which the glass was formed in the mold. By far the greatest number of bottles from the Middleton Place privy are blow-molded. Most are blown in two-piece molds, which leave mold seams running up two opposite sides of the bottle, usually to just below the tooled lip. The two-piece blow-back mold, however, has mold seams to the very edge of the lip, and a lip surface that has been ground smooth rather than shaped with a lipping tool. The blow-back mold, which allowed the bottle to be cracked off the blowpipe above the molded lip, was used from the late 1850s to about 1900 for containers with screw threads or other complex finishes (Toulouse 1969: 583-584).

The three-piece mold leaves a single horizontal line around the lower shoulder, and vertical lines extending up either side of the shoulder. The height of these vertical lines can vary from part way up the shoulder to nearly the top of the neck. The terms "post mold," "cup mold," and "cup base" refer to the form of the mold base. A post-bottom mold has a separate base that leaves a circular seam on the bottom of the bottle; a cup-bottom mold leaves a seam encircling the outer edge of the base. With the exception of one pontil-marked spirits bottle, all two- and three-piece molded bottles from Middleton Place privy were blown in molds with separate base parts.

A plate mold is a two-piece mold into which a removable lettered plate has been inserted to produce embossing on one or more sides. Plate-molded lettering is surrounded by a raised seam line marking the edge of the inserted plate. Turn-molded bottles have been rotated in the mold to erase mold marks, and will exhibit faint horizontal striations and scratches on the body. "Dip-molded" means that the basic body shape, but not the neck and shoulder, has been formed in a one-piece mold. Dip-molded bottles usually have no mold seams, and cylindrical dip-molded bottles can only tentatively be distinguished from free-blown bottles by their symmetry below the shoulder and a slight tapering from shoulder to base (Toulouse 1969: 530).

A pontil mark is a circular scar left on the base by the iron rod used to hold the bottle for finishing the neck and lip. Although there were many different methods of empointing, only two types of marks were found on bottles from the Middleton Place privy. One is a "sand pontil mark," a roughened grainy area covering most of the base, apparently the result of dipping the glass-coated pontil iron in sand before attaching it (Jones 1971a: 69). The other is a "blowpipe pontil mark," which results from empointing a bottle with the pipe that was used to blow it. A blowpipe pontil leaves a distinct ring of glass about the same size as the bottle neck (Toulouse 1968: 139).

Pressed glass is formed with a plunger in a mold of one or more pieces. Pressed glass items are comparatively thick-walled, have smooth molded lips, usually with mold seams, and are often distinguished by a short, straight shear mark, like an isolated mold line, on the inside base. This mark is from the severing of the "gob" of glass before it was dropped into the mold.
Figure 18. Bottle shapes from the Middleton Place privy (not to scale).
Philadelphia oval. Q. Plain oval. R. Panel. S. Ball neck panel. T. Oil
apothecary's vial. Y. Round patch box. Z. Ointment. AA. Stoneware ink.
BB. Bell mucilage. CC. Cone ink. DD. Cylinder ink. (Drawings are based
(McKearin and McKearin 1966: 337). Bottles that are made on either automatic or semiautomatic machines will have mold lines encircling the top of the lip as well as on the sides and base.

Embossing: Embossing usually consists of the name of a company or product printed in raised letters on the sides or base of the bottle. Isolated numbers and letters on or just above the base are usually, but not always, mold numbers used by the manufacturer for identification (Toulouse 1972: 10). If a bottle has more than one line of embossed lettering on a side, we have transcribed the inscription with the original lines of print separated by a single diagonal slash, as C. F. PANKNIN / APOTHECARY / CHARLESTON S. C. If the embossing extends to several sides or panels, lines from different panels are separated with double diagonal lines: TAPPAN'S // RELUCENT // WASHINGTON // D. C. Unless plate-molding is specified, embossed letters can be assumed to have been carved into the body of the mold.

Date range: The dates given are probable dates of manufacture only, even though the bottle may have been purchased or used some time after it was made. Datable technological and stylistic characteristics of specific artifact types are discussed under the date range categories of the relevant items. For reference, the more generally applicable of these dates are summarized in Table 4 below.

<table>
<thead>
<tr>
<th>Event/Invention</th>
<th>Date Range</th>
<th>Reference(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-piece hinged mold first used in America</td>
<td>by 1809</td>
<td>McKearin and Wilson (1978: 219)</td>
</tr>
<tr>
<td>First widespread use of slanting collar finish</td>
<td>c. 1820</td>
<td>McKearin and Wilson (1978: 216)</td>
</tr>
<tr>
<td>Ricketts patent for three-piece mold with lettered base</td>
<td>1821</td>
<td>Morgan (n.d.: 21)</td>
</tr>
<tr>
<td>First side-lever glass press</td>
<td>late 1820s</td>
<td>McKearin and McKearin (1966: 336)</td>
</tr>
<tr>
<td>&quot;Lacy&quot; pressed glass</td>
<td>1820s-1840s</td>
<td>McKearin and McKearin (1966: 332)</td>
</tr>
<tr>
<td>Popularity of smooth-patterned pressed glass tableware sets</td>
<td>c.1840s-1880s</td>
<td>Lee (1960: 3)</td>
</tr>
</tbody>
</table>

TABLE 4

TECHNOLOGICAL AND SOCIAL CHANGES AFFECTING NINETEENTH AND EARLY TWENTIETH CENTURY GLASS MANUFACTURE

55
<table>
<thead>
<tr>
<th>Event</th>
<th>Year(s)</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of jawed lipping tool for bottles</td>
<td>pre-1840</td>
<td>McKearin and Wilson (1978: 217)</td>
</tr>
<tr>
<td>Introduction into U. S. of non-pontil holding devices for bottles</td>
<td>late 1840s-1850s</td>
<td>Toulouse (1968: 204)</td>
</tr>
<tr>
<td>Formula for kerosene patented by Abraham Gesner</td>
<td>1854</td>
<td>Russell (1968: 134)</td>
</tr>
<tr>
<td>Development of two-piece mold with separate post base</td>
<td>pre-1858</td>
<td>Toulouse (1969: 582)</td>
</tr>
<tr>
<td>Mason jar patent</td>
<td>1858</td>
<td>Toulouse (1977: 116)</td>
</tr>
<tr>
<td>Blow-back mold in general use</td>
<td>c. 1858-1900</td>
<td>Toulouse (1977: 89-90)</td>
</tr>
<tr>
<td>First oil well in Pennsylvania leads to widespread use of kerosene fueled lamps</td>
<td>1859</td>
<td>Russell (1968: 139)</td>
</tr>
<tr>
<td>Introduction of French Square pharmacy bottles</td>
<td>early 1860s</td>
<td>Lorrain (1968: 44)</td>
</tr>
<tr>
<td>Student lamp patented in Prussia</td>
<td>1863</td>
<td>Russell (1968: 215)</td>
</tr>
<tr>
<td>Leighton formula for improved lime glass</td>
<td>1864</td>
<td>Scoville (1948: 22)</td>
</tr>
<tr>
<td>Development of plate mold for embossed bottles</td>
<td>pre-1867</td>
<td>Toulouse (1969: 584)</td>
</tr>
<tr>
<td>Widespread embossing of bottles</td>
<td>1860s-1920s</td>
<td>Jones (1971b: 10)</td>
</tr>
<tr>
<td>Empontilling of bottles almost entirely replaced by use of holding devices</td>
<td>1870s</td>
<td>Toulouse (1968: 204-205)</td>
</tr>
<tr>
<td>Greatest popularity of turn-molded bottles</td>
<td>1870s-1920s</td>
<td>Toulouse (1969: 532)</td>
</tr>
<tr>
<td>Student lamp introduced in U. S.</td>
<td>1870s</td>
<td>Russell (1968: 215-218)</td>
</tr>
<tr>
<td>Louis Pasteur develops sterilization techniques for beer</td>
<td>1870</td>
<td>Downard (1973: 34)</td>
</tr>
<tr>
<td>Anheuser-Busch begins first commercial bottling of American beer</td>
<td>early 1870s</td>
<td>Baron (1962: 241)</td>
</tr>
</tbody>
</table>
Heavily embossed and colored poison bottles 1872-1930s Munsey (1970: 161)

Improved finishing processes result in smoother and more uniformly applied bottle finishes by 1880 Toulouse (1969: 534)

Argobast patent for semiautomatic press-and-blow machine for wide-mouthed jars 1881 Davis (1949: 206)

H. W. Putnam acquires patent rights for lightning stopper 1882 Lief (1965: 13)

Borosilicate glass developed in Germany 1883 Douglas and Frank (1972: 86)

Macbeth-Evans Co. patents "pearl top" lamp chimney 1883 Macbeth-Evans Glass Co. (1920: 34)

William Painter patents crown cap 1892 Lief (1965: 17)

Enterprise Glass Co. puts Argobast semiautomatic into commercial production 1893 Scoville (1948: 324)

South Carolina dispensary system 1893-1907 Huggins (1971: 104, 127)

Michael Owens patents semiautomatic turn-molding machine for light bulbs, tumblers, and lamp chimneys 1894 Scoville (1948: 152)

First lamp chimney and tumbler production on Owens turn-mold machine 1898 Davis (1949: 230)

Most wide-mouthed jars produced on semiautomatic machines by 1901 Scoville (1948: 179)

Owens automatic bottle machine patented 1903 Scoville (1948: 101)

Owens machine put into commercial production: first narrow-necked machine-made bottles 1904 Walbridge (1920: 71-72)

First production of narrow-necked bottles on semiautomatic machines c. 1907 Scoville (1948: 179)

Corning Glass Works develops Pyrex heat-resistant glass 1915 Douglas and Frank (1971: 197)

Use of manganese to decolor glass 1917 Jones (1971b: 10)
<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>State prohibition law goes into effect in South Carolina</td>
<td>1916</td>
<td>Huggins (1971: 194)</td>
</tr>
<tr>
<td>National beer and wine production halted under Wartime Food Control Act and Volstead Act</td>
<td>1918-1920</td>
<td>Baron (1962: 303)</td>
</tr>
<tr>
<td>National prohibition of alcohol under eighteenth amendment and Volstead Act</td>
<td>1920-1933</td>
<td>Baron (1962: 303-323)</td>
</tr>
<tr>
<td>Machine-made bottles comprise 90% of total United States production</td>
<td>1925</td>
<td>Davis (1949: 215)</td>
</tr>
</tbody>
</table>
Beer has been brewed in America since the arrival of the earliest colonists, and bottled since at least the eighteenth century (Baron 1962: 3, 59). In the first half of the nineteenth century, however, beer was produced almost exclusively by local brewers and sold in kegs to taverns. It was not until the 1870s that the expanding railway system, combined with use of the food preservation techniques developed by Louis Pasteur in 1870, permitted widespread bottling and shipping of beer on a commercial basis (Downard 1973: 29-36). Although production of bottled "export beer" increased rapidly through the 1880s and 1890s, the tavern trade in draft beer continued to thrive until Prohibition, and individual bottles and cans did not become the standard method of packaging beer until the 1940s (Baron 1962: 326-327).

The most common American beers before the Civil War were heavy ales, stouts, and porters. The beer of the late nineteenth century was pale lager, a less alcoholic but more effervescent drink that had been introduced by German immigrants in the 1840s (Baron 1962: 175-190). Increased bottling of lager and carbonated soft drinks spurred the search for new bottle closures.
capable of withstanding more pressure than the traditional cork, which was subject to leakage and had to be tied down to prevent its popping out altogether. One of the most successful of the dozens of stoppers patented in the decades following 1870 was Henry Putnam’s 1882 Lightning stopper (Fig. 19a and b), a levered bail with porcelain or vulcanized rubber plug. The Lightning was widely used on beer bottles but had the triple disadvantage, in an increasingly cost-conscious and mechanized industry, of expense, fragility, and the need for hand application (Lief 1965: 13-19). An effective solution to the closure problem did not come until William Painter’s 1892 patent of the mechanically-applied crimped crown cap still in use today. The crown cap gradually replaced other closure types, and had become the almost universal seal for pressurized drinks by the second decade of the twentieth century (Douglas and Frank 1972: 168).

Keeping pace with the growth of the brewing industry was the group that was to prove its undoing: the American temperance movement. The temperance movement became an organized lobbying force with the 1893 founding of the Anti-Saloon League, and thereafter exerted increasing influence over Congress and the state legislatures. "Dry" agitation in South Carolina led to the implementation from 1893 to 1907 of a statewide dispensary system intended to control distribution of wine, beer, and spirits; and by 1916 South Carolina and 22 other states had prohibited all sale of non-medicinal alcohol (Baron 1962: 286-300; Huggins 1971: 106-194). National wartime legislation banned the manufacture of distilled spirits in 1917, and beer and wine in 1918. The Volstead Act of 1919 extended this ban until the eighteenth amendment forbidding the production or sale of any beverage with more than .5% alcohol could take effect in January 1920 (Baron 1962: 303; Downard 1973: 130).

Prohibition changed the face of the American brewing industry, and almost completely destroyed the tradition of the small local brewery. Many brewers tried to survive by manufacturing soft drinks and "near beer," a lager with less than .5% alcohol. "Near beer," however, could not stand up to the competition of home brewers and bootleggers, and most breweries either turned to the manufacture of other products, or closed down altogether (Baron 1962: 313; Downard 1973: 132-134). Two months after the sale of wine and 3.2% beer was again permitted in April 1933, only 31 breweries had reopened (Baron 1962: 323). In 1940, seven years after the lifting of all national restrictions on alcohol, beer production finally reached its pre-Prohibition level, but the number of breweries in operation was less than half the number there had been in 1910 (Baron 1962: 331).

Figure 20a

Pint champagne beer bottle (Illinois Glass Co. 1965: 54; Putnam 1965: 257)

Number of Specimens: 1

Color: Aqua

Height: 9 inches

Capacity: 12 ounces
Figure 20a (Continued)

Base Diameter: 2-5/8 inches

Finish: Tooled beer top. Lightning stopper with vulcanized rubber plug still attached.

Method of Manufacture: Blown in two-piece plate mold with separate post bottom.

Embossing: Plate-molded THE PALMETTO BREWING CO./CHARLESTON, S. C. encircling raised palmetto tree; on back, THIS BOTTLE NOT TO BE SOLD; on base, C10.

Date Range: 1892-1895. The Palmetto Brewery was first listed in the Charleston City Directory in 1882, but it did not become the Palmetto Brewing Company until ten years later (Charleston City Directory 1892: 683). Palmetto Brewing is not listed in Charleston directories after 1895.

Figure 20b

Export beer bottle (Illinois Glass Co. 1965: 54; Putnam 1965: 250)

Number of Specimens: 1

Color: Amber

Height: 9-3/4 inches

Capacity: 14 ounces

Base Diameter: 2-1/2 inches

Finish: Tooled crown top

Method of Manufacture: Blown in two-piece post-bottom mold

Embossing: None

Date Range: 1892-1920s. The crown cap was patented in 1892 (Lief 1965: 17), and mouth-blown bottle production had virtually ceased by 1925 (Davis 1949: 215). Although non-alcoholic products such as "near beer" may have been sold in beer bottles, this container probably predates national Prohibition in 1918.

Figure 20c

Export beer bottle (Illinois Glass Co., 1965: 54; Putnam 1965: 250)

Number of Specimens: 1
Figure 20c (Continued)

Color: Amber

Height (broken): 7-1/4 inches

Estimated Capacity: 14 ounces

Base Diameter: 2-1/2 inches

Method of Manufacture: Blown in two-piece post-bottom mold

Embossing: Base marked R. & Co 24

Date Range: Maximum range is from the 1870s, when standard beer bottle shapes were introduced (Munsey 1970: 116), to the cessation of hand bottle manufacture in the 1920s. Toulouse (1972: 439) says the amber export beer bottles on which the unidentified R. & Co. mark usually occurs are typical of the period 1880-1900.
The South Carolina dispensary system, in operation from 1893 to 1907, was a nearly unique and completely unsuccessful attempt to control alcohol abuse by placing a state's entire retail liquor trade into the hands of its government. Touted by its sponsor, Governor Ben Tillman, as a means of encouraging temperance, guaranteeing purity of product, and returning alcohol revenues to the citizens, the dispensary was born as an eleventh-hour compromise between pro- and anti-prohibition forces in the state legislature. The measure as enacted satisfied neither side, and the dispensary remained a volatile issue in state politics until its repeal 14 years later.

The system functioned by buying up wholesale spirits from local and out-of-state manufacturers, repackaging or relabeling them at a Columbia distribution center, and retailing them to the public through locally operated dispensaries. Beer, which was never bottled by the dispensary, was sold privately by special license, and alcohol of any sort could be brought into the state for individual consumption. In the beginning all liquors were sold in special dispensary bottles, but by the turn of the century the dispensary was handling hundreds of products, many of them pre-packaged national brands. The local dispensaries, which were supposed to operate under strict regulation, became gathering places for drunks, and "beer privileges" evolved into a cover for under-the-counter sales of various kinds of alcohol. The litigation and often violent public resistance (an 1894 "whiskey rebellion" in Darlington left three dead) that had plagued the system from its inception were brought to an end by an 1898 United States Supreme Court ruling in favor of the dispensary, but by 1905 the internal corruption had become so pervasive that a legislature investigating committee recommended closing the system as unmanageable. Despite the now-handsome profit that it was returning to the state treasury, the South Carolina dispensary was abolished by the Carey-Cothran Act of the state legislator in 1907.

Under the Carey-Cothran Act, counties could maintain their old dispensaries by local option. In 1907, 21 counties elected to retain dispensaries, but in 1909 all but six voted them out. Widespread bootlegging from "wet" counties, however, had forced nine more to reinstate the dispensary by 1915. In that year a popular referendum returned a majority in favor of state-wide prohibition, and in January 1916 all county dispensaries were closed under an alcohol prohibition law restricting individual purchases to one gallon a month for medicinal purposes.

South Carolina dispensary bottles come in three basic shapes--Union flasks, Jo-Jo flasks, and cylindrical bottles and jugs--and are usually embossed with either a palmetto tree or an SCD monogram. Bottles were manufactured for the dispensary by over 20 different glassworks, although after 1902 all but one brief contract went to the Carolina Glass Co. of Columbia. It is important to remember that not all alcohol during the dispensary period was sold in embossed bottles, nor was use of embossed bottles confined to the years the state system was in operation. Liquor for private consumption could be brought in from other states, and beer and wine were always packaged by manufacturers in their own bottles. Two separate court rulings allowed the brief resumption of commercial liquor sales in 1894 and 1897, and the illicit whiskey trade flourished throughout the entire dispensary period.
The dispensary itself packaged spirits in unembossed as well as embossed bottles, and in later years sold out-of-state products in their original containers with the South Carolina dispensary name on the labels. County dispensaries after 1907 continued to use embossed state dispensary bottles, as well as labeled unembossed bottles (Huggins 1971: 119-194; Harvey Teal, personal communication).

Figure 21a

Cylindrical whiskey bottle with missing base (Huggins 1971: 85; Pyne Press 1972a: 94; Putnam 1965: 142)

Number of Specimens: 1
Color: Sun-colored amethyst
Height: 9-1/4 inches
Capacity: 1 quart
Base Diameter: 3-5/8 inches
Finish: Tool-finished variant of brandy finish (Fig. 17).
Method of Manufacture: Blown in two-piece cup mold.
Embossing: SOUTH/ CAROLINA/ DISPENSARY on either side of and below palmetto tree with crossed logs.
Date Range: 1893-1899. According to Harvey Teal, a Columbia historian who has conducted extensive research on the South Carolina dispensary, no contracts for bottles embossed with palmettos were issued after 1899.

Figure 21b

Number of Specimens: 1
Color: Sun-colored amethyst
Height: 6-3/4 inches
Capacity: 1/2 pint
Base: Oval 1-1/4 x 1-7/8 inches
Finish: Tooled double ring
Method of Manufacture: Blown in two-piece cup mold.
Figure 21b (Continued)

Embossing: SC / DISPENSARY below intertwined SCD monogram; base marked C.L.F.G. Co. Huggins (1971: 10, 189) attributes this mark to the Pittsburgh, Pennsylvania, C. L. Flaccus Glass Co., which was contracted to manufacture dispensary bottles until 1902.

Date Range: 1899-1902. Again according to Teal, monogrammed dispensary bottles were not made before 1899, when public disapproval forced the removal of the palmetto tree, the state symbol, from alcohol bottles.

Figure 21c


Number of Specimens: 1
Color: Aqua
Height: 6-3/4 inches
Capacity: 1/2 pint
Base: Oval 1-1/4 x 1-7/8 inches
Finish: Tooled double ring. Neck shows traces of lead foil binding used to secure the cork closure (Huggins 1971: 13).
Method of Manufacture: Blown in two-piece cup mold

Embossing: S / C / DISPENSARY on either side of and below palmetto tree with crossed logs; no basemark. The logs below the palmetto are set in a faintly stippled background.

Date Range: 1893-1899.
**Unembossed Whiskey Flasks**

Figure 22a

Union oval flask (Huggins 1971: 7; Illinois Glass Co. 1965: 40)

Number of Specimens: 1

Color: Amber

Height: 7-1/2 inches

Capacity: 16 ounces

Base: Oval 2 x 3-1/4 inches

Finish: Tool-finished double ring

Method of Manufacture: Blown in two-piece post mold

Embossing: None

Date Range: c. 1880-1893. Munsey (1970: 125) says that this type of whiskey flask became popular in the 1880s. Although the Union oval was one of the shapes used by the South Carolina dispensary before 1899, the state apparently did not buy
Union flasks without embossing, and the later county dispensaries used primarily Jo-Jo flasks and small flattened "Dandy" flasks (Illinois Glass Co. 1965: 38). Thus, while unembossed Union flasks could have been used for bootleg or out-of-state whiskey, they probably pre-date the dispensary period (Harvey Teal, personal communication).

Figure 22b

Union oval flask (Huggins 1971: 7; Illinois Glass Co. 1965: 40)

Number of Specimens: 1
Color: Amber
Height: 6-1/8 inches
Capacity: 8 ounces
Base: Oval 1-3/8 x 2-1/2 inches
Finish: Tool-finished double ring
Method of Manufacture: Blown in two-piece cup mold
Embossing: None
Date Range: c. 1880-1893

Figure 22c

Union oval flask (Huggins 1971: 7; Illinois Glass Co. 1965: 40)
Color: Aqua
Height: 5-7/8 inches
Capacity: 8 ounces
Base: Oval 1-1/2 x 2-1/2 inches
Finish: Tool-finished double ring
Method of Manufacture: Blown in two-piece cup mold
Embossing: Base marked S
Date Range: c. 1880-1893
Bordeaux wine bottle (Beck 1973: 38; Switzer 1974: 28-29; Illinois Glass Co. 1965: 31, 32). Although other wines and liquers may be sold in similar bottles (cf. Illinois Glass Co. 1965: 31-32 and Putnam 1965: 146-157), this shape, often with slightly more rounded shoulders, was and is standard for the clarets and sauterns of the French Bordeaux district.

Number of Specimens: 2

Color: Dark olive green

Height: Photographed specimen is 11-3/4 inches tall. Four fragments from a second bottle of apparently similar dimensions were also recovered.

Estimated capacity: 1/5 gallon

Base: 2-3/4 inches in diameter, with deep molded push-up

Finish: Applied champagne ring
Figure 23a (Continued)

Method of Manufacture: Turn-molded

Embossing: None

Date Range: c. 1870-1880. Although the turn-molding technique was known and used earlier (cf. Switzer 1974: 23), Toulouse (1969: 532) dates its greatest popularity to between the 1870s and 1920s. The unevenly applied finish, however, as well as later strictures on alcohol sales, suggest that this bottle was probably manufactured in the early years of the turn-molding period (Toulouse 1969: 534).

Figure 23b

Cylindrical wine or spirits bottle (McKearin and Wilson 1978: 189, 207, 219-220). Whitall, Tatum & Co. (1971: 50) lists this shape as a wine bottle, but Switzer (1974: 29, 31) reports that similar bottles containing bourbon whiskey were recovered from the 1865 wreck of the Missouri River steamer Bertrand.

Number of Specimens: 1

Color: Dark green

Height: 11 inches

Capacity: 24 ounces

Base: 3 inches in diameter; shallow molded push-up with flat outer rim

Finish: Applied brandy collar

Method of Manufacture: Blown in shallow three-piece mold, with free-blown neck and upper shoulder. "Whittle-marked" from contact with metal mold (Toulouse 1977: 143)

Embossing: None

Date Range: c. 1850s-1870s. The absence of a pontil mark indicates that this bottle was produced after the introduction of non-pontil holding devices in the late 1840s or 1850s (McKearin and Wilson 1978: 216), while the roughly applied collar finish suggests a terminal date of around 1880. By this time, according to Toulouse (1969: 534), the irregularity and imperfect fusion of earlier applied lips had been nearly eliminated by improvements in lipping tool design and by widespread use of the super-heated "glory hole", a special furnace opening used to reheat bottle necks during the finishing process. McKearin and Wilson (1978: 188, 219) describe this tall, straight-sided bottle form as a "standard American wine and spirits bottle" of the 1850-1880 period.
Figure 23c

Rounded-shouldered wine, ale, or spirits bottle (Switzer 1974: 16-17; Putnam 1965: 132-154). After its original contents had been consumed, this bottle was apparently refilled with a resin-based, probably non-potable, liquid of which a hardened residue remained at the time of recovery.

Number of Specimens: 1

Color: Dark olive green

Height: 8-1/4 inches

Capacity: 14 ounces

Base Diameter: 2-3/4 inches; sand pontil mark (Jones 1971a: 69) and deep pointed push-up with iron residue in tip.

Finish: Applied brandy collar

Method of Manufacture: Blown in three-piece mold

Embossing: None

Date Range: c. 1820s-1870s. The three-piece mold, invented shortly after the turn of the nineteenth century, was widely used in England after Rickett's 1821 patent of a variant of the process (Morgan n.d.: 21, 29). The sloping collar finish became common about the same time (McKearin and McKearin 1966: 428), while empontilling, according to Toulouse (1968: 204-205), had become almost entirely obsolete by the mid-1870s. Jones (1971a: 67) also dates Canadian wine bottles with a similar sand pontil and pointed push-up arrangement to the 1820s-1870s period.

Figure 23d

Hock or rhine wine sample bottle (Illinois Glass Co. 1965: 31; Putnam 1965: 155).

Color: Amber

Height: 4-7/8 inches

Capacity: 2 ounces

Base Diameter: 1-1/2 inches

Finish: Tooled champagne ring

Method of Manufacture: Blown in two-piece cup mold
Figure 23d (Continued)

Embossing: None

Date Range: c. 1870s-1920s. Munsey (1970: 266) dates promotional gimmicks such as miniatures to the 1870s and later, but blow-molded bottles such as this one were almost never produced after about 1925 (Davis 1949: 213-215). Chance and Chance (1976: 148) illustrate an identical, but full-size, turn-molded rhine wine bottle from a c. 1855-1870 context.

Medicine and Chemical Bottles

Square-sectioned Pharmacy Bottles

Figure 24

French square prescription bottles, narrow mouth (Whitall, Tatum & Co. 1971: 13; Illinois Glass Co. 1965: 8)

Number of Specimens: 14

Color: Clear
Figure 24 (Continued)

Height (left to right): 5-3/4 inches (one specimen); 5-1/4 inches (five specimens); 4-1/2 inches (two specimens); 4 inches (four specimens); and 3-1/4 inches (two specimens)

Capacity: 6, 4, 3, 2, and 1 ounce

Base Measurements: 1-3/4 x 1-3/4 inches; 1-5/8 inches; 1-1/2 inches; 1-1/8 inches

Finish: Tooled prescription lip, with cork still in place on one 4-ounce bottle

Method of Manufacture: Blown in two-piece mold with slight cup base

Embossing: Two 4-ounce bottles have bases marked 3; one 1-ounce bottle base is marked S.B.W. Co.

Date Range: 1860s-1920s. Lorrain (1968: 44) dates the introduction of standardized clear glass pharmacy bottles, specifically the French square shape, to the early 1860s. Although some narrow-necked ware was made on semiautomatics after about 1907 (Scoville 1948: 179), the first Owens machine-made prescription bottles were produced in Canada in 1909, and the Owens license for manufacture of prescription and proprietary bottles was granted to the Owens Eastern Bottle Co. in 1912 (Walbridge 1920: 80, 91). Machine bottle production did not, however, surpass hand production until after 1917, and the American glass industry was not fully mechanized until about 1925 (Davis 1949: 213-215).

As noted in the introduction to this section, these and other clear glass bottles probably have an actual manufacturing range beginning in the 1870s or later. Both clear and aquamarine bottles were sold throughout the late nineteenth century, but archeological findings indicate that aqua was the common color for food and medicine bottles until the 1870s at least (Switzer 1974: 44-66; Chance and Chance 1976: 134). Jeter and Teal's (1976: 20-29) study of embossed Columbia drugstore bottles shows aqua the favored bottle color of pharmacies operating in the 1870s and 1880s, with pharmacies founded after 1890 using clear bottles almost exclusively. Toulouse (1969: 534) also dates bottles with smoothly applied tooled lips such as these to after about 1870, but he attributes this development partly to use of the "glory hole" furnace, a device McKearin and McKearin (1966: 15) note was employed in England by the late 1840s. Illustrations by Switzer (1974: 16-69 passim) suggest that while smooth, perfectly fused finishes were by no means the norm, the transition may have begun by the 1860s.
Narrow-mouthed Round Pharmacy Bottles

Figure 25a


Number of Specimens: 1
Color: Light green
Height: 4 inches
Capacity: 2 ounces
Base Diameter: 1-1/2 inches
Finish: Tooled prescription lip
Method of Manufacture: Blown in two-piece mold with slight cup base
Embossing: None

Date Range: Maximum range is from the 1850s through full automation in the 1920s. Holding devices to replace the disfigurine, pontil rod were introduced in the late 1840s or 1850s (Lorrain 1968: 40; McKearin and McKearin 1966: 20), and two-piece molds with separate
post bases were in use by the mid-1850s (Toulouse 1969: 581-583). Although the separate cup base seems to have been a slightly later development, both post- and cup-bottom molds were apparently common by the 1865 sinking of the Missouri River Steamer Bertrand (Switzer 1974: 30-70 passim).


Number of Specimens: 5
Color: Aqua. Two clear glass examples of type 25d were also recovered.
Height (left to right): 4-7/8 inches, 3-3/4 inches, and 3-1/8 inches
Capacity: 4, 2, and 1 ounce
Base Diameter: 1-3/4 inches, 1-3/8 inches, and 1-1/4 inches
Finish: Tooled prescription lip
Method of Manufacture: Blown in three-piece mold
Embossing: None
Date Range: c. 1860s-1920s. The three-piece mold was introduced in the first quarter of the nineteenth century (Lorrain 1968: 38; Morgan n.d.: 21, 25-29), but the absence of pontil marks and the use of a specialized lipping tool date these bottles to at least mid-century (Jones 1971b: 10; Lorrain 1968: 32). The conventionalized shape, smoothly applied finishes, and similarity of the aquamarine bottles to the clear lime glass bottles with which they were found, however, suggest a post-Civil War manufacture date (Toulouse 1969: 534; Scoville 1948: 22).
Wide-mouthed Round Pharmacy Bottles

Square-shouldered round prescription bottle, wide mouth (Illinois Glass Co. 1965: 7; Putnam 1965: 38). Very wide-mouthed prescriptions such as this one were sometimes used for quinine (Illinois Glass Co. 1965: 10; Whitall, Tatum & Co. 1971: 14). Olives and other pickles were also packed in bottles of this general shape and size (Illinois Glass Co. 1965: 40-44 and Adams 1971: 74), but because of its similarity to bottles 26b and c this specimen has been included in the chemical and medicinal section.

Number of Specimens: 1

Color: Clear

Height: 5-1/8 inches


Base Diameter: 2 inches

Finish: Tooled extract or packer lip
Figure 26a (Continued)

Method of Manufacture: Blown in three-piece post mold

Embossing: None

Date Range: 1860s-1920s, on the basis of Lorrain's (1968: 44) date for the introduction of clear glass pharmacy bottles.

Figure 26b

Morphine or pomade type square-shouldered round prescription bottle (Herskovitz 1978: 4; Illinois Glass Co. 1965: 10; Putnam 1965: 38, 44)

Number of Specimens: 1

Color: Clear

Height: 2-5/8 inches

Capacity: 1-1/2 ounces

Base Diameter: 1-1/2 inches

Finish: Tooled extract lip

Method of Manufacture: Blown in three-piece post mold

Embossing: None

Date Range: 1860s-1920s (Lorrain 1968:44; Davis 1949: 215)

Figure 26c


Number of Specimens: 1

Color: Clear

Height: 2-1/2 inches

Capacity: 1 ounce

Base Diameter: 1-5/16 inches

Finish: Tooled extract lip
Figure 26c (Continued)

Method of Manufacture: Blown in two-piece mold with slight cup base

Embossing: None

Date Range: 1860s-1920s (Lorrain 1968: 44; Davis 1949: 215)

Oval Pharmacy Bottles

![Image of Oval Pharmacy Bottles]

Figure 27a


Number of Specimens: 1

Color: Clear

Height (broken): 4-3/8 inches

Capacity: 3 ounces

Base: Squared oval 1-1/4 x 2-1/8 inches

Finish: Missing
Figure 27a (Continued)

Method of Manufacturing: Blown in two-piece cup mold

Embossing: None

Date Range: 1860s-1920s (Lorrain 1968: 44; Davis 1949: 215)

Figure 27b and c

Taper neck oval prescription bottles (not pictured in any available catalogue, but the shape resembles that of the "sun ovals" and "tall oval extracts" shown in Illinois Glass Co. 1965: 8, 11)

Number of Specimens: 2

Color: Clear

Height: 5-1/2 and 5 inches

Capacity: 4 and 3 ounces

Base: Oval 1-3/8 x 2-1/8 inches and 1-1/4 x 1-7/8 inches

Finish: Tooled prescription lip

Method of Manufacture: Blown in two-piece cup mold

Embossing: None

Date Range: 1860s-1920s (Lorrain 1968: 44; Davis 1949: 215)

Figure 27d and e

Philadelphia oval prescription bottles (Whitall, Tatum & Co. 1971: 8, 12; Illinois Glass Co. 1965: 8)

Number of Specimens: 2

Color: Clear

Height: 4-1/8 and 2-7/8 inches

Capacity: 2 ounces and 1/2 ounce

Base: Oval 1-1/8 x 1-3/4 inches, and 5/8 x 1-1/8 inches

Finish: Tooled prescription lip

Method of Manufacture: Blown in two-piece cup mold
Figure 27d and e (Continued)

Embossing: Base of bottle 27e is marked W.T. & Co. for Whitall, Tatum & Co., a major manufacturer of pharmaceutical ware which operated under that name from 1857 to 1938 (Toulouse 1971: 544; Whitall, Tatum & Co. 1971: 73-78)

Date Range: Bottle 27d dates from about the 1860s to the 1920s, on the basis of national trends in manufacturing techniques and materials. The terminal date of bottle 27e is probably around 1912, the year Whitall Tatum instituted machine manufacture of narrow-necked bottles (Toulouse 1971: 547; Whitall, Tatum & Co. 1971: 78).

Not Shown

One clear glass mold-blown bottle neck, 1-1/2 inches tall and 7/8 inch in diameter, with a tool-finished prescription lip and remnants of a squared round shoulder. This probably came from a round or oval prescription bottle with a capacity of one half pint or more (cf. Illinois Glass Co. 1965: 7-8).

Date Range: 1860s-1920s
Figure 28a

Oil panel bottle. Whitall, Tatum & Company's 1880 catalogue (1971: 46) lists this bottle as a "cod liver oil" or "long neck panel." Illinois Glass Co. (1965: 12, 21) and Putnam (1965: 52-56) refer to similar styles as "Mississippi oil panels" and "caster oil panels."

Number of Specimens: 1
Color: Clear
Height: c. 6-3/4 inches
Estimated Capacity: 4 ounces
Base: 1 x 2-1/8 inches
Finish: Tooled oil collar
Figure 28a (Continued)

Method of Manufacture: Blown in two-piece cup mold; paneled on four sides

Embossing: Base marked 110

Date Range: 1860s through full-scale automation in the 1920s. Jones (1971b: 10) and Lorrain (1968: 40) date the first paneled medicine bottles to shortly after the Civil War; Switzer, however, reports paneled embossed bottles from the slightly earlier (1865) wreck of the steamer Bertrand (Switzer 1974: 69-70).

Figure 28b and c

Ball neck panel bottles (Whitall, Tatum & Co. 1971: 16; Illinois Glass Co. 1965: 11; Putnam 1965: 47, 48. Illinois Glass and Putnam distinguish between "short ball necks" such as Figure 28b and "tall ball necks" like Figure 28c)

Number of Specimens: 2

Color: Clear

Height: 6-1/4 and 5-1/8 inches

Estimated Capacity: 4 ounces and 2 ounces

Base: 1-1/8 x 2 inches; 3/4 x 1-3/4 inches

Finish: Tooled extract lip. Bottle 28b has cork closure still in place

Method of Manufacture: Blown in two-piece cup mold; paneled four sides

Embossing: Base of bottle 28b is marked W, and base of 28c is marked 12

Date Range: 1860s-1920s (Lorrain 1968: 40; Davis 1949: 215)

Figure 28d


Number of Specimens: 1

Color: Aqua. This type of plain extract bottle is apparently one of the few forms for which aquamarine remained a conventional color even after most other pharmacy bottles were made of clear glass (Jeter and Teal 1976: 24, 28).
Figure 28d (Continued)

Height: 4-1/4 inches
Capacity: 1 ounce
Base: 5/8 x 1-1/4 inches
Finish: Tooled extract lip
Method of Manufacture: Blown in two-piece mold with separate flat base; paneled four sides
Embossing: None
Date Range: 1860s-1920s (Lorrain 1968: 40; Davis 1949: 215)

Free-Blown Bottles

Figure 29

Number of Specimens: 2
Color: Aqua
Height (broken; left to right): 1-3/4 inches, and 1-3/8 inches
Capacity: Unknown. Cylindrical apothecary's vials apparently came in both tall and squat sizes, with capacities ranging from 1/2 to 8 ounces (McKearin and Wilson 1978: 281, 288).
Shoulder Diameter: c. 2-1/2 and 2 inches
Finish: Wide prescription lip, folded out from neck rather than shaped with specialized lipping tool.
Embossing: None
Date Range: Eighteenth through mid-nineteenth century (Noël Hume 1978: 73-75; McKearin and Wilson 1978: 286-291). McKearin and Wilson illustrate bottles of this type dating as late as the 1850s.

Thin-walled elongate tapered neck, possibly from globular apothecary's bottle (McKearin and Wilson 1978: 191, 246).

Number of Specimens: 1
Color: Aqua
Height (broken): 3-3/8 inches
Method of Manufacture: Free-blown
Embossing: None
Date Range: Early nineteenth century. Globular long-necked bottles, the larger sizes for beverages and the smaller apparently for medicines and essences, were made throughout the late eighteenth and early nineteenth centuries. The collared finish, however, did not come into general use until about 1820 (McKearin and Wilson 1978: 247, 257; McKearin and McKearin 1966: 428, Pl. 224).
Figure 30


Number of Specimens: 3

Color: Aqua

Height: (broken; left to right): 2-3/4, 1-7/8, and 1-1/4 inches

Diameter: 2-1/2, 2-1/8, and 1-3/4 inches

Method of Manufacture: Free-blown or dip-molded for body shape. All three have ring-shaped "blowpipe pontil marks" (Jones 1971a: 69-71; Toulouse 1968: 149-230), and base 30a has a 1-1/2 inch-deep push-up made with a small round-tipped instrument.

Embossing: None

Date Range: Eighteenth through mid-nineteenth century. The blowpipe pontil, which Jones (1971a: 70) says was used only on smaller bottles, continued in use until at least the 1860s (Toulouse 1968: 139).
These bottles were sold by a Charleston pharmacy that operated from Tradd Street and (later) Meeting Street for over 75 years. The pharmacy appears to have been founded in 1835 by Charles H. Panknin, who ran it for 25 years before taking Charles F. and J. W. Panknin, presumably his sons, into the business as "clerks" (Charleston City Directories 1835: 65 and 1860: 10). In 1867 Charles F. Panknin began operating the shop in his own name, with his brother J. W. working as druggist (Charleston City Directory 1867: 31, 331). According to 1878 and 1882 city directory advertisements, Panknin's carried drugs, chemicals, perfumery, toilet articles, and mineral water, with their "prescription department a specialty." In 1902 or 1903 Charles Panknin changed the name of his business to Panknin Drug Company (Charleston City Directory 1903: 634). By 1910 it had been sold to a George H. Thompson, who operated it as Panknin's Pharmacy until 1912 (Charleston City Directory 1910: 629 and 1912: 315), after which the listing no longer appears.

The embossed Panknin bottles recovered from the Middleton privy are marked "C. F. Panknin apothecary," which places them in the 1867-1903 period when Charles F. Panknin was running the pharmacy in his own name. All are blown in molds with changeable name plates, a common procedure for small drug companies who found this method of personalizing prescription bottles more cost-efficient than ordering private molds (Munsey 1970: 174; Whitall, Tatum & Co. 1971: 8-12).
Figure 31a and b

Philadelphia oval prescription bottles (Whitall, Tatum & Co. 1971: 8, 12; Illinois Glass Co. 1965: 8)

Number of Specimens: 4

Color: Clear

Height: 6 inches (two specimens) and 4-1/8 inches (two specimens)

Capacity: 6 and 2 ounces

Base: Oval 1-5/8 x 2-3/8 inches; and 1-1/8 x 1-3/4 inches

Finish: Tooled prescription lip

Method of Manufacture: Blown in two-piece plate mold with slight cup base

Embossing: C. F. PANKNIN / APOTHECARY / CHARLESTON SC. Bases of all four specimens are marked W. T. & Co. Mold identification letters beneath the manufacturer's marks are E and H on the two 6-ounce bottles, and AD on one of the 2-ounce bottles.

Date Range: 1868-1903. Since Whitall, Tatum & Co. (1971: 76) did not begin its plate-molding operation until 1868, these bottles cannot date before that year.

Figure 31c and d


Number of Specimens: 3

Color: Clear

Height: 4-1/8 inches (two specimens) and 3-3/8 inches (one specimen)

Capacity: 2 and 1 ounce

Base: 1-3/8 x 1-3/8 inches; 1-1/8 x 1-1/8 inches

Finish: Tooled prescription lip

Method of Manufacture: Blown in two-piece cup-bottom plate mold

Embossing: C. F. PANKNIN / APOTHECARY / CHARLESTON SC. The base of one 2-ounce bottle is marked E

Date Range: 1867-1903

86
Double Philadelphia oval medicine bottle (Munsey 1970: 177; Adams 1969: 39). Bottles of this shape were apparently also known as French ovals (Switzer 1974: 69-70) and elixirs (Illinois Glass Co. 1965: 9).

Number of Specimens: 1

Color: Amber

Height: 7-1/2 inches

Capacity: 16 ounces

Base: Flattened oval 2-1/4 x 3-3/8 inches

Finish: Tooled bead lip with beveled interior
Method of Manufacture: Blown in two-piece post mold

Embossing: THE / MALTINE / MF'G. CO. / CHEMISTS / NEW YORK; base marked 14

Date Range: 1875-1898. The Maltine Manufacturing Co., a manufacturer of pharmaceutical and medicinal products, was established in New York in 1875. In 1898 it was acquired by a new corporation named the Maltine Co., which operated out of New York and New Jersey until 1952, when it became the Warner-Chilcott Laboratories of the Warner-Lambert Corp. (Moody's Investors Service 1947: 2075; 1952: cx; and 1957: 1965).

Figure 32b

Bromo-Seltzer bottle (Illinois Glass Co. 1965: 10; Putnam 1965: 37). Despite its conventionalized shape, this bottle probably contained Bromo-Caffiene, a popular patent medicine that was on the market a number of years before Bromo-Seltzer was introduced in 1887 (Hough 1976: 91; Brand Names Foundation 1947).

Number of Specimens: 1
Color: Light cobalt blue
Height: 6 inches
Capacity: 6 ounces
Base Diameter: 2-1/8 inches
Finish: Tooled bead lip

Method of Manufacture: Blown in two-piece cup mold

Embossing: Around shoulder, KEASBEY & MATTISON CO. AMBLER PA; base marked D. Shoulder embossing, like the more popular plate molding, could apparently be done for either large or small orders of bottles. Whitall Tatum's 1880 catalogue (1971: 9, 18, 19) includes an offer to letter the shoulders of certain types of cylindrical bottles "at small extra cost."

Date Range: 1882-1920s. The Keasbey & Mattison Co. was founded as a pharmaceutical manufacturing company in Philadelphia in 1873. In 1882 the firm moved to Ambler, Pennsylvania, to take advantage of magnesium-bearing dolomite deposits for the manufacture of its principal product, Bromo-Caffiene. Bromo-Caffiene was a national and international success, but in 1897 Keasbey & Mattison began to diversify into asbestos and other non-medicinal products, and by 1914 the company was the largest manufacturer of asbestos and magnesia products in the world. In 1934 Keasbey & Mattison was purchased by Turner Newall, Ltd., which dissolved the subsidiary.
in 1962 (Hough 1976: 90-94). Although Keasbey & Mattison continued to manufacture magnesia-based medicines at least until the 1930s (Moody's Investors Service 1926: 1591 and 1936: 1888), manufacturing techniques date this bottle to the 1920s or earlier. Similar bottles have been recorded from the company's 1873-1882 Philadelphia period (Adams 1971: 105).

Figure 32c

Octagonal medicine bottle (Adams 1971: 73). Putnam (1965: 57) lists a similar shape as "fluted extract."

Number of Specimens: 1
Color: Blue-green
Height: 5-3/4 inches
Capacity: 8 ounces
Base Diameter: 2-1/4 inches
Finish: Tooled extract lip
Method of Manufacture: Blown in two-piece cup mold
Embossing: Church-window frame enclosing W monogram above vertical RUMFORD / CHEMICAL WORKS; on base, PATENTED / MARCH 10 1868. This patent (U. S. Patent Office 1869: 678) was issued for Horsford's Acid Phosphate of Lime, a concentrate that in a dilute and sweetened form was suggested as a treatment for nervous conditions ranging from dyspepsia to "night sweats of consumption" (Herskovitz 1978: 15). Horsford's Acid Phosphate was taxed by the Internal Revenue Service as proprietary medicine (Dennis 1973: 24), but may have owed much of its popularity to a secondary role as a relatively harmless flavored drink.

Date Range: Rumford Chemical Works, still in operation, was founded as a partnership between two academicians, George F. Wilson and Eben N. Horsford, and was named for the eighteenth century British-American physicist Benjamin Thompson, Count Rumford. The company opened in 1854 as the George F. Wilson Co. of Massachusetts, and in 1865 was incorporated as Rumford Chemical Works of East Providence, Rhode Island (Dennis 1973: 25-27; Moody's Investors Service 1947: 2086). Rumford manufactured a wide variety of phosphate-based products, the best-known of which is probably Rumford Baking Powder, introduced in 1890 and still on the market (Munsey 1970: 275; Dennis 1973: 25-27).
Without a date for removal of Horsford's Acid Phosphate from the market, maximum range for this bottle is from the 1868 patent through full automation of the glass industry in the 1920s. Horsford's Phosphate was sold at least as late as 1895, when it was advertised in the Harrod's Stores catalogue (1972: 1076). According to Dennis (1973: 24), however, this type of bottle, with the company name reading from base to shoulder rather than shoulder to base, was one of the earlier Horsford's Phosphate containers, probably dating before the 1890s.

Other Embossed and Specialized Bottles

Figure 33a


Number of Specimens: 1
Color: Amber
Height: 4 inches
Estimated Capacity: 2 ounces
Figure 33a (Continued)

Base: 1-3/8 x 1-3/8 inches

Finish: Tooled bead lip

Method of Manufacture: Blown in two-piece plate mold with slight cup base

Embossing: Vertical ••• hin in Gothic script. This lettering and the original contents of the bottle are unidentified.

Date Range: 1860s-1920s, on the basis of bottle shape and manufacturing techniques (Lorrain 1968: 44; Davis 1949: 215).

Figure 33b

Quilted poison bottle (Whitall, Tatum & Co. 1971: 19; Munsey 1970: 163-164)

Number of Specimens: 1

Color: Cobalt blue

Height: 3-1/4 inches

Capacity: 1 ounce

Base Diameter: 1-1/4 inches

Finish: Tooled prescription lip

Method of Manufacture: Blown in two-piece mold with slight cup base

Embossing: Except for a 1-1/4 x 2-inch label blank, the entire body surface is covered with a network of raised interconnected diamonds. According to Munsey (1970: 161), the absence of a basemark means that this bottle was made by Whitall, Tatum & Co., since the only other producer, Hagerty Brothers of New York, used an H.B. Co. basemark.

Date Range: 1872-1920. Whitall Tatum began manufacturing quilted blue poison bottles in response to an 1872 American Medical Association recommendation that poison bottles be distinctively colored and rough to the touch (Munsey 1970: 161). In its 1880 catalogue (Whitall, Tatum & Co., 1971: 19), the company suggested that these bottles be used for liniments and "the various poisonous articles, as Laudanum, Corrosive Sublimate, Oxalic Acid, Oil of Vitriol, &c., which are likely to be kept in the family medicine closet." Oddly shaped and colored poison bottles continued in use until the 1930s, but according to Munsey (1970: 161) the quilted Whitall Tatum bottle was only produced until 1920.

Number of Specimens: 1
Color: Clear lead glass (Daniel 1971: 101)
Height: 2-1/2 inches
Estimated Capacity: 4 drams
Base Diameter: 7/8 inches
Finish: Straight ground lip above molded ring collar

Method of Manufacture: Two-piece blow-back mold with separate base. The blow-back mold, used for complex finishes such as screw threads, formed the outer lip as well as the neck of the bottle. A hollow in the top part of the mold allowed the glass to be blown thin and cracked off above the lip, which was then ground smooth (Toulouse 1969: 583-584).

Embossing: BULLOCK & // CRENSHAW // PHILA. A: This firm, which advertised itself as "wholesale druggists and manufacturers of sugar-coated pills" (Philadelphia City Directory 1880), is listed in Philadelphia city directories from 1850 to 1890. It is not listed between 1890 and 1900, but it may have been in operation as late as 1901, when a new directory entry reads "estate of Bullock & Crenshaw" (Philadelphia City Directories 1850-1901; William Felker, personal communication).

Date Range: Maximum range is the company's period of operation, 1850-1901. The blow-back process by which the vial was made was common during roughly the same time span. Although it had apparently been known beforehand, use of the blow-back mold became widespread, predominantly in the fruit jar industry, after its inclusion in John Mason's 1858 patent for the "vanishing thread" jar seal (Scoville 1948: 17; Toulouse 1977: 90, 106, 116). By the beginning of the twentieth century, however, most fruit jar manufacturers had converted to semiautomatic pressing-and-blowing machines, which formed the entire vessel including the top of the lip (Scoville 1948: 324-325). Blow-back molding of smaller wares may have continued until full automation in the 1920s, but the fact that this vial appears to be of lead glass rather than the improved lime glass typical of the later nineteenth century (Scoville 1948: 22, 89) suggests a manufacture date in the 1850s or 60s.
Cosmetic and Ointment Jars

Figure 34a

Screw top ointment (Illinois Glass Co. 1965: 18; Putnam 1965: 93)

Number of Specimens: 1

Color: White milk glass

Height: 1-1/4 inches

Capacity: 1/2 ounce

Base: Deeply indented, 1 inch diameter

Finish: Pressed continuous thread

Method of Manufacture: Pressed in two-piece mold with separate base

Embossing: On base, Aubry Sisters / May 15 1916. Patent records for this date show neither the Aubry Sisters trademark nor specifications for any product likely to be packaged in a container of this sort. May 15, 1916, may have been a commemorative date, or perhaps a spurious patent date intended to increase the prestige of the product.

Date Range: Post-1916
Figure 34b

Round patch box with lid (Illinois Glass Co. 1965: 18; Whitall, Tatum & Co. 1971: 25, 63; Lee 1960: 80). A patch box is a small lidded box made in any of a number of shapes and materials. The name derives from use of such boxes to hold the adhesive facial patches or "beauty spots" fashionable in the seventeenth and eighteenth centuries. By the late nineteenth century, heavy round patch boxes like this one apparently usually served as ointment pots (Whitall, Tatum & Co. 1971: 63; Herskovitz 1978: 113). They often contained cold cream, which was considered a healing ointment as well as a cosmetic cream (Sears, Roebuck & Co. 1968: 26). Whitall Tatum (1971: 25) also advertised this shape as a tooth powder box.

Number of Specimens: 1
Color: White milk glass
Height (with lid): 1-3/8 inches
Capacity: 1 ounce
Base Diameter: 3 inches
Finish: Straight pressed lip with outer ledge to support lid
Method of Manufacture: Pressed in one-piece mold with separate base
Embossing: None

Date Range: Probably late nineteenth or early twentieth century, although available sources do not allow close dating on stylistic or technological grounds. Glass pressing was introduced in the 1820s and, despite increasing mechanization, the basic technique changed little throughout the century (Scoville 1948: 18, 151; Douglas and Frank 1972: 40). The heyday of decorative pressed glass, however, was the second half of the nineteenth century (Lee 1960: 3-5), and it seems likely that widespread use of utilitarian pressed glass containers also began in that period. Round pressed glass patch boxes identical to this one were on the market at least by 1880 (Whitall, Tatum & Co. 1971: 63; Lee 1960: 80) and were sold as late as 1904 (Illinois Glass Co. 1965: 18).
Pharmaceutical Accessories

Figure 35a

Curved clear glass medicine dropper or pipette (Illinois Glass Co. 1965: 24; Whitall, Tatum & Co. 1971: 56). This item is free-blown, with a flange on the upper end to secure a rubber bulb.

Number of Specimens: 1

Figure 35b

Clear glass stopper, 1-1/2 inches tall and 1/2 inch in maximum diameter, with ground shaft and molded head. The 1880 Whitall Tatum catalogue (1971: 6) calls this stopper a "Lubin," and advertises it and other styles for use with prescription bottles.

Number of Specimens: 1

Not Shown

Two partly decomposed corks, one tapered, 5/8 inch tall, and 5/8 inch in maximum diameter, probably intended for a standard prescription bottle; the other, flat and about 3/8 inch tall and 1-3/8 inches in diameter, was meant for a wide-mouth bottle or jar (Whitall, Tatum & Co. 1971: 7, 68).
Although olive oil, pickles, and other cold-preserved foods have been stored in glass and ceramic containers since antiquity, the preserving of cooked foods in airtight bottles or jars is a comparatively recent development. The first foods to be so treated were fruits, which according to McKearin and Wilson (1978: 248-249) were cooked and bottled in their own syrups by the sixteenth century. By the eighteenth century, British housewives had learned to preserve fruits by boiling them in glass containers that were subsequently corked and sealed with wax, glue, or pitch (Lief 1965: 6; Douglas and Frank 1972: 171; McKearin and Wilson 1978: 249). This process was extended to meats and vegetables in 1809, when Nicholas Appert, a French confectioner, won a prize from the Napoleonic government for his success in preserving over 50 different kinds of foods by boiling in pre-sealed glass jars (National Canners Association 1957: 10). Appert's techniques were published the following year in England, where commercial canning was immediately undertaken to supply food for British soldiers and sailors as well as the civilian population. In America, the first commercial canneries began packing seafood and fruit in New York and Boston around 1820 (National Canners Association 1957: 5-6; Toulouse 1977: 98).

A major problem with Appert's method of preserving in glass was the irregular finish of hand-made bottles, which often prevented the cork stopper from forming a completely airtight seal. For commercial packers, an early and lasting solution was the tin-plated canister, patented in England in 1810.
and in the United States in 1825 (National Canners Association 1957: 5-6). Experimentation with mass-produced closures for glass containers, however, did not begin in earnest until the 1850s. The most successful of these, John Mason's 1858 shoulder-sealing zinc screw cap, made fruit jar manufacture into a major industry and remained a popular home canning lid well into the twentieth century (Toulouse 1977: 89-96). The commercial canning industry also expanded rapidly after the Civil War, but aside from traditionally bottled foods like condiments, preserves, and oils, most commercially packed foods were sold in the cheaper and more easily sealed metal cans. Despite continual improvements in glass packaging and sealing, it was not until the development of the vacuum seal in the 1930s that packaging of a variety of foods in glass became economically competitive with canning in metal containers (National Canners Association 1957: 6-7; Lief 1965: 20-34).

Figure 36a

American one-pound preserve (Illinois Glass Co. 1965: 46)

Number of Specimens: 1
Color: Clear
Height: 5 inches
Capacity: 12 ounces. This jar was apparently produced in no other size (Illinois Glass Co. 1965: 46).
Base Diameter: 2-7/8 inches
Finish: Tooled bead lip. The catalogue specifies no particular lid for the American preserve, but this finish could have accommodated several different closures, including cork or a waxed paper cover tied at the neck.

Embossing: None

Date Range: 1860s-1920s, on the basis of manufacturing techniques and glass color and composition (Scoville 1948: 22). Illinois Glass Co. advertised the American preserve in 1904, but seems to have stopped making it by the second decade of the twentieth century. It is not listed in Putnam's Bottle Identification, a reprinted Illinois Glass catalogue that appears to date shortly after the company's introduction of automatic machinery in 1909 (Putnam 1965: 55, 59; Toulouse 1972: 265).

Figure 36b and c

Olive oil bottle fragments (Illinois Glass Co. 1965: 44; Sears, Roebuck & Co. 1968: 13; Adams 1971: 36). Although the neck fragment shown in Figure 36c may not be from the same bottle as Figure 36b, this type of very long extract neck is usually found on food bottles.
and is typical of olive oil bottles like 36b (e.g., Adams 1969: 75 and 1971: 62).

Number of Specimens: 2

Color: Aqua

Height (broken): Body fragment is 5 inches high at the shoulder; neck measures 3 inches from shoulder to lip. The neck flares at the bottom into a curved shoulder.

Estimated Capacity: 6 ounces

Diameter: Base diameter is 1-3/4 inches. Neck diameter below the lip is 3/4 inch.

Finish: Tooled extract lip with remnants of paper label. Olive oil bottles were also sometimes finished with oil collars (Illinois Glass Co. 1965: 44; Putnam 1965: 208-209).

Method of Manufacture: Figure 36b, "whittle-marked" from contact with unheated metal (Toulouse 1977: 143), was blown in a two-piece cup mold. The neck in Figure 36c, with vertical mold lines extending its entire length, was blown in a full-size piece mold with either two or three parts.

Embossing: None

Date Range: Maximum range, based on manufacturing techniques, is from the 1850s through the 1920s. The smoothly applied tool-finished lip suggests that fragment 36c, at least, is of post-Civil War manufacture. Switzer (1974: 64) illustrates free-blown imported bottles of this shape from the 1865 wreck of the steamer Bertrand.
Figure 37

Armour's beef extract jar. The drawing on the right, reproduced from a 1920 sales catalogue, shows this container with its original label and closure (Armour & Co. 1920: 222). Illinois Glass Co. (1965: 47) also illustrates a similar small jar for "solid beef extract."

Number of Specimens: 1

Color: White milk glass

Height: 2-1/4 inches

Capacity: 2 ounces

Base Diameter: 1-7/8 inches
Finish: Straight channeled lip. In the 1920 advertisement reproduced above, the jar appears to be closed with a tear-off foil cap or band, possibly with a reusable liner.

Method of Manufacture: Pressed in two-piece mold with separate base. According to Douglas and Frank (1972: 41), many meat paste jars after the early 1890s were produced using a semiautomatic press-and-blow process. This method of manufacture probably left much the same mold marks as simple pressing.

Embossing: On base, ARMOUR & CO / PACKERS / CHICAGO enclosed in shield emblem

Date Range: c. 1900-1920s. Armour & Co. was based in Chicago from 1867 until 1971, when its headquarters moved to Phoenix, Arizona (Armour & Co. 1979: 1-2). The company first marketed beef extract in England in 1885 (Leech and Carroll 1938: 48), but according to Harmon Wray, a retired Armour regional manager who has researched the firm's history and products, solid beef extract was sold in this container only during the first two and a half decades in the twentieth century. The shield emblem, also according to Wray, was the company's official logo from about 1890 to the 1930s, but continued to appear on a few products for some years after that.

Ink, Glue, and Polish Bottles

Figure 37 (Continued)
Figure 38a


Number of Specimens: 1
Color: Aqua
Height: 5-3/8 inches
Capacity: 4 ounces
Base: 1-3/4 x 1-3/4 inches
Finish: Tooled extract lip
Method of Manufacture: Blown in two-piece mold with slight cup base
Embossing: Around shoulder, TAPPAN'S // RELUCENT // WASHINGTON // D.C.

Date Range: Tappan's Relucent was a gold and silver polish manufactured by William S. Tappan, a jeweler who operated in Washington, D. C. from 1866 to 1918. Although the product may have been on the market at an earlier date, Tappan listed himself as manufacturer of the polish only in the 1906-1918 Washington City Directories (Washington City Directories 1866-1918).

Figure 38b

Bell mucilage bottle (Illinois Glass Co. 1965: 23; Putnam 1965: 59)

Number of Specimens: 1
Color: Aqua
Height: 3 inches
Capacity: 2 ounces
Base Diameter: 2-1/4 inches
Finish: Tooled straight lip with inner ledge and ground inner neck; apparently meant to accommodate tightly-fitting internal stopper.
Method of Manufacture: Blown in two-piece cup mold
Embossing: None

Date Range: 1850s-1920s, on the basis of manufacturing techniques. Chance and Chance (1976: 140) note a similar bottle from a c. 1885 context.
Figure 38c

Cone ink bottle (Illinois Glass Co. 1965: 14; Adams 1971: 131, 133)

Number of Specimens: 1

Color: Amber

Height: 2-1/2 inches

Capacity: 2 ounces

Base Diameter: 2-1/2 inches

Finish: Tooled bead lip

Method of Manufacture: Blown in two-piece cup mold

Embossing: None

Date Range: 1850s-1920s. The cone ink bottle, along with pyramidal and squat polygonal shapes, was probably introduced in the 1840s (McKearin and Wilson 1978: 267), but manufacturing techniques suggest at least a slightly later date for this bottle. The terminal date is based both on the 1920s ascendancy of automated manufacturing techniques and on Munsey's (1970: 121) contention that screw caps replaced corks as the favored ink bottle closure during that decade.
Cylindrical British stoneware ink or blacking bottle (Noël Hume 1970: 78; Switzer 1974: 68; Munsey 1970: 138). Munsey (1970: 120) refers to ink bottles this size and larger as "master inks," bulk containers from which smaller desk-top ink bottles and wells were filled.

Number of Specimens: 1

Color: Gray-bodied brown salt-glazed stoneware with red-slipped interior

Height (broken at shoulder): 4 inches

Estimated Capacity: 10 ounces

Base Diameter: 2-3/4 inches

Neck and Lip: Missing. Like many of the glass master ink bottles (Illinois Glass Co. 1965: 14, 23), large stoneware inks usually had narrow necks with pinched pouring lips, while blacking bottles came with broad, slightly flared necks and straight lips (Noël Hume 1970: 78-79; Adams 1971: 65).

Method of Manufacture: Wheel-turned

Embossing or Stamping: None

Date Range: c. 1840-1890. Brown salt-glazed stoneware was imported from England as early as the seventeenth century, but cylindrical household bottles such as this one were products of the middle and late 1800s (Noël Hume 1970: 79, 114). Although Webster (1972: 27) says that British-made ink and blacking bottles could still be obtained in the early twentieth century, Noël Hume dates "the vast majority" of these bottles to the period 1840-1890.


Number of Specimens: 1

Color: Clear, with traces of blue ink on interior

Height: 2-1/2 inches

Capacity: 2 ounces

Base Diameter: 1-7/8 inches

Finish: Machine-molded bead lip. A separately recovered ink-stained cork (not shown) may be from this bottle.
Figure 39b (Continued)

Method of Manufacture: Machine-made

Embossing: Base marked 3

Date Range: c. 1904-1920s. 1904 is the date of the first Owens machine-made bottles (Walbridge 1920: 71-72). The 1920s closing date is derived from Munsey's (1970: 121) dating of cork closures on ink bottles.

Figure 39c


Number of Specimens: 1

Color: Clear

Height: 2-1/2 inches

Capacity: 1-1/2 ounces

Base Diameter: 2-1/2 inches

Finish: Machine-molded bead lip designed for cork stopper

Method of Manufacture: Machine-made

Embossing: on base, CARTER'S / MADE IN USA. Carter's Ink Co., now a subsidiary of the Dennison Manufacturing Co. of Framingham, Massachusetts, began bottling ink in Boston in 1858 (Carter's Ink Co. 1975: 1).

Date Range: c. 1904-1920s (Walbridge 1920: 71-72; Munsey 1970: 121)
**Table Glass**

**Stemmed Drinking Glasses**

Figure 40a

Fluted ale or champagne glass (Webber 1973: 135; Hughes 1956: 374; Daniel 1971: Pl. 48 and 53). A line drawing of a complete specimen of this type of glass, reproduced from Webber 1973: 135, is shown in Figure 41a.

Number of Specimens: 1

Color: Clear

Height (broken): 3-3/4 inches. The complete glass would probably have been about 7 inches tall (Webber 1973: 136; McKearin and McKearin 1966: 154).

Capacity: Unknown

Base Diameter: 3 inches

Method of Manufacture: Free-blown, with wheel cut decagonal fluted bowl. Free-formed applied stem with bladed knop (Webber 1973: 34), and applied base with ground and polished pontil mark.
Date Range: c. 1810-1840 (Hughes 1956: 374). According to Webber (1973: 134-136), tall cut glass ale and champagne flutes developed out of similar molded flute glasses popular in the late eighteenth century. They were replaced in the later nineteenth century by a variety of specialized wine and liquor glasses with broader, shallower bowls.

"Almond thumbprint" pattern wine or cordial glass (Lee 1960: 186-191, Pl. 154; Revi 1964: 86).

Number of Specimens: 1
Color: Clear
Height: 4-1/8 inches
Estimated Capacity: 2 ounces
Base Diameter: 2 inches
Method of Manufacture: Pressed in three-piece mold

Date Range: Pressed glass tableware in patterned sets was first made in abundance in the 1840s (Lee 1960: 5; McKearin and McKearin 1966: 394), and Lee (1960: 183) dates the introduction of the various thumbprint patterns to the 1860s or earlier. According to Lee, Almond Thumbprint was issued in a number of variations by different companies; Revi (1964: 86) shows it issued by Bryce Brothers and United States Glass Co. at least as late as the 1890s.

"Mascotte" pattern cordial or wine glass (Lee 1944: 122, Pl. 42 and 43; Revi 1964: 293; Kamm 1946: 17). Figure 41b, taken from Lee (1944: Pl. 42), shows this glass as it would have appeared unbroken.

Number of Specimens: 1
Color: Clear
Height (broken): 2-1/8 inches. Height of the original vessel was probably about 4 inches.
Capacity: 1-1/2 ounces
Bowl Diameter: 1-3/4 inches
Method of Manufacture: Pressed in three-piece mold

Date Range: "Mascotte" tablewares were manufactured by Ripley & Co., which operated in Pittsburgh from 1866 to 1891, and thereafter as Factory F of the amalgamated United States Glass Co. (Lee 1944: 122; Revi 1964: 293-294, 306-310). The pattern was first produced in the 1870s or 80s (Lee 1944: 122; Kamm 1946: 17; Revi 1964: 294), and, according to Revi (1964: 316), was re-issued by the United States Glass Co. around 1895.
Tumblers

Figure 42a

Banded pressed glass tumbler (Butler Brothers 1905: 147, 150; Butler Brothers 1910: 404). The 1905 Butler Brothers catalogue refers to this style as "Four Band."

Number of Specimens: 1
Color: Clear
Height: 3-3/4 inches
Capacity: 8 ounces
Base Diameter: 2-1/8 inches

Method of Manufacture: Pressed in one-piece mold, with four shallow molded bands of diagonal ribbing and hatching.
Figure 42a (Continued)

Date Range: Montgomery Ward & Co. (1970: 524) advertised banded tumblers in 1894-1895, and Millard (1949: 54) assigns an 1880s date to a goblet with a diagonal "cord band," but this specific design has not been precisely dated. Judging from the number of banded tumblers advertised in the 1905 and 1910 Butler Brothers catalogues, however, the style appears to have been very popular after 1900.

Figure 42b

Thin-walled cylindrical tumbler with edge-cut (Elville 1951: 179) floral design.

Number of Specimens: 1

Color: Clear

Height (broken): 3-1/4 inches

Capacity: 8 ounces?

Base Diameter: 2-3/8 inches

Method of Manufacture: Turn-molded

Date Range: Nineteenth or early twentieth century. Turn-molding is still used in the manufacture of drinking glasses, but the extremely uneven base thickness of this tumbler suggests that it was probably mouth-blown rather than machine-made. Glasses with engraved floral motifs are illustrated in the 1897 Sears Roebuck catalogue (1968: 686), the 1894-1895 Montgomery Ward catalogue (1970: 524), and a c. 1870-1875 King, Son & Co. catalogue (Pyne Press 1972a: 38). Butler Brothers (1905: 150 and 1910: 403) also advertised "blown" cylindrical tumblers with similar engraved designs.
Figure 43a

Pressed glass tumbler with hexagonal base. The design, though not the vessel form, resembles the "Ashburton" tableware pattern (Lee 1960: Pl. 1, 3, and 8; McKearin and McKearin 1966: Pl. 205).

Number of Specimens: 1
Color: Clear
Height: 3-1/2 inches
Estimated Capacity: 6 ounces
Base Diameter: 2-1/4 inches
Method of Manufacture: Pressed in one-piece mold with separate post base

Date Range: 1840s-1860s. Ashburton and similar patterns were among the earliest non-Lacy pressed glass designs, and persisted throughout most of the late nineteenth century. Spectrographic analysis, however, indicates that the glass used for this tumbler contains a high proportion of lead, a material seldom used in pressed glass manufacture after the widespread adoption of Leighton's improved soda-lime glass in the late 1860s (Lee 1960: 7-10). Polygonal tumblers of this top-heavy shape were made at least by the 1850s (Lattimore 1979: 23).
Figure 43b

Pressed glass tumbler with 16 internal convex flutes. A squared projecting rim suggests that this may have been a capped 1/3 pint jelly tumbler like those advertised by Illinois Glass in 1903-1904 (1965: 45), Sears Roebuck in 1897 (1968: 686), and King, Son & Co. c. 1870-1875 (Pyne Press 1972a: 22).

Number of Specimens: 1

Color: Clear

Height: 3 inches

Estimated Capacity: 5 ounces

Base Diameter: 2-1/4 inches

Method of Manufacture: Pressed in one-piece mold with separate cup base

Date Range: The capped tumbler was undoubtedly most common in the late nineteenth and twentieth centuries, but this specimen cannot be closely dated. Lief (1965: 20-21) dates most commercial packaging of jellies and jams after the 1892 introduction of the Phoenix cap, but King, Son & Co. sold "patent jellies" with both tin and glass lids in the early 1870s (Pyne Press 1972a: 22).
Decanters and Pitchers

Figure 44a

Cylindrical fluted cut glass decanter (Daniel 1971: 140, 144).

Number of Specimens: 1

Color: Clear

Height: 8-3/4 inches

Capacity: 1 quart?


Distinctive markings: Crudely engraved 250 on upper lip. Edges of flutes are chipped and worn, and inner neck shows wear from glass stopper. An identical decanter marked 251 is still among the Middleton family possessions. Davis (1972: 47) notes that engraved numbers have sometimes been used to match decanters with their stoppers.
Figure 44a (Continued)

Date Range: According to Daniel (1971: 139-141, 341), heavy flute-cut decanters were typical of the period 1830-1880, with the height of their popularity in the 1840s. A few fluted patterns continued after 1880, but the cylindrical decanter shape was apparently uncommon after about 1850 (Daniel 1971: 299-302, 341; Ramsey 1961: 117-118; Coppen-Gardner 1975: 131). Webber (1973: 124) has stated that widespread use of decanters ended around the time of World War I.

Figure 44b

Fluted base from shouldered decanter (Daniel 1971: Pl. 5, 61, 66; Hughes 1956: 303)

Number of Specimens: 1

Color: Clear

Height (broken): 3 inches

Capacity: Unknown

Base Diameter: 3-3/8 inches

Method of Manufacture: Probably blow-molded, with 11 shallow wheel-cut flutes and ground and polished pontil mark.

Date Range: The shouldered decanter was apparently most common from about the 1780s through the 1830s (Hughes 1956: 262-263; Webber 1973: 219-222). Eighteenth and early nineteenth century styles were, however, frequently copied during the Victorian period (Webber 1973: 222-224), and an 1895 Harrod's Stores (1972: 534) advertisement suggests that shouldered and fluted variations of these early decanters were produced at least until the end of the century.
Figure 45

Cut glass milk pitcher (Daniel 1971: Pl. 5, 52)

Number of Specimens: 1

Color: Clear

Height (broken): 6-1/2 inches

Capacity: Unknown

Maximum Diameter: c. 4-1/2 inches

Method of Manufacture: Probably free-blown. Tool-finished spout and applied ribbed handle with crimped tail.

Date Range: The shape and decoration of this pitcher closely resemble those of pitchers that Daniel (1971: Pl. 5 and 52) dates to the 1820s or earlier. According to Hughes (1956: 68, 263), deep cutting like that on the lip and neck of this pitcher was seldom done before the early nineteenth century; but the crimped applied handle persisted from the eighteenth century until after the Civil War (Lee 1960: 6; Kamm 1946: 15; Webber 1973: 16).
Glass Serving Dishes

Figure 46 (a)

Figure 46 (b)
Free-blown clear glass bowls with folded everted rims. The privy excavation yielded 75 fragments that appeared to be part of these or similar vessels, the complete form of which is undetermined. The rim shown in Figure 46a is from a deep, fairly straight-sided bowl c. 12 inches in diameter and more than 4-1/2 inches deep. Rim 46b, also about 12 inches in diameter, appears to be part of a broad shallow vessel, perhaps a plate or flat serving dish. Vessels of this general style—the best known of which are probably the South Jersey "lily pad" pieces—are said to have been produced by off-duty glassblowers throughout the late eighteenth century and most of the nineteenth (McClinton 1950: 11-13).

Minimum Number of Specimens: 2

Figure 47

Clear pressed glass lid, 2 inches tall and 3-3/4 inches in diameter. While this object is probably late nineteenth or twentieth century in manufacture, neither the pattern nor the form have been identified.
Figure 47 (Continued)

Number of Specimens: 1

**Lamp Glass**

**Student Lamp Chimney**

![Image of Student Lamp Chimney]

Figure 48

Tubular chimney from kerosene-fueled student or reading lamp. (Russell 1968: 216, 219, 263; Pyne Press 1972b: 55, 56, 121; Sears, Roebuck & Co. 1968: 687). The 1895 Harrod's Stores catalogue (1972: 557) also illustrates tubular chimneys on two styles of piano lamps. Figure 49 shows a reproduction of a 1907 student lamp (Army and Navy Stores 1975) and one of the Harrod's Stores piano lamps.
Figure 48 (Continued)

Number of Specimens: 1
Color: Clear
Height: 10-1/2 inches
Base Diameter: 1-3/4 inches
Finish: Both rim and base are ground
Method of Manufacture: Turn-molded

Date Range: Kerosene, patented in 1854 by Abraham Gesner of New York, became the primary illuminating fuel of North America after the 1859 discovery of petroleum in Pennsylvania provided a cheap and abundant raw material for its production. By the mid-1860s kerosene use had far outstripped that of gas—which required immovable lamps and was in any case not available outside the cities—and it remained the only fuel available in many rural areas until electrification in the 1920s and 30s. The adjustable kerosene-fueled student lamp, patented in Prussia in 1863, reached the U. S. in the 1870s and remained a popular reading lamp into the twentieth century (Russell 1968: 131-139, 215, 317; Pyne Press 1972b: 13-15).
Figure 50

"Pearl top" lamp chimneys (Pyne Press 1972b: 112-118; Macbeth-Evans Glass Co. 1920: 73). The example on the far left, with 40 "pearls," is the only one of these chimneys that exactly fits the pearl top description, but the other three are probably contemporary variations (Pyne Press 1972b: 112-117).

Minimum Number of Specimens: 4

Color: Clear

Diameter (left to right): 2-3/4 inches, 2-1/2 inches, 2-3/8 inches, 2-7/8 inches. Fourteen fragments of lamp glass, and a base fragment with diameter of 2-7/8 inches were also recovered.

Method of Manufacture: Turn-molded, with rim decoration formed in a separate mold after annealing (Davis 1949: 230-231).

Date Range: The "pearl top" design, used on various types of lamps, was patented in 1883 by the George A. Macbeth Co., which merged with the Thomas Evans Co. in 1899 to become the nation's largest producer of lamp chimneys (Macbeth-Evans Glass Co. 1920: 34; Pyne Press 1972b: 111). Although the Thomas Evans Co. had in 1877 acquired a patented "crimping machine" for molding scalloped rims, labor disputes delayed its use (Davis 1949: 155; Pyne Press 1949: 230-231).
Figure 50 (Continued)

1972b: 111), and Russell (1968: 225–283) says that ornamented chimney tops did not come into fashion until around the time of the pearl top patent. At the time of its 1899 opening, the Macbeth-Evans Co. bought rights to a semiautomatic Owens turn-molding machine, but the semiautomatic process, although speedier, differed little from the hand-molding procedure described under "Method of Manufacture" above (Macbeth-Evans Glass Co. 1920: 39; Davis 1949: 230–238). Lamp chimneys were produced on semiautomatic machines until at least the end of the 1920s (Davis 1949: 238), and pearl top and similar kerosene lamp chimneys are still made.

Laboratory Glass
Figure 51

Possible laboratory beaker (Whitall, Tatum & Co. 1971: 36; Macbeth-Evans Co. 1920: 85). McKearin and McKearin (1966: 113, Pl. 41) also illustrate a late eighteenth century tumbler or dessert glass of similar form and dimensions.

Number of Specimens: 1

Color: Very clear glass, with gray-green hue in breaks and base area. The transparency and tint of this glass are strikingly different from those of any other clear glass recovered from the Middleton Place privy.

Height: 4 inches

Estimated Capacity: 8 ounces

Base: 2-1/4 inches in diameter, with sand pontil mark

Method of Manufacture: Probably turn-molded, with widely everted tool-formed lip rolled upward and inward to form smooth surface.

Date Range: The ideal properties of laboratory glass are low thermal expansion to permit rapid heating and cooling, and chemical stability to prevent the glass from reacting with its contents (Evans and Weeden n.d.: 10). Although chemists expounded the need for such a glass as early as the eighteenth century (Eklund 1965: 7; Macbeth-Evans Co. 1920: 84), glassmakers through most of the nineteenth century could offer little better than variations on ordinary soda-lime glass, which is subject to attack by acids, or lead glass, which is corrosible in alkaline solutions (Whitall, Tatum & Co. 1971: 33; Macbeth-Evans Co. 1920: 84-87; Encyclopedia Britannica 1879 [10]: 663,667). It was not until the early 1880s that experiments with optical glass in Germany produced a low-alkali borosilicate glass that was also satisfactory for laboratory work (Evans n.d.: 15; Douglas and Frank 1972: 69, 85-89). Borosilicate glass, still the material of most chemical and laboratory ware, came into widespread commercial and domestic use in the United States after the Corning Glass Works introduced Pyrex in 1915 (Douglas and Frank 1972: 197).

Spectrographic analysis of this vessel is inconclusive, but it indicates that the glass may contain a high percentage of lead, perhaps as much as 30%. It if is a laboratory beaker, it probably dates before about 1920, when laboratory vessels made from acid- and alkali-resistant borosilicate glass became more generally available (Macbeth-Evans Glass Co. 1920: 84-87; Jonathan Eklund, personal communication). Although some laboratory holloware is still mouth-blown (Evans and Weeden n.d.: 10), the amount of hand workmanship on this container also suggests a date before the mechanization of the glass industry in the 1920s. The vessel may
have some connection with Williams Middleton's son Henry, an ama-
teur scientist and inventor who lived at Middleton Place until
the 1870s.

Ceramic Kitchen and Tablewares

Earthenware

All earthenwares recovered from the Middleton Place privy are either
creamware or one of the various white-bodied ceramics developed in England
during the nineteenth century. Creamware, or queen's ware, was perfected
by Josiah Wedgwood in the 1760s, and was the standard English and American
tableware from about 1770 to the 1820s (Godden 1963: 111). Creamware has
a slightly porous cream-colored body covered by a translucent yellowish
or faintly greenish glaze, and was produced in a variety of forms, usually
either plain or decorated with hand-painted floral or linear designs. As
a dinnerware, it was largely supplanted in the early nineteenth century by
whiter-bodied wares, but undecorated cream-colored utilitarian ceramics
continued to be manufactured throughout the nineteenth century (Miller 1980:
3). Cream-colored tableware was also produced by several late nineteenth
century potteries (Hughes 1960: 119-122), and is still a major product of
the Wedgwood factory (Wedgwood Museum 1969: 35).

Creamware's first serious competitor was pearlware, a somewhat whiter
earthenware with slightly blue-tinted glaze developed by Josiah Wedgwood in
1779. Pearlware, most commonly decorated with underglaze transfer-printing,
banding, or edging, was popular in England and the United States through the
first few decades of the nineteenth century (Noël Hume 1970: 128-131). The
pearlware body and glaze were gradually lightened to produce a pure white
earthenware, although blue-tinted glazes continued on some whitewares until
at least the end of the 1870s (Miller 1980: 16-18; Godden 1972: 75).

The most common tablewares of the late nineteenth century were several
highly-fired whitewares that archeologists often classify together as "hard-
paste whitewares." Among these hard-bodied whitewares are stone china, a
heavy feldspathic earthenware developed by Josiah Spode in 1805; ironstone
china, another heavy opaque ware patented in 1813 by Charles Mason; semi-
procclain, a heavy but nearly vitreous ware introduced by George Grainger
in 1848; and white granite, an inexpensive ironstone-like ware produced
by a number of factories from the 1840s on (Hughes 1960: 155-177; Godden
1963: 31, 36, 71, 105). These ceramics are all very similar in their
near-stoneware texture, and the names were often used interchangeably on
different wares. Before about 1850 white-bodied tablewares were usually
decorated, most frequently by underglaze blue transfer-printing (Godden
1963: 11-12), but in the second half of the century heavy undecorated dinner
sets, often molded or embossed, were popular in both England and the United
States (Miller 1980: 4, 17-18; Wetherbee 1980: 18). Approximate dates of
<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
<th>Source(s)</th>
</tr>
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<tr>
<td>Overglaze transfer printing introduced at Battersea</td>
<td>1753</td>
<td>Hughes (1960: 123)</td>
</tr>
<tr>
<td>Heyday of cream-colored tablewares</td>
<td>c. 1770-1830</td>
<td>Godden (1963: 111)</td>
</tr>
<tr>
<td>Pearlware developed by Josiah Wedgwood</td>
<td>1779</td>
<td>Noël Hume (1970: 128)</td>
</tr>
<tr>
<td>First extensive use of underglaze blue transfer printing on English earthenwares</td>
<td>1780s</td>
<td>Coysh (1972: 7)</td>
</tr>
<tr>
<td>Josiah Spode begins production of modern bone china</td>
<td>c. 1800</td>
<td>Godden (1978: 179)</td>
</tr>
<tr>
<td>Spode's development of stone china</td>
<td>1805</td>
<td>Hughes (1960: 157)</td>
</tr>
<tr>
<td>Introduction of line-and-stipple transfer printing techniques</td>
<td>c. 1810</td>
<td>Hughes (1960: 127)</td>
</tr>
<tr>
<td>Greatest popularity of transfer-printed English, American, and European scenes</td>
<td>c. 1810-1840s</td>
<td>Godden (1963: 113-115)</td>
</tr>
<tr>
<td>Charles Mason ironstone china</td>
<td>1813</td>
<td>Godden (1963: 105)</td>
</tr>
<tr>
<td>Development of underglaze transfer printing techniques for red, yellow, green and black</td>
<td>c. 1828</td>
<td>Hughes (1960: 129)</td>
</tr>
<tr>
<td>Greatest popularity of light blue transfer printing</td>
<td>c. 1830s-1860s</td>
<td>Bartovics (1978: 205) Lockett (1972: 52)</td>
</tr>
<tr>
<td>Flowing color transfer printing</td>
<td>c. 1840s-1900s</td>
<td>Bartovics (1978: 205)</td>
</tr>
<tr>
<td>Introduction of inexpensive white granite china</td>
<td>1840s</td>
<td>Godden (1963: 105)</td>
</tr>
<tr>
<td>Undecorated hard-paste whitewares often molded or embossed</td>
<td>c. 1840s-1890s</td>
<td>Wetherbee (1980: 18)</td>
</tr>
<tr>
<td>Haviland &amp; Co. begins producing porcelain in Limoges</td>
<td>1842</td>
<td>Young (1972: 11)</td>
</tr>
<tr>
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<td>----------------------------------------------------------------------------------</td>
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<td>--------------------</td>
</tr>
<tr>
<td>First widespread importation of inexpensive French porcelain</td>
<td>c. 1850</td>
<td>Collar (1967: 189)</td>
</tr>
<tr>
<td>English majolica</td>
<td>c. 1850-1910</td>
<td>Hughes (1960: 200-203)</td>
</tr>
<tr>
<td>Unembossed plain hard-paste whitewares popular for home use</td>
<td>c. 1870s-1890s</td>
<td>Wetherbee (1980: 18)</td>
</tr>
<tr>
<td>First widespread importation of German and Austrian porcelain</td>
<td>c. 1875</td>
<td>Collard (1967: 193)</td>
</tr>
<tr>
<td>McKinley Tariff Act requires all imported ceramics to be marked with name of country of origin</td>
<td>1891</td>
<td>Godden (1964: 11)</td>
</tr>
<tr>
<td>Greatest popularity of German and Austrian porcelains</td>
<td>after 1900</td>
<td>Collard (1967: 193)</td>
</tr>
<tr>
<td>Kamm (1948: v)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widespread use of decal transfers for pottery decoration</td>
<td>c. 1900-</td>
<td>Lehner (1980: 13)</td>
</tr>
<tr>
<td>Transfer of Karlsbad porcelain industry from Austria to Czechoslovakia</td>
<td>1918</td>
<td>Ware (n.d.: 54)</td>
</tr>
</tbody>
</table>
introduction and use of these and other ceramics found in the Middleton Place privy deposit are outlined in Table 5. Ceramic manufacturers’ marks are illustrated in Figure 52.

Creamware

Figure 53

Creamware sauce tureen. This vessel is 7-1/4 inches in length, 5-1/2 inches in width, and decorated with a double band of overglazed brown enamel around the rim and base edges. The tureen and stand are a single piece, and would originally have had a matching cover. Although other potteries made similar creamware tureens around the turn of the nineteenth century (Lockett 1972: 35), the base of this piece is impressed WEDGWOOD, a mark used on Josiah Wedgwood & Sons creamware from 1769 to the present (Wedgwood Museum 1969: 35). The shape was apparently originated in the 1770s by Wedgwood designer John Flaxman, and is illustrated in the 1817 Wedgwood shape book (Hughes 1960: 112-113, Pl. 25 and 26). Wedgwood still produces many of these original creamware patterns (Wedgwood & Sons 1939: J-V; Graham and Wedgwood 1948: 82), but the absence in the hallmark of the word "England," used on all wares after 1891, and of a three-letter dating system introduced in 1860, suggests a pre-Civil War manufacture date (Graham and Wedgwood 1948: 84-85).

Number of Specimens: 1
Undecorated creamware baker with concave flanged rim. A baker is a flat-bottomed, relatively straight-sided, shallow oval dish used for either food preparation or serving (Herskovitz 1978: 96). Although only a fragment of the body remains, this vessel probably measured around 6 x 10 inches when intact. There is no maker's mark, but identical creamware bakers were sold by Wedgwood & Sons as late as 1950. Figure 54 shows the fragment excavated from the Middleton Place privy with a superimposed drawing, taken from the 1940–50 Wedgwood & Sons catalogue, indicating its probable original form (Wedgwood & Sons 1939: J3).

Number of Specimens: 1
Undecorated Whiteware

Figure 55

Whiteware Plates. Diameters (left to right) are 6-3/4 inches, 6-3/4 inches, 9-1/2 inches, and 8 inches. All are hard-bodied, with no trace of bluing in the glaze. Three of the four bear makers' marks designating them as "semi porcelain" or "porcelaine de terre." Since none is vitreous enough to be a true semi-porcelain (Godden 1963: 71), these plates are probably made of white granite china, an inexpensive ware that was popular after about 1850 in undecorated dinner sets, and often sold under the names semi-procelain and porcelaine de terre (Cheek 1970: 101). Most early graniteware was molded or embossed, but according to Wetherbee (1980: 18-19), heavy unembossed tablewares such as these came into fashion around the 1870s and 80s.

Makers' marks for these plates are illustrated in Figure 52a, b, and c. Plates 55a and b are printed ROYAL SEMI PORCELAIN / A. J. WILKINSON / ENGLAND. The Arthur J. Wilkinson pottery, in Burslem,
Figure 55 (Continued)

Staffordshire, opened in 1885 and remained in operation at least through the 1960s (Godden 1964: 673). The word "England" in the mark indicates that this plate was manufactured after 1891, when the McKinley Tariff Act required all goods imported into the United States to be stamped with the name of their country of origin (Thorn 1937: 48). Godden (1964: 673) notes that most Wilkinson marks without "Ltd." after the name predate the company’s incorporation in 1896.

Plate 55c bears the mark JOHN MADDOCK & SONS / SAFFORDSHIRE POTTERIES / ENGLAND. John Maddock & Sons began operation under that name in 1885, but the presence of the word "England" in the mark indicates a post-1891 manufacture date. Since the mark does not include "Ltd." after the company's name, this plate probably predates Maddock & Sons' incorporation in 1896 (Godden 1964: 406).

Plate 55d is printed PORCELAIN DE TERRE / JOHN EDWARDS / ENGLAND. This mark dates from the 1891 McKinley Tariff Act to about 1900 (Godden 1964: 231). An impressed D91 on the edge of the base may be a date mark indicating manufacture in 1891 (Godden 1964: 12).

Number of Specimens: 4

Figure 56

Whiteware nappy. A nappy is a round shallow rimless bowl used for
both cooking and serving. This vessel is 8 inches in diameter, with a hard, slightly cream-colored ceramic body and no bluing in the glaze. Nappies were advertised with most glass and ceramic tableware sets of the late nineteenth and early twentieth centuries (e.g., Pyne Press 1972a: 24-27; Montgomery Ward 1970: 508-509; Wedgwood & Sons 1939: P3, S3, T2). Montgomery Ward's 1895 catalogue (1970: 518-519) shows similar bowls apparently intended primarily for kitchen use.

The nappy bears the printed hallmark of C. C. Thompson & Co. of East Liverpool, Ohio (Figure 52d). This company was founded in 1868 as the Thompson and Herbert Co., and took the name C. C. Thompson & Co. in 1870. With incorporation in 1889 it became the C. C. Thompson Pottery Co., the name under which it operated until it was closed in 1938 (Lehner 1980: 150). Since C. C. Thompson began the manufacture of cream-colored ceramics and hand-paste whitewares in 1884 (Lehner 1980: 150), this bowl probably dates between 1884 and the company's name change in 1889.

Number of Specimens: 1
Whiteware cup rim and handle fragment. This cup was originally about 3 inches tall, with an estimated rim diameter a bit over 3 inches. The ceramic body is slightly softer than that of other undecorated whitewares from the Middleton Place privy, and the glaze is puddled blue in crevices around the handle. Heavy undecorated dinnerwares such as this were characteristic of the late nineteenth century, and blue-tinted glazes, while more common in the early 1800s, were used until near the end of the century (Miller 1980: 16-18). Undecorated dinner sets containing cups of this shape were advertised as English stone or granite china in the Sears 1897 catalogue (1968: 678), and, at a greatly reduced price, as American-made hotel ware in the 1902 catalogue (1969a: 797).

Number of Specimens: 1

Transfer-printed Whiteware

The technique of transfer-printing from engraved copper plants was developed in England in the early 1750s. Transfer-printing in underglaze blue was introduced in the 1770s, but did not become common on earthenware until after 1780, when Josiah Wedgwood's perfection of pearlware provided...
a relatively hard-bodied ceramic of a suitable color (Hughes 1960: 123-127). Early patterns imitated the Chinese and were engraved into the copper plates in a series of deep lines, but a technique combining lines and stippling, which allowed for greater detail and shading, was introduced about 1810 (Hughes 1960: 127). With the development of this and other techniques, chinoiserie gave way to pastoral and architectural scenes—English, Italianate, Alpine, and American, among many others—which remained very popular in both England and the United States from about 1810 through the 1840s (Godden 1963: 113-115; Coysh 1972: 7). At the same time, the early Chinese-inspired geometric borders were replaced by floral borders featuring English flowers (Hughes 1960: 131).

Early wares were occasionally printed in underglaze black, but until the late 1820s cobalt blue was the only color capable of providing fine gradations of tone at the high temperature required for underglaze transfer-printing. Although many different shades and types of cobalt had been used since the 1770s (Hughes 1970: 128-129), printing in light blue became fashionable in the 1830s, and "flow" or "flown" blue, an 1820s technique which allowed the edges of the pattern to blur into the glaze, was very popular from the 1840s to the 1870s and continued to be produced until the end of the century (Bartovics 1978: 205; Lockett 1972: 52-53). About 1828 a process was developed whereby red, green, yellow, and brown could be printed under the glaze by mixing the powdered enamels with Barbados tar. In 1848 a technique was patented for printing red, yellow, and blue from the same engraved plate (Hughes 1960: 129; Hughes 1970: 112-113).

Figure 58

Fluted serving bowl. Height is 3-5/8 inches and orifice diameter is 6-1/4 inches. The glaze shows a slight blue tint around the footring, and decoration consists of light blue line-and-stipple transfer-printed scenes, on front, back, and interior base, of fishermen drawing in nets from an Alpine lake. A 1-1/2 inch deep floral border on the interior rim has six reserves inset with alternating Alpine views and rose clusters. The pattern name TYROL is printed on the base (Fig. 52h), along with the name J & G Alcock, a Cobridge, Staffordshire, pottery in operation from 1839 through 1846 (Godden 1964: 27).

Number of Specimens: 1
Figure 59a

Transfer-printed mug. This specimen is 3-3/8 inches tall, 3-5/8 inches in diameter, and decorated on the exterior with a repeating scene of a dog and seated man and woman in front of a English manor house and three gamboling horses. A 1-1/8 inch interior rim border consists of flowers and scrolls on a stippled background. Printing is in dark cobalt blue line-and-stipple, with details somewhat blurred. The entire glaze has a distinct blue tint. The design and bluish glaze are characteristic of the period c. 1810-1850, but early nineteenth century landscape patterns were also reproduced on wares of the 1890s and later, often from the original copper plates and with glazes tinted blue to resemble pearlware (Bartovics 1978: 205, and personal communication).

Number of Specimens: 1

Figure 59b

Rim fragment of a flaring, thin-walled cup or small bowl. Estimated orifice diameter is about 4 inches, and estimated height is between 2 and 3 inches. The exterior is printed with a dark blue line-and-stipple engraving of an English bucolic scene, with a man in Elizabethan dress bearing a flowering bough to his com-
panions. The interior border consists of English flowers against a dark blue stippled background. The fragment is white-bodied, and undecorated sections have no discernable blue in the glaze.

Number of Specimens: 1

*English Majolica*

Figure 60

Majolica handle. This specimen, 5 inches tall and 1 inch in width, is broken top and bottom at its juncture with an apparently globular pitcher body. It is glazed with a clear brown intended to resemble wood, but traces of dark cobalt blue at the upper juncture, and yellow at the lower, show that the original vessel was multi-colored. The ceramic body is a very highly-fired whiteware.
Figure 60 (Continued)

English majolica was developed by Minton & Co. about 1850, and became fashionable after Minton's presentation at the 1851 "Great Exhibition" in London. Early Minton majolica, intended as an imitation of Italian majolica, featured a molded cane-colored body decorated with hand-painted colored scenes on an opaque tin-glazed background (Godden 1972: 120; and 1974: 272, Pl. 361-374). The ware soon evolved, however, into a fancifully molded pottery decorated with a wide range of semi-translucent colored glazes, and was produced in earthenware, stoneware, and parian by a number of potteries after about 1860. Majolica came in a variety of shapes, often with plant or tree motifs, and was used both for inexpensive domestic wares and for often massive ornamental items for house and garden (Hughes 1960: 200-202). Majolica wares remained popular throughout the late nineteenth century, and were produced by both Minton and Wedgwood through the first decade of the twentieth century (Hughes 1960: 201-203; Reilly and Savage 1980: 120).

Number of Specimens: 1

European or American Porcelain

Dinnerware

Figure 61
English meat dish. This flat-bottomed platter measures 20 x 17 x 2 inches, and is decorated with hand-painted stylized flowers in deep underglaze blue and pink, and overglaze burnt sienna and gold. A gold line runs along the interior rim edge. The porcelain body, though not so white as the later French china discussed below, has none of the blue tint found on Chinese export porcelain, and the glaze has been wiped from the base, rather than scraped in the Chinese manner, to prevent the piece from sticking to kiln furniture or other objects during firing (Godden 1978: 28).

The gadrooned rim and brightly colored pseudo-oriental pattern of this vessel are typical of decoration on English porcelains and ironstones of the early decades of the nineteenth century (Aldridge 1969: 115, Godden 1974: 204-213, 239-244; Godden 1978: 145, 184-186, 202; Hughes 1960: 158-169). A rim fragment from a second serving dish found elsewhere on the Middleton Place grounds shows that the platter was part of a matched set, possibly one of the large decorated dinner services in which these wares were often sold (Hughes 1960: 159). These services sometimes contained 130 or more plates, cups, and serving dishes. That the platter was valued by the Middleton family is suggested by the presence on the underside of 20 pairs of drilled holes, the remains of an attempt to mend it with brass rivets. This process, according to Pond (1971: 16), remained the only reliable method of china repair until the introduction of strong resin-based glues in the 1960s.

Number of Specimens: 1
Figure 62

Undecorated plates and saucers. Diameters (left to right) are 6-1/2 inches, 5-1/2 inches, 9-1/2 inches, and 9 inches. Figure 62d is a 1-1/2 inch deep soup plate, and the two dished saucers have an interior ring into which to set a cup. All have footrings, and are of plain white porcelain. The bases of Figures 62a and b have a series of concentric raised circles inside the footrings. Cushion (1976: 76) mentions these multiple base rings, which are also found on whiteware plates of the period, as a means of identifying late nineteenth century reproductions of earlier French wares.

Figure 62c bears the green-printed manufacturer's mark H & Co./L (Figure 52c). Although it appears to have been used as early as 1876 (Kovel and Kovel 1953: 60; Young 1970: 19-22), this mark was registered as a U. S. trademark in 1883 by Haviland & Co. of Limoges, France (Herskovitz 1978: 108). Figure 62b is printed D & Co. (Figure 52e), a mark that Kovel and Kovel (1953: 36) attribute to an unnamed Limoges porcelain manufactory dating around...
1775. Both these marks predate the McKinley Tariff Act of 1891, which required that imported goods be stamped with the name of their country of origin (Cushion 1976: 76; Young 1970: 19-22).

Figures 62a and d are unmarked, as is an unillustrated plate of the same form and dimensions as Figure 62c. There is a noticeable difference in quality between the marked and unmarked specimens, with the unmarked plates thicker and less sharply molded than the marked, and more heavily and unevenly glazed.

Because of its abundant kaolin deposits, the Limoges area of France has been a center for porcelain manufacture since shortly after the first French hard-paste porcelain was produced at the royal factory of Sèvres in 1768 (Savage 1969: 181, 202). By the time the original Limoges factory closed in 1854, a number of potteries in the area were well-established in the production of standard porcelain tablewares (Aldridge 1969: 77). Among these later potteries was Haviland & Co., established in 1842 by an American china merchant named David Haviland, who designed his French porcelain to appeal to American tastes and marketed it in the United States through a New York office. The enterprise was continued into the twentieth century by Haviland's sons, Charles and Theodore, and is still in operation today (Collard 1967: 192-193; Young 1970: 11-16). Limoges china, particularly Haviland, was highly regarded in the late nineteenth century, and President Rutherford B. Hayes commissioned a hand-painted set of Haviland for the White House in 1879. Cheaper French porcelains, both from Limoges and other areas, were often heavily made and unmarked, and were common in North America from the 1850s through the end of the century (Collard 1967: 189-193).

Number of Specimens: 5
Undecorated platters. The reconstructed specimen 63a measures 9 x 13 inches, and the two fragments of 63b probably come from a vessel of vessels of similar dimensions. Both examples have footings, and are made of undecorated hard-paste porcelain. Platter 63a, marked on the base with an unidentified impressed cursive M (Fig. 52j), has the same thick walls and unevenly applied glaze as the unmarked porcelain plates shown in Figure 62 a and d above. The flanged rim of this vessel sags slightly on one side, a firing defect to which porcelain is particularly susceptible (Hughes 1970: 30; Godden 1978: 25). A supporting ridge in the center of the base may have been intended to prevent a similar collapse of the bottom of the dish.

There is no maker's mark on the fragments shown in Figure 63b, but in glazing and thinness these pieces resemble the hallmarked French porcelain discussed under Figure 62. Although these platters may not have been purchased at the same time as the undecorated plates in Figure 62, they were undoubtedly intended for use at the same table.

Minimum Number of Specimens: 2
Tea and Coffee Ware

Figure 64

Teacup and saucer. Diameter of the plate is 7-3/4 inches, the cup, 3-1/2 inches. The cup was originally about 2-1/2 inches tall. Although the distinction between tea and coffee cups had waned by the end of the nineteenth century, shallow flaring cups such as this one were generally intended for tea, while coffee cups tended to be straighter and narrower (Savage 1969: 145). These two items are obviously a matched set, resembling "imported china" tea and coffee sets sold by Montgomery Ward in 1895 (1970: 513).

Both cup and saucer are made of thin white porcelain, edged in gold and decorated with a decal-printed green and pink floral design. The interior cup wall bears a print of the same design, and the base of the plate is stamped with the words ALICE/AUSTRIA encircling a valentine-shaped heart (Fig. 50g). This mark is unidentified, but a similar heart device, labeled Czechoslovakia, is illustrated by Ware (n.d.: 115). Since a major part of the Austrian porcelain industry was located in what is now Czechoslovakia, it is possible that the valentine was a mark of one of the Bohemian potteries included within the Czechoslovakian boundaries at the dissolution of the Austro-Hungarian Empire (Ware n.d.: 54). If so, these pieces would date before 1918. Decal-printing, or decalcomania, is a process by which multicolored paper patterns
are transferred onto the glaze of an already-fired ceramic. Decalcomania appears to have been known by the 1880s and was a common decoration by the early 1900s. It was used on American as well as European pottery, although the decals themselves were imported from Germany until the 1930s (Cheek 1977: 104; Lehner 1980: 13).

The German and Austrian porcelain industries are the oldest in Europe with factories established in the 1710s (Savage 1969: 125–126). Many new factories were opened in the nineteenth and early twentieth centuries, and much of the porcelain of this period was shipped to England and North America (Ware n.d.: 89; Savage 1969: 143). German and Austrian tablewares were first imported to America in quantity in the last quarter of the nineteenth century, but, admired for their thinness and translucency, they easily undersold the established French and British porcelains. By the first decade of the twentieth century they had proved serious competition for inexpensive glass and ceramic tablewares of all kinds (Collard 1967: 193; Kamm 1948: v; Wetherbee 1980: 120). Like most porcelains of the period, they were usually decorated with naturalistic sprays of small flowers (Sears, Roebuck & Co. 1969b: 355). "Bavarian" and "Carlsbad" porcelain dinner services were advertised in the 1895 Montgomery Ward and 1908 Sears catalogues at between one third and two thirds the price of a comparable set of French Haviland (Montgomery Ward & Co. 1970: 510; Sears, Roebuck & Co. 1969b: 355).

Number of Specimens: 2
Tea or bread plate decorated in the "strewn cornflower" or "Bourbon sprig" motif. This plate measures 6-1/2 inches in diameter and is hand-painted over the glaze with blue cornflowers trimmed in green and orange. The rim was originally edged with gold.

The Middletons had an extensive service of this china, said to have been brought from Europe by Henry Middleton in the 1820s. The collection is still housed at Middleton Place, and includes many variations of the strewn cornflower motif. One set of plates decorated in a slightly different pattern from this plate is on display in the Middleton house dining room. Several small plates identical to Figure 65 are among the china in storage at the house museum.

The cornflower was a favorite motif of late eighteenth century French porcelain manufacturers, and remained a popular decoration on Limoges and other wares through the nineteenth century (Cox 1970: 696-704; Savage 1969: 186, 202; Young 1970: 30). Some of the Middleton cornflower set bears the mark of Johann Nast, a leading eighteenth century ceramicist who, with his sons, operated a porcelain factory in Paris from 1782 to 1835 (Mellanay Delhom, personal communication). The manufacturer of this particular piece has not been identified, but porcelain decorated with strewn cornflowers was produced by a number of small French factories, including the Manufacture d'Angoulême, founded in Paris in 1781,
and Marie Antoinette's Rue Thiroux de Porcellaine de la Reine, founded in 1776 (Cox 1970: 703-704).

Number of Specimens: 1

Figure 66

Coffee cup. This specimen is 3 inches tall and 3-1/8 inches in diameter and has a slightly grayish porcelain paste. The overglaze double gold band is a variation of the "wedding ring" pattern produced by Haviland and other porcelain companies (Young 1970: 28, 41). Banded wares in many different colors, with both double and single bands, were common in the late nineteenth and early twentieth centuries, and were advertised in most department store catalogues of the period (Army and Navy Stores 1975; Harrod's Stores 1972; Montgomery Ward & Co. 1970; Sears, Roebuck & Co. 1968, 1969a, and 1969b).

Number of Specimens: 1
Oriental Porcelain

Figure 67

Chinese export porcelain. These fragments are decorated with underglaze blue hand-painting on a bluish-white porcelain body. Figure 67a, in addition, has a thin underglaze brown line around the outer rim edge, a decorative technique common on Chinese blue-and-white (Godden 1979: 138). Figure 67b was originally decorated with overglaze colors, including gold, as well as the underglaze blue.

This type of porcelain, made expressly for European and American markets, was exported from China in great quantity in the eighteenth and early nineteenth centuries. In the nineteenth century the English market for Chinese porcelain was severely curtailed by high tariff rates, but in the United States large amounts of blue and white porcelain continued to be imported through the 1820s (Godden 1979: 161-164). American imports dropped sharply after 1830, and by the 1840s and 50s Chinese porcelain table-
wares had been largely replaced by American and European porce­lains and earthenwares (Palmer 1976: 25-26; Schiffer et al. 1980: 24).

Chinese exports included porcelain items of all sorts, but by far the most common were dinnerwares and teawares, imported in sets after about 1755 (Godden 1979: 128). The four fragments pictured above are all from large dinner plates and dishes. Figure 67a is part of a flat-bottomed round or oval serving dish, and Figure 67b is from an oval dish with footing and sunken base. The glaze has been trimmed from the resting surfaces of both these pieces in the fashion typical of Chinese porcelain (Godden 1979: 114-115). Figure 67c appears to be a rim fragment from an octa­gonal plate or platter of a type that Godden (1979: 142, Pl. 29) says was standard after the 1750s. Figure 67d, glazed on both sides, is probably a base fragment from a heavy footring flat dish.

Number of Specimens: 4

Ceramic Toilet Items

Figure 68
Chamber pot. This item is made of a very hard ironstone-like white-ware, and has no bluing in the glaze and no maker's mark. Body-molded undecorated ironstone and granite china were popular in the United States from the 1840s until the end of the century, but the early wares were imported from England and usually marked with the manufacturer's name. American potters began producing hard-paste whitewares in the 1860s. These ceramics were frequently sold unmarked and for a number of years consisted largely of utilitarian objects such as chamber pots and kitchen wares (Wetherbee 1980: 37, 133-137). Wetherbee (1980: 137) illustrates an American-made bowl molded in the same pattern as this chamber pot.

Number of Specimens: 1
Figure 69

Socket and partial body of 10-inch hazel hoe blade. Although exact dates of manufacture are unknown, this standard heavy hoe, reproduced at right in its original form, was advertised by Montgomery Ward in 1895 (1970: 384) and Sears Roebuck & Co. from 1897 to 1908 (1968: 50; 1969a: 672; 1969b: 522). The drawing is taken from Sears, Roebuck & Co. (1968: 50).

Number of Specimens: 1
Figure 70

Miscellaneous metal artifacts. Figure 70a is an 8-inch square-cut spike. Figure 70b consists of four 3-inch cut flooring nails with machine-made heads, a nail type in general use from about the late 1830s to the 1890s (Nelson 1968: 7-8, 10). Figure 70c shows three c. 1-1/2-inch, hand-wrought, rosehead lathing nails, a type that was almost completely replaced by cut nails between about 1790 and 1820 (Nelson 1968: 1-8). Wrought lathing nails were used in the construction of the Middleton Place privy.

Figure 70d is a 3/4-inch x 1-3/4-inch round lidded pillbox.

Figure 70e is one of six identical brass rings, probably curtain rings, recovered from the privy deposit.

Figure 70f is the bowl and a portion of the handle of a pewter spoon. The pointed bowl of this specimen and the presence of a reinforcing wire in the handle indicate that it was made after 1770. Because these spoons were made well into the nineteenth century, the date of this artifact is uncertain (Noël Hume 1970: 183-184).
Figure 7la

Liberty-head or Barber quarter dollars dated (left to right) 1895, 1898, 1898, 1899, and 1902. The 1895 coin (top left) has an O mint mark below the eagle on the reverse side. This is the mark of the New Orleans branch mint, which operated from 1879 to 1909. The other coins, with no mint marks, were struck at the main U.S. mint in Philadelphia. Liberty-head quarters, designed by chief mint engraver Charles Barber, were made between 1892 and 1916 (Yeoman 1980: 5, 48, 57-59).

Number of Specimens: 5

Figure 7lb

Liberty-head or "V" nickel, badly corroded. The date is not distinguishable on this coin, but liberty-head nickels reading "V cents," as this one does, were minted from 1883 to 1912. Liberty-heads produced in the first few months of 1883 were stamped simply "V" (for five), but when counterfeiters began gilding the nickels to resemble five-dollar gold pieces, the mint added the word "cents" below the V (Yeoman 1980: 33-35).
Figure 71b (Continued)

Number of Specimens: 1

Bone toothbrush handles (Sears, Roebuck & Co. 1969a: 462 and 1969b: 800). Both handles are inscribed The Ladies Perfect Brush, with a trademark consisting of LOONEN / PARIS FRANCE encircling a six-pointed star with an E in the center. Brush 72a, in addition, has a small 22 stamped just below the bristles. Most of the toothbrushes sold by Sears, Roebuck & Co. between 1897 and 1908 were imported from France or Japan, with French toothbrushes, according to the advertising, noted for the quality of their bristles. Toothbrushes, then as now, came in many different styles, but a rounded-handled French model like Figure 72a appears to have become the Sears standard by 1908. The 1897 Sears catalogue (1968: 34), which carried only Japanese brushes, listed separate toothbrushes for men and women.

Number of Specimens: 2
Leather shoe heel 1-1/2 inches tall and 1-7/8 inches long. The leather layers, or lifts, are nailed together with two rows of thin square nails around the edges, and one nail through the center. This shoe was probably made on an automatic heeling machine, an 1875 device that was the last in a 20-year series of inventions that took shoe manufacture from hand-pegging to complete automation. The heeling machine, according to Anderson (1968: 58-61), was responsible for the fashion of women's high-heeled shoes in the 1880s and after. The height and shape of the heel pictured above are similar to heels on women's shoes and boots in department store catalogues of the late 1890s (Harrod's Stores 1972: 798-799; Montgomery Ward & Co. 1970: 490; Sears, Roebuck & Co. 1968: 191). The drawing on the left, reproduced from the 1895 Harrod's Stores catalogue (1972: 798), is typical of the type of shoe on which these heels are depicted.

Number of Specimens: 1

Not Shown:

One 1-1/2 inch stem fragment from an English white clay tobacco pipe. Long-stemmed clay pipes, common on eighteenth century sites, were used from the seventeenth through the late nineteenth century (Noël Hume 1970: 296-305). This pipestem was probably inadvertently re-deposited in the Middleton privy some time after the original pipe had been broken and discarded elsewhere on the grounds.
Figure 74

Rectangular mica panels with beveled corners. Measurements are (left to right) 2 x 2-3/8 inches, 2 x 1-1/4 inches, and 1-5/8 x 2-1/2 inches. The central panel is broken but probably was originally the same length as that on the left. Because of its transparency, pliability and resistance to heat, sheet mica in the late nineteenth and early twentieth centuries was used in lamp chimneys and electrical generators, and as windows for oil- or coal-burning stoves (de Schmid 1912: 302-304). These three mica sheets probably served as stove-front windows, which were usually made up of one or more small rectangular panels (Sears, Roebuck & Co. 1969b: 650; Army and Navy Stores 1975; Montgomery Ward & Co. 1970: 412-413).

Number of Specimens: 3

Not Shown

One white delft fireplace title, possibly from one of the early buildings on Middleton Place; one slate roofing tile fragment; one lead-glazed terracotta drainpipe fragment; and one window glass fragment.
## APPENDIX A

### ARTIFACT CATALOG, MIDDLETON PLACE PRIVY

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Number of Specimens</th>
<th>Minimum Number of Whole Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ceramic Tableware</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecorated porcelain platters</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Undecorated porcelain dinner plates</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Undecorated porcelain saucers</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Gold-banded porcelain cup</td>
<td>9</td>
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</tr>
<tr>
<td>Overglazed hand-painted porcelain plate</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Decal-printed porcelain plate</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Decal-printed porcelain teacup</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Polychrome overglaze enameled porcelain platter</td>
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</tr>
<tr>
<td>Blue underglaze oriental porcelain serving dishes</td>
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<td>4</td>
</tr>
<tr>
<td>Undecorated whiteware nappy</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Undecorated whiteware plates</td>
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<td>4</td>
</tr>
<tr>
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<tr>
<td>Blue transfer-printed whiteware bowl</td>
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</tr>
<tr>
<td>Blue transfer-printed whiteware mug</td>
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</tr>
<tr>
<td>Blue transfer-printed whiteware cup or bowl</td>
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<td>1</td>
</tr>
<tr>
<td>Undecrated creamware baker</td>
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</tr>
<tr>
<td>Banded creamware sauce tureen</td>
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<tr>
<td><strong>Glass Tableware</strong></td>
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<tr>
<td>Pressed glass tumblers</td>
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<tr>
<td>Engraved tumbler</td>
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<td>Fluted champagne glass</td>
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<td>Pressed glass goblets</td>
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<td>Pressed glass lid</td>
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<td>Cut glass pitcher</td>
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<td>Cut glass decanters</td>
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<td>Pewter spoon</td>
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<td><strong>Food Storage Containers</strong></td>
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</tr>
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<td>&quot;Armour&quot; beef extract jar</td>
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<td>Olive oil bottles</td>
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<td>Preserve jar</td>
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<tr>
<td><strong>Medicinal Containers</strong></td>
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<td>&quot;Panknin Apothecary&quot; prescription bottles</td>
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<td>Unembossed prescription bottles</td>
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<td>Paneled extract bottles</td>
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<td>Hand-blown pharmacy bottles</td>
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<td>Embossed medicinal/chemical bottles</td>
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<td>Corks</td>
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<td>Ground glass stopper</td>
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<td>Milk glass ointment jar</td>
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<td>Milk glass patch box with lid</td>
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<td>Metal cosmetic box</td>
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<td><strong>Alcoholic Beverage Containers</strong></td>
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<td>&quot;Palmetto Brewery&quot; beer bottles</td>
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<td>&quot;South Carolina Dispensary&quot; Jo-Jo flasks</td>
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<td>&quot;South Carolina Dispensary&quot; cylindrical whiskey bottle</td>
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<td>Minimum Number of Whole Items</td>
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<td><strong>Tools and Equipment</strong></td>
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<td>Iron hoe blade</td>
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<td><strong>Personal Items</strong></td>
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<td>Tooth brushes</td>
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<tr>
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<td>1895 Liberty head quarter</td>
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<td>1898 Liberty head quarters</td>
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<td>1899 Liberty head quarter</td>
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<td>1902 Liberty head quarter</td>
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<td>Total Personal Items</td>
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</tr>
</tbody>
</table>

**GRAND TOTAL OF ALL ARTIFACTS** 474 166
APPENDIX B
CALCULATION OF ARTIFACT TYPE PROBABILITIES

Using the formula outlined in the text, it is possible to calculate the probability (P) that a specific artifact type (j) is associated with a particular time interval (k) of a site's occupation. Probability varies with the total number of artifacts of the type (nj), the total number of artifacts in the sample (N), the duration of overlap between the manufacturing range of the type and the time interval (Djk), and the length of the type's manufacturing range (Dj). The relationship of these variables to the probability for the type (Pjk) may be expressed as follows.

\[ P_{jk} = \left( \frac{n_j}{N} \right) \frac{D_{jk}}{D_j} \]

The manner in which the probability of an artifact type's occurrence is derived may be illustrated using data from the Middleton Place privy. A single five year period (1881-1885) will serve as the time interval. Five artifact types have ranges that extend into this interval (Fig. 16) and pertinent information for each type is listed below.

<table>
<thead>
<tr>
<th>Artifact Types</th>
<th>&quot;Panknin&quot; Bottles</th>
<th>&quot;Thompson&quot; Bowl</th>
<th>&quot;Haviland&quot; Plate</th>
<th>&quot;Whitall Tatum&quot; Bottle</th>
<th>Poison Bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>1867-1903</td>
<td>1868-1888</td>
<td>1876-1883</td>
<td>1868-1912</td>
<td>1872-1920</td>
</tr>
<tr>
<td>nj</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Djk</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Dj</td>
<td>37</td>
<td>21</td>
<td>8</td>
<td>45</td>
<td>49</td>
</tr>
</tbody>
</table>

N = 24
Transposing the information for the "Panknin" bottles into the formula achieves the following results.

\[ P_{jk} = \left( \frac{7}{24} \right) \frac{5}{37} = .0394 \]

Similarly, probabilities for the remaining four artifact types may be calculated.

"Thompson" bowl
\[ P_{jk} = \left( \frac{1}{24} \right) \frac{5}{21} = .0099 \]

"Whitall Tatum" bottle
\[ P_{jk} = \left( \frac{1}{24} \right) \frac{5}{45} = .0046 \]

Poison bottle
\[ P_{jk} = \left( \frac{1}{24} \right) \frac{5}{49} = .0043 \]

Haviland Plate
\[ P_{jk} = \left( \frac{1}{24} \right) \frac{3}{8} = .0156 \]

The probability that all of the 27 accurately datable artifacts from the Middleton Place privy were manufactured during the period from 1881 to 1885 may be ascertained by summing the artifact type probabilities for that interval. Thus, \( .0394 + .0099 + .0046 + .0043 + .0156 = .0738 \) probability for the interval 1881-1885. Five year interval totals have been calculated for the potential range of the Middleton Place privy occupation and appear together with the artifact type totals, in Table 3.
REFERENCES

Adams, Gary

Adams, John P.

Adams, William H., Linda P. Gaw, and Frank C. Leonhardy

Aldridge, Eileen

Anderson, Adrienne

Antisell, Thomas

Armour and Company

Army and Navy Stores

Baron, Stanley

Bartovics, Albert F.

Beck, Doreen
Bowen, William R., Linda R. Carnes, and Roy S. Dickens, Jr.

Brand Names Foundation
1947 43,000 years of public service: a roster of product-identifying names used by the American public for 50 consecutive years or more. Brand Names Foundation, New York.

Butler Brothers

Carnes, Linda F., Roy S. Dickens, Jr., and Joe E. Evans
1979 Archaeological impact studies on the MARTA North and South Lines. Report prepared by the Laboratory of Archaeology, Georgia State University for the Metropolitan Atlanta Rapid Transit Authority, Contract TZ600-M93-03.

Carter's Ink Co.

Castiglioni, Luigi Conte

Chance, David H. and Jennifer V. Chance

Charleston, City of
1835-1912 Charleston city directories. Charleston, S. C.

Cheek, Charles D.

Cheves, Langdon
1900 Middleton of South Carolina. South Carolina Historical and Genealogical Magazine 1(3): 228-262.

Collard, Elizabeth
Coppen-Gardner, Sylvia  

Cox, Warren E.  

Coysh, A. W.  

Cushion, John P.  

Daniel, Dorothy  

Davis, Derek C.  

Davis, Pearce  

Demeter, C. Stephen and William L. Lowery  

Dennis, Dolores  

de Schmid, H. S.  

Dickens, Roy S., Jr.  
1979  *Reconstruction of a holiday behavioral pattern.* Pattern and Meaning 1(2).

Dickens, Roy S., Jr. and William R. Bowen  
1980  *Problems and promises in urban historical archaeology: The MARTA Project.* *Historical Archaeology* 14: 42-57.

Douglas, R. W. and S. Frank  

Downard, William L.  
1973  *The Cincinnati brewing industry, a social and economic history.* Ohio University Press, Athens.
Earle, Carville and Ronald Hoffman  

Edgar, Walter B. and N. Louise Bailey  

Eklund, Jon  
1975  The incompleat chymist, being an essay on the eighteenth century chemist in his laboratory, with a dictionary of obsolete chemical terms of the period. Smithsonian Studies in History and Technology 33.

Elville, E. M.  

Encyclopedia Britannica  

Evans, Wendy  

Evans, Wendy and Cyril Weeden  

Fontana, Bernard and J. Cameron Greenleaf  

Futch, Robin S., Linda H. Worthy, and Roy S. Dickens, Jr.  
1980  Archaeological impact studies, MARTA North and South Lines. Report prepared by the Laboratory of Archaeology, Georgia State University for the Metropolitan Atlanta Rapid Transit Authority, Contract T2600-M93-04.

Garrow, Patrick H., Charles M. Haecker, and Silas D. Hurry  

Gentleman's Magazine  
1753  Poetical essay from C. W. in Carolina to E. J. at Gosport. 23: 337-338.

Godden, Geoffrey A.  

Godden, Geoffrey A.


Gould, J. D.

Gould, R. A.
1971 The archaeologist as ethnographer: a case from the Western Desert of Australia. World Archaeology 3(2): 143-177.

Graham, John M. and Hensleigh C. Wedgwood

Gray, Lewis Cecil

Harrod's Stores

Herskovitz, Robert M.
1978 Fort Bowie material culture. Anthropological Papers of the University of Arizona 31.

Hilliard, Sam Bowers

Hough, Mary P. H.

Huggins, Phillip K.
Hughes, G. Bernard


Illinois Glass Company

Jeter, Paul and Harvey S. Teal
1976 Columbia's past in glass. By the authors, Columbia, South Carolina.

Jones, Olive


Kamm, Minnie W.
1946 Two hundred pattern glass pitchers. Motschall Co., Detroit.


Kimball, Fiske

Kovel, Ralph M. and Terry H. Kovel

Lattimore, Colin R.

Lee, Ruth Webb
1944 Victorian glass. By the author, Northboro, Massachusetts.


Leech, Harper and John C. Carroll
Lees, William B.

Lehner, Lois

Lewis, Kenneth E.

1979 Hampton, initial archeological investigations at an eighteenth century rice plantation in the Santee delta, South Carolina. University of South Carolina, Institute of Archeology and Anthropology, Research Manuscript Series 151.

Lewis, Kenneth E. and Donald L. Hardesty

Lewis, Kenneth E. and Helen Haskell

Lewis, Lynn G.

Lief, Alfred
1965 A close-up of closures, history and progress. Glass Container Manufacturers Institute, New York.

Lockett, T. A.

Lorrain, Dessamae
1968 An archaeologist's guide to nineteenth century American glass. Historical Archaeology 2: 35-44.

Macbeth-Evans Glass Company

McClinton, Katharine M.

167
McKearin, George P. and Helen McKearin

McKearin, Helen and Kenneth M. Wilson

Mercer, Henry C.

Middleton, Nathaniel Russell, Jr.
1929 Record. In Life in Carolina and New England during the nineteenth century, pp. 139-182. Privately printed, Bristol, Rhode Island.

Middleton Place Registered National Historic Landmark, Inc. and Middleton Place Foundation.
1976 Middleton Place. Privately printed, Charleston.

Millard, S. T.

Miller, George L.

Montgomery Ward and Company

Moody's Investors Service

Morgan, Ray

Munsey, Cecil

National Canners Association
1957 The canning industry, its history, importance, organization, methods, and the public service values of its products. National Canners Association, Washington, D. C.

Nelson, Lee H.
News and Courier (Charleston, S. C.)
1937 New guest house and stable constructed at famous estate harmonize in tone with residence on the Ashley River. April 12, 1937.

Noel Hume, Ivor

Northcutt, John D.

Palmer, Arlene M.

Petty, Julian J.

Philadelphia, City of

Philips, Ulrich Bonnell
1929 Life and labor in the old South. Little, Brown and Co., Boston.

Pond, Thomas

Prunty, Merle, Jr.

Putnam, H. E.
1965 Bottle identification. By the author.

Pyne Press

Ramsey, L. G. G.

Redfield, Margaret
Revi, Albert C.

Reilly, Robin and George Savage

Russell, Loris S.

Savage, George

Schiffer, Herbert, and Peter and Nancy Schiffer

Schiffer, Michael B.


Scoville, Warren C.

Sears, Roebuck and Company


Sellers, Leila

Smith, Henry A. M.
1915 Old Charles Town and its vicinity, Accabbe and Wappoo where indigo was first cultivated, with some adjoining places in St. Andrews Parish. South Carolina Historical and Genealogical Magazine 16(2): 49-67.

South, Stanley


Spivey, Towana, C. Reid Ferring, Daniel J. Crouch, and Kathy Franklin

Switzer, Ronald P.

Teague, George A.
1980  “Reward Mine and associated sites, historical archeology on the Papago Reservation.” *Western Archeological Center, Publications in Anthropology* 11.

Thompson, Edgar T.

Thorn, C. Jordan

Toulouse, Julian H.


United State Patent Office

Wagley, Charles and Marvin Harris

Walbridge, William S.
1920  *American bottles old and new*. The Owens Bottle Co., Toledo.
Wallerstein, Immanuel


Ware, George W.

Washington, D. C., City of
1866-1919 *Washington city directories.* Washington, D.C.

Waterman, Thomas Tileston and John A. Barrows

Webber, Norman W.

Webster, Donald B.

Wedgwood & Sons, Ltd.

Wedgwood Museum

Wetherbee, Jean

Whitall, Tatum and Company

Williams, G. Ishmael, Jr., Jana Kellar, and Thomas R. Wheaton, Jr.
1979 Additional archaeological survey and testing, Rocky Mountain pumped storage project, Floyd County, Georgia. Report prepared by Soil Systems, Inc.

Wilson, Kenneth M.
Yeoman, R. S.
1980  *Handbook of United States coins*. Western Publishing Co.,
Racine, Wisconsin.

Young, Harriet
UNPUBLISHED SOURCES AND RECORD GROUPS

Charleston County, Records of the Ordinary/Probate Judge
Inventories, Appraisements, and Sales, 1783-1867, 15 vols. South Carolina Archives, Columbia, manuscript.

Charleston County, Records of the Ordinary/Probate Judge
Wills, 1783-1868, 15 vols. South Carolina Archives, Columbia, manuscript.

Charleston County, Records of the Register of Mesne Conveyance
Conveyances. Charleston, manuscript.

Colleton County, Records of the Probate Judge
Inventories. Walterboro, manuscript.

Dorchester County, Records of the Register of Mesne Conveyance
Conveyances. St. George, manuscript.

Greenville County, Records of the Probate Judge
Wills. Greenville, manuscript.

Manuscript Census, Agriculture, South Carolina
St. George Dorchester Parish, Colleton District, 1850-1880. South Carolina Archives, Columbia, microfilm.

Manuscript Census, Population, South Carolina
St. George Dorchester Parish, Colleton District, 1790-1880. South Carolina Archives, Columbia, microfilm.

Manuscript Census, Population, South Carolina
Slave Schedules, St. George Dorchester Parish, Colleton District, 1850-1860. South Carolina Archives, Columbia, microfilm.

Middleton Family Papers
Middleton Place Foundation, Charleston, manuscript.

South Carolina, Records of the Secretary of State
Land Grants, Colonial Series, Copies, 1694-1776, 43 vols. South Carolina Archives, Columbia, manuscript.

Williams Middleton Papers
South Caroliniana Library, University of South Carolina, Columbia, manuscript.

MAPS

John McCrady Co.

174