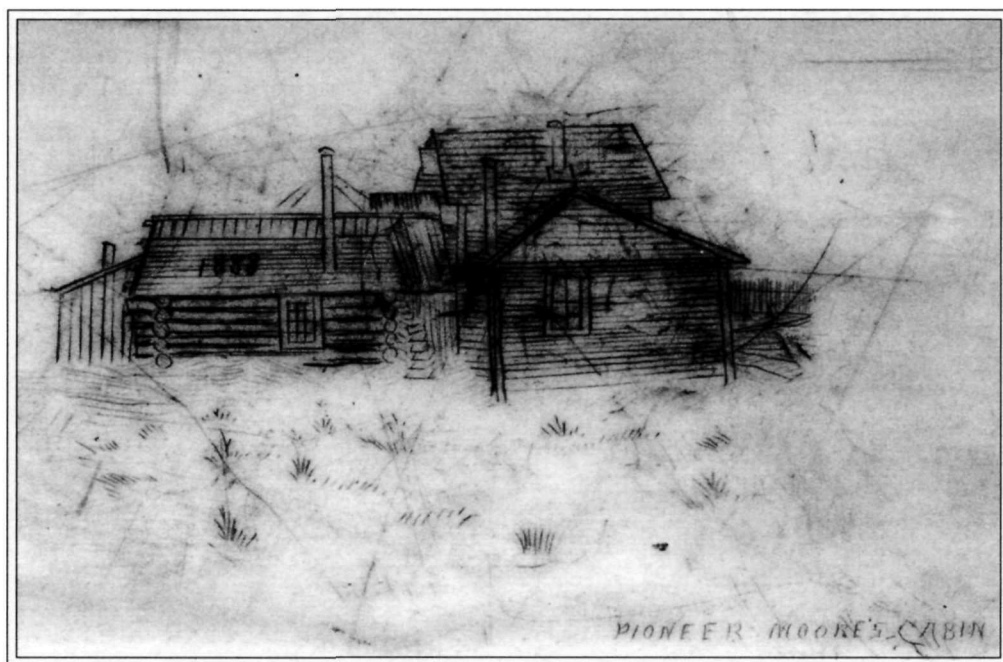


# A CENTURY AT THE MOORE/KIRMSE HOUSE

ARCHEOLOGICAL INVESTIGATIONS  
IN SKAGWAY, ALASKA, VOLUME 8



Doreen C. Cooper

Klondike Gold Rush National Historical Park  
2001



The National Park Service cares for special places  
saved by the American people  
so that all may experience our heritage.

EXPERIENCE YOUR AMERICA.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to assure that their development is in the best interests of all. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The National Park Service, Alaska Support Office, provided editing and publication services.

NPS D-101

2001

A CENTURY  
AT THE  
MOORE/KIRMSE HOUSE

ARCHEOLOGICAL INVESTIGATIONS  
IN SKAGWAY, ALASKA  
VOLUME 8

*By*  
DOREEN C. COOPER  
U.S. Department of the Interior  
National Park Service  
Klondike Gold Rush National Historical Park  
Skagway, Alaska  
2001

*Contributors*  
David Huelsbeck, Ph.D., Pacific Lutheran University  
Linda Scott Cummings, Ph.D., Paleo Research Laboratories  
Karl Reinhard, Ph.D., University of Nebraska  
Virginia Popper, Ph.D., University of California, Los Angeles

Bibliographic reference:

Cooper, Doreen C.

2001 A Century at the Moore/Kirmse House: Archeological Investigations in Skagway, Alaska, Vol. 8

U.S. Department of the Interior, Klondike Gold Rush National Historical Park, Skagway, Alaska.

Keywords:

1) Historical archeology 2) Alaska, 1897-1977  
3) Tlingit 4) Acculturation 5) Tourism 6) Skagway  
7) Archeological excavation 8) Historic ceramics  
9) Bottles 10) Prohibition 11) Privies 12) Faunal  
13) Palynology 14) Parasitology

*Cover photo. Scrimshaw on fossil walrus ivory depicting the pioneer Moore cabin. P.E. Kern, maker. Skagway, AK, ca. 1900. Courtesy of the Moore family in Seattle, WA.*

This report was produced through funding provided by the U.S. Department of the Interior, National Park Service. The opinions and conclusions in the report are solely the responsibility of the author.

Mention by the U.S. Department of the Interior, National Park Service of trade names or commercial products does not constitute endorsement or recommendation for use.

NPS D-101

Printed by the U.S. Government Printing Office

2001

---

## ACKNOWLEDGMENTS

Completing any project means that there are many people to thank. The most important are the descendants and relatives of the Moore and Kirmse families. Georgette Kirmse, wife of the late Jack Kirmse, visited Skagway every July. Her passion for Skagway and the Kirmse family heritage is a lingering memory. She shared with us her stories of life in Skagway from the mid-1960s until 1977, when she and her husband sold their “little house” to the National Park Service. We were very saddened to learn of her death in 1999 and are happy that she allowed us to videotape an extensive interview with her in 1993. Don Gestner, June Campbell and Mildred Muldane are the children of Edith Gertrude Moore Gestner, who was herself the child of Bernard and Minnie Moore. Don was the first member of the Moore family that I contacted, and his enthusiasm for his family’s history was very contagious. Over the years, he has been the keeper of their family’s history, and his generous donation of his grandfather’s personal photos and papers to the archives at the University of Alaska Fairbanks opened up avenues of research that would not have existed otherwise. Since then, he has also generously donated many unique and special personal family mementos to this park’s museum. These, in turn, have been shown to our many visitors. I also spent a lovely afternoon visiting with Don, Mildred and June, where they shared many of their personal family memories. One regret is that I did not have a video camera available for that interview, just a little tape recorder. I was also very privileged to meet Patsy Flynn Johnson, the daughter of Bernard and Minnie’s youngest daughter, Frances Moore Flynn. She has many fond and happy memories of life with her mother, and she graciously shared them with me.

No project can be completed successfully without the help of able and willing staff, and I was very lucky to have that assistance. Archeologists April Hayes, Tim Kardatzke, Ken Graham, Amy Orenstein, Megan Wehrstedt, Erin Oliver and Robert d’Aigle worked both in the field and in the lab. April began the project and also prepared the artifact drawings. Tim was an extremely able leader for several years and also prepared several computer drawings for the report. Ken Graham was our site and artifact photographer for 1994 and 1995. Ken also prepared the fieldwork drawings for this report. During the 1993 season, it was Amy Orenstein who was there to take great field photos when we discovered the first dump site. She also took many photos of that season’s artifacts. Deborah Boettcher came to work every winter and analyzed the thousands of artifacts recovered on this project, and then had the patience to enter all that information into the

computer database. Other data entry assistance was provided by Cassie Flynn, from the NPS Alaska Support Office in Anchorage, and Christine Stephens, a seasonal archeologist in 1996.

The Klondike Gold Rush National Historical Park (KLGO) staff has always been very helpful and supportive. The administrative staff of Evelyn Meyer and Cynthia Williams helped with each personnel or purchasing bump or glitch, and Clydene Sitton was always there to provide computer advice and help. John Warder and his maintenance staff kept the toilets running and the building warm in the winter. Jeff Mull and the NPS Restoration crew’s enthusiasm for the work of restoring the Moore House was contagious, and they generously shared with us information and the many unexpected and exciting finds they encountered during that time. During the project, I worked closely with Debbie Sanders, the KLGO museum curator, especially during the process of transferring records, artifacts, and artifact information from our records to hers. She has been extremely helpful, cooperative and patient throughout the entire project, and has always been willing to go that extra distance to locate needed information. Karl Gurcke, the park’s Cultural Resource Management Specialist, has been a dependable colleague and ally. His assumption of varied management responsibilities in 1998 allowed me to complete this report.

Thetus Smith in the Alaska Support Office was an incredible editor. She pulled together the report from varied computer program formats and then patiently laid out the text, figures, and many tables. She taught me so much about “wordsmithing.” I only hope I can retain some of that knowledge! Thanks also to Doug Beckstead of Yukon-Charley Rivers National Preserve, who volunteered to convert the report to an online version for the Klondike Gold Rush National Historical Park’s website, <http://www.nps.gov/klgo>. As always, the final responsibility for the information presented and interpretation of historical and archeological data lies with the author.

Last, but certainly not least, has been my supportive family — my husband, Roy Nelson, and my children, William and Cynthia Cooper — who have put up with me for many years. They not only understood my passion for my work, but also made me understand that family is the most important thing in life.

*Doreen Cooper, April 2001*

---

## NOTE TO THE READER

This is a technical archeological report that is published to fulfill the reporting requirements of Section 106 of the National Historic Preservation Act. As such, there are many parts that will be of limited interest to the layperson. The report can be read in whole, or just certain sections can be reviewed, depending on the interests of the reader. The following synopsis is designed to be a guide to each chapter.

**Chapter 1: Project Background.** This chapter explains why the archeological work was undertaken, and what the archeologists hoped to accomplish. There is also a section discussing another aspect of our work that has become very important, how to communicate information about our work to our public.

**Chapter 2: Geography, History and Gold.** This chapter discusses Skagway's location and geology. An important component of this report is an examination of the settlement of Skagway from the Native Tlingit perspective, so this chapter provides some background information about their pre-gold rush use of the area, the arrival of Europeans in the area, and a view of the Klondike gold discovery from the Native perspective. Short sections describing gold rush events in Skagway, and life in Skagway after the gold rush are also included to give readers unfamiliar with the area some basic information.

**Chapter 3: Development and Changes to the Property.** Included in this chapter is information about the Moore family — their claim to the Skagway townsite, their legal disputes, and eventual

resolution of their claim; a bit about their personal lives; and the story of their building of the current house. The next sections discuss the Kirmse family — their later changes to the property and a bit of information about their personal lives.

**Chapter 4: Archeological Fieldwork.** This chapter first presents information about Skagway's climate, soil, plants and animals, both before and after the gold rush. Soil layers are defined to specific time periods. Another section discusses some of the methods that were developed to gain information about below-ground resources non-intrusively. Excavation also took place in various locations on the site, and this work is summarized by location.

**Chapter 5: Artifact Description.** Artifacts recovered during the fieldwork are grouped into structural and non-structural categories (food, household, personal, and special function), and detailed information is presented about artifact quantities, types, styles, and functions.

**Chapter 6: Interpretation and Synthesis.** This chapter synthesizes the research done on the project, and integrates historical and archeological data. Special topics are examined in-depth: the struggles faced by Tlingit people who moved into the non-Native world, by looking at the life of Minnie Moore, formerly Klinget-sai-yat; and the role of tourism in the Skagway economy, especially the role played by the Kirmse family. Recommendations for the future management of the site, and interpretation of the knowledge gained from this project, conclude the report.

---

## CONTENTS

<b>ACKNOWLEDGMENTS .....</b>	<b>iii</b>
<b>NOTE TO THE READER .....</b>	<b>iv</b>
<b>CHAPTER 1: PROJECT SUMMARY AND BACKGROUND .....</b>	<b>1</b>
OVERVIEW .....	1
PROJECT GOALS .....	2
PROJECT SUMMARY .....	3
PUBLIC INVOLVEMENT .....	3
<b>CHAPTER 2: GEOGRAPHY, HISTORY, AND GOLD .....</b>	<b>5</b>
SITE LOCATION .....	5
TLINGIT HISTORY OF THE AREA .....	5
ARRIVAL OF THE EUROPEANS .....	8
WHO DISCOVERED THE GOLD .....	9
GOLD RUSH DAZE .....	10
POST-GOLD RUSH HAZE .....	11
<b>CHAPTER 3: DEVELOPMENT AND CHANGES TO THE SITE .....</b>	<b>13</b>
THE MOORES ESTABLISH THEIR CLAIM .....	13
THE MOORES LOSE THEIR CLAIM .....	14
THE MOORES GET BACK SOME LAND .....	14
THE MOORES BECOME WEALTHY .....	16
THE MOORES BUILD A HOUSE .....	18
THE MOORES REMODEL THE HOUSE .....	20
THE MOORES SPEND LESS TIME IN SKAGWAY .....	20
THE KIRMSSES MOVE IN AND REMODEL THE HOUSE .....	26
THE KIRMSE FAMILY HISTORY .....	26
<b>CHAPTER 4: FIELDWORK .....</b>	<b>33</b>
INTRODUCTION .....	33
SOIL FORMATION .....	33
SOIL CLASSIFICATION AND DESCRIPTION .....	33
FLORA AND FAUNA .....	38
INTRODUCTION TO FIELDWORK SUMMARIES .....	40
METHODS .....	40
FIELDWORK SUMMARY - MINIMALLY INVASIVE TESTING .....	41
SOIL CHEMISTRY SAMPLING .....	41
SOIL CHEMISTRY TESTING FOR CA. 1900-1910 PRIVY .....	44
SEWER AND WATER LINE TRENCHES - EXPLORATORY TESTING .....	45
FIELDWORK SUMMARY - EXCAVATION .....	47
PERIPHERAL YARD AREA - SOUTHWEST .....	47
PERIPHERAL YARD AREA - EAST .....	53

EXCAVATIONS AND EXPLORATIONS BENEATH THE MOORE HOUSE .....	54
PERIMETER UNITS.....	58
Southeast corner .....	58
South side .....	59
West side .....	61
East side .....	62
North side .....	64
NORTH OF THE HOUSE .....	68
Kirmse Dump #2 .....	68
Moore/Kirmse Household Dump .....	71
Units 142N98E and 145N98E .....	72
Original 1897 Fenceline and the Later Kirmse Household Dump .....	77
SURFACE SURVEY AND TESTING AT SHED 1 .....	79
Shed 1 - Surface Collection .....	82
Excavation Units .....	84
MOORE HOUSE PRIVIES .....	84
1993: 130N116E .....	85
1994: 131N118E and 128.5N118E .....	85
1995: 132N123E .....	88
CONCLUSIONS .....	88
House and Log Cabin .....	88
Yard and Outbuildings .....	89
Specialized Dump .....	90
Household Dump .....	91
Privies .....	91
<b>CHAPTER 5 - ARTIFACT DESCRIPTION .....</b>	<b>93</b>
METHODS .....	93
ARTIFACT DATING .....	95
STRUCTURAL ARTIFACTS .....	99
Windows .....	99
Nails .....	102
Hardware .....	109
Materials .....	111
Utilities .....	112
FOOD-RELATED ARTIFACTS .....	113
Food Storage .....	114
Food Preparation .....	115
Food Serving .....	117
Food Remains .....	123
Beverage Containers .....	128
Food-Related Artifacts, Unknown Use .....	131
HOUSEHOLD ARTIFACTS .....	131
PERSONAL ARTIFACTS .....	138
Medicinal Artifacts .....	138
Grooming & Hygiene .....	142



Personal/Adornment .....	144
Clothing .....	144
Leisure/Indulgences .....	146
SPECIAL FUNCTION ARTIFACTS .....	152
<b>CHAPTER 6 - INTERPRETATION AND SYNTHESIS .....</b>	<b>155</b>
TLINGIT USE OF THE SKAGWAY VALLEY BEFORE 1897 .....	155
Tlingit Legal Claims to Land .....	155
Moore/Tlingit Legal Claims To Skagway .....	155
CULTURAL LANDSCAPE .....	158
MOVING BETWEEN TWO WORLDS: MINNIE MOORE'S STORY .....	160
Background of Klinget-sai-yat .....	160
Klinget-sai-yat's Evolution into Minnie Moore .....	162
Moving Away .....	169
THE MOORE/KIRMSE HOUSE SITE AND THE DEVELOPMENT OF TOURISM .....	169
The Kirmse Family and the Growth of Tourism .....	170
ARCHEOLOGICAL ARTIFACT ANALYSIS .....	176
Dating the Privy Deposits .....	176
Where Was the Trash .....	177
CHANGE AND CONTINUITIES BETWEEN GOLD RUSH AND	
POST-GOLD RUSH SKAGWAY .....	178
Ceramics at the Moore/Kirmse House .....	178
Comparing Gold Rush and Post-Gold Rush Ceramics .....	180
Variety in the Diet .....	182
Prohibition in Skagway .....	184
RECOMMENDATIONS FOR FUTURE INTERPRETATION AND SITE MANAGEMENT .....	185
<b>REFERENCES CITED .....</b>	<b>187</b>
<b>APPENDIXES</b>	
APPENDIX 1 - Moore House Chronological Site History .....	A1-1
APPENDIX 2 - Manufacturers' Marks .....	A2-1
APPENDIX 3 - Structural Artifact Summary .....	A3-1
APPENDIX 4 - Food-Related Artifacts, by Fragment Count .....	A4-1
APPENDIX 5 - Food-Related Artifacts, by Minimum Number Count .....	A5-1
APPENDIX 6 - Zooarchaeology and the Occupants of the Moore House .....	A6-1
APPENDIX 7 - Pollen, Phytolith, and Parasite Analysis of Privy,	
Dump, and Yard Deposits from Moore House Site .....	A7-1
APPENDIX 8 - Parasitological and Palynological Investigations	
of Latrine Sediments .....	A8-1
APPENDIX 9 - Macrobotanical Analysis of Soil Samples from	
the Moore House Site .....	A9-1
APPENDIX 10 - Non-Food-Related Artifacts, by Fragment Count .....	A10-1
APPENDIX 11 - Non-Food-Related Artifacts,	
by Minimum Number Count .....	A11-1

**LIST OF TABLES**

Table 1 - Soil Strata Descriptions .....	35
Table 2 - List of Numbered Features .....	48
Table 3 - Stratigraphy of 1988 Test Units .....	59
Table 4 - KLGO Function Codes .....	94
Table 5 - Analytical Database Description .....	96
Table 6 - Excavation Volume Comparison .....	98
Table 7 - Structural vs. Non-Structural Artifacts .....	99
Table 8 - Windowpane by Thickness .....	100
Table 9 - Identifiable Nails by Type .....	103
Table 10 - Identifiable Nails by Nail Size .....	105
Table 11 - Identifiable Nails, Gold Rush and Post-Gold Rush Eras .....	107
Table 12 - Identifiable Nails by Size and Type .....	108
Table 13 - Hardware (in minimum number) .....	110
Table 14 - Types of Wood Recovered (in grams) .....	112
Table 15 - Results of Bottle Diameter/Volume Study .....	129
Table 16 - Bottles by Volume, Finish and Color .....	130
Table 17 - Bottles by Type and Color .....	133
Table 18 - Household Artifacts .....	134
Table 19 - Personal Artifacts .....	140
Table 20 - Special Function Artifacts .....	153
Table 21 - Non-Structural Artifact Density Comparison .....	178
Table 22 - Ceramic Vessel Forms .....	179
Table 23 - Summary of Types of Visible Seeds .....	182
Table 24 - Fruit/Vegetable Consumption at the Moore House Site .....	184
Table 25 - Bottles by Type and Time Period .....	185

**LIST OF FIGURES**

Figure 1. Drawing of project location. ....	xii
Figure 2. Photo taken by photographer F. LaRoche, arriving in Skagway on July 26, 1897, on the boat with the first Klondike stampeders. Photo courtesy of University of Alaska Fairbanks Polar Archives, Elmer Rasmuson Library, number 60-865-62. ....	7
Figure 3. Photo taken by unknown photographer in late July or early August 1897. Alaska State Library, Juneau, Winter & Pond Collection. ....	15
Figure 4. Moore house/cabin, ca 1898-1899. Skagway City Museum, Skagway, Alaska, Photo No. 79-32. ....	17
Figure 5. Moore cabin/house, ca April 1898. Suzzallo Library, University of Washington. ....	19
Figure 6. Photo of Moore house, new addition, ca 1900. Skagway City Museum, Skagway, Alaska, Photo No. A01-30. ....	21
Figure 7. Moore house, rear view, ca 1901-1902. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-41. ....	22
Figure 8. Moore family in front of house, ca 1901. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-81. ....	23
Figure 9. Moore family in front of house, landscaped yard. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-03N. ....	24

Figure 10. Photo of Moore/Kirmse house, ca 1909-1915. Yukon Archives, Whitehorse, Yukon Territory, Print No. 79/102.....	25
Figure 11. Photo of Herman Kirmse. Photo on file at Klondike Gold Rush NHP, Skagway, Alaska. ....	27
Figure 12. Photo of Kern Jewelry store, 5 <sup>th</sup> & Broadway, acquired by Herman Kirmse in 1904. Photo on file at Klondike Gold Rush NHP, Skagway, Alaska. ....	29
Figure 13. Photo of letters to Jack Kirmse found during construction.....	31
Figure 14. Contour map of site. ....	39
Figure 15. Site excavation drawing. ....	42
Figure 16. Soil pH distribution, contour interval .2. ....	44
Figure 17. Soil calcium distribution. ....	45
Figure 18. Soil potassium (potash) distribution .....	46
Figure 19. 1914 Sanborn map showing enlarged view of Moore House lot. ....	53
Figure 20. 1948 Sanborn map showing enlarged view of Moore House lot. ....	55
Figure 21. Plan view, southwest yard area, excavation units 65NOW, 76N10E, and 81N15E. ....	56
Figure 22. Soil profile drawings, east and west walls, 122N100E. ....	57
Figure 23. Photo of soil below the Moore/Kirmse house. ....	58
Figure 24. Soil profile drawing, east and west walls, 1988 excavation unit. ....	60
Figure 25. Photo of 1988 excavation unit, wooden cribbing at base of unit. ....	61
Figure 26. Photo of 1993 excavations on south side of Moore/Kirmse house. ....	62
Figure 27. Soil profile drawing, east wall, unit 90N58E. ....	63
Figure 28. Soil profile drawings, north and south walls, 125 North units. ....	65
Figure 29. Plan view drawing, area north of house. ....	66
Figure 30. Photo of east wall, 131N74E unit. ....	69
Figure 31. Photo of Feature 22, artifact cluster in unit 131N74E. ....	69
Figure 32. Soil profile drawing, combined excavation areas north of house. ....	70
Figure 33. Photo of Features 30, 31, and 32 in unit 136N74E. ....	71
Figure 34. Photo of dump site, north of shed. ....	72
Figure 35. Plan view drawing, dump site units and relic fence line. ....	74
Figure 36. Soil profile drawing, east and west walls, units 142N/145N98E. ....	75
Figure 37. Photo of artifacts in Kirmse dump. ....	76
Figure 38. Photo of Features 25 and 26, 145N98E, in the Moore dump. ....	77
Figure 39. Photo of Features 39 and 40, Unit 139N92E. ....	79
Figure 40. Plan view drawing, surface collection beneath floor of shed. ....	80
Figure 41. Photo of surface collection, south side of shed. ....	82
Figure 42. Photo of privy excavation, 130N116E, in 1993. ....	85
Figure 43. Soil profile drawing, east and west walls, 128N/131N118E, privies. ....	86
Figure 44. Plan view drawing, privy area. ....	87
Figure 45. Photo of electrical connectors from the Moore/Kirmse house. ....	113
Figure 46. Photo of small ceramic crocks from dump site. ....	115
Figure 47. Drawing of Long's California Preserves glass jar. ....	116
Figure 48. Drawing of copper coffee filter from Kirmse privy. ....	117
Figure 49. Drawing of Curtice Brothers ketchup bottle. ....	118
Figure 50. Photo of tableware from Feature 23, Kirmse dump. ....	120
Figure 51. Monochrome transferprint designs. ....	121
Figure 52. "Oriental" porcelain designs. ....	122
Figure 53. Photo of polychrome porcelain designs. ....	123
Figure 54. Photo of polychrome, pre-World War I whiteware designs. ....	124
Figure 55. Chart showing ceramic decoration type for the Moore and Kirmse deposits...	125

Figure 56. Drawing of three spoons found in post-gold rush deposits.....	126
Figure 57. Photo of flasks from Moore privy, and page from 1904 Whitney Glass Works	132
Figure 58. Drawings of patented clothespins. ....	136
Figure 59. Photo of light bulb found in Kirmse privy. ....	137
Figure 60. Drawing of ferrous metal letter box .....	139
Figure 61. Photo of medicine bottles from the base of the Moore privy .....	140
Figure 62. Round corn cure vial, manufactured by the Illinois Glass Co., 1916-1920. ....	142
Figure 63. Photo of Crown Perfumery bottle .....	143
Figure 64. Drawing of monogrammed talcum powder lid. ....	144
Figure 65. Jewelry artifacts from the site. ....	145
Figure 66. Photo of various button types found in the Moore and Kirmse dumps. ....	145
Figure 67. Drawing of rubber button and suspender fastener .....	146
Figure 68. Photo of paper doll dresses found inside walls of Moore House .....	148
Figure 69. Drawing of ceramic doll parts .....	149
Figure 70. Photo of porcelain toy teacup, and advertisement for toy tea set .....	149
Figure 71. Photo of wooden toy alphabet blocks .....	150
Figure 72. Drawing of stoneware animal legs from the Moore dump .....	151
Figure 73. Drawing of ferrous metal donkey, pre-1940 strata .....	151
Figure 74. Photo of Chief George Shotridge and wife. Shotridge Photo Collection, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 65-39-80. ....	161
Figure 75. Cannery at Pyramid Harbor, Alaska, ca. 1890. University of British Columbia, Special Collections, BC 1456/13, #203 .....	163
Figure 76. Photo of Minnie Moore and children, ca. November 1898, Skagway. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-08N.....	165
Figure 77. Photo of parlor, Moore residence, Skagway. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35. ....	167
Figure 78. Photo of cache of medicine bottles at base of Moore privy. ....	167
Figure 79. Photo of Minnie Moore and daughters, ca. 1904. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-06. ....	168
Figure 80. Photo of Jack Kirmse and friends in front of Pack Train Saloon, late 1940s-early 1950s.....	171
Figure 81. Photo of dry cell battery found in Kirmse Dump #2. ....	171
Figure 82. Photo of swastika artifact found in southwest yard of site.....	172
Figure 83. Photo of Peter Kern's Tlingit baskets and other objects. Alaska State Library, Juneau, Alaska. ....	173
Figure 84. Photo of walrus tusk knife found in MH Shed, Catalog No. 34116. ....	174
Figure 85. Photo of interior of Kirmse Curio Store. ....	174
Figure 86. Photo of souvenir Chilkat Blanket teacup sold by Kirmse Curio Store. ....	174
Figure 87. Photo of totemic pin found in Kirmse dump .....	175
Figure 88. Kirmse Curio store brochure explaining Kiks.ádi totem legend .....	175
Figure 89. Comparison of gold rush and post-gold rush ceramics, fragment count chart. ....	181
Figure 90. Comparison of gold rush and post-gold rush ceramics, MNI count chart .....	183



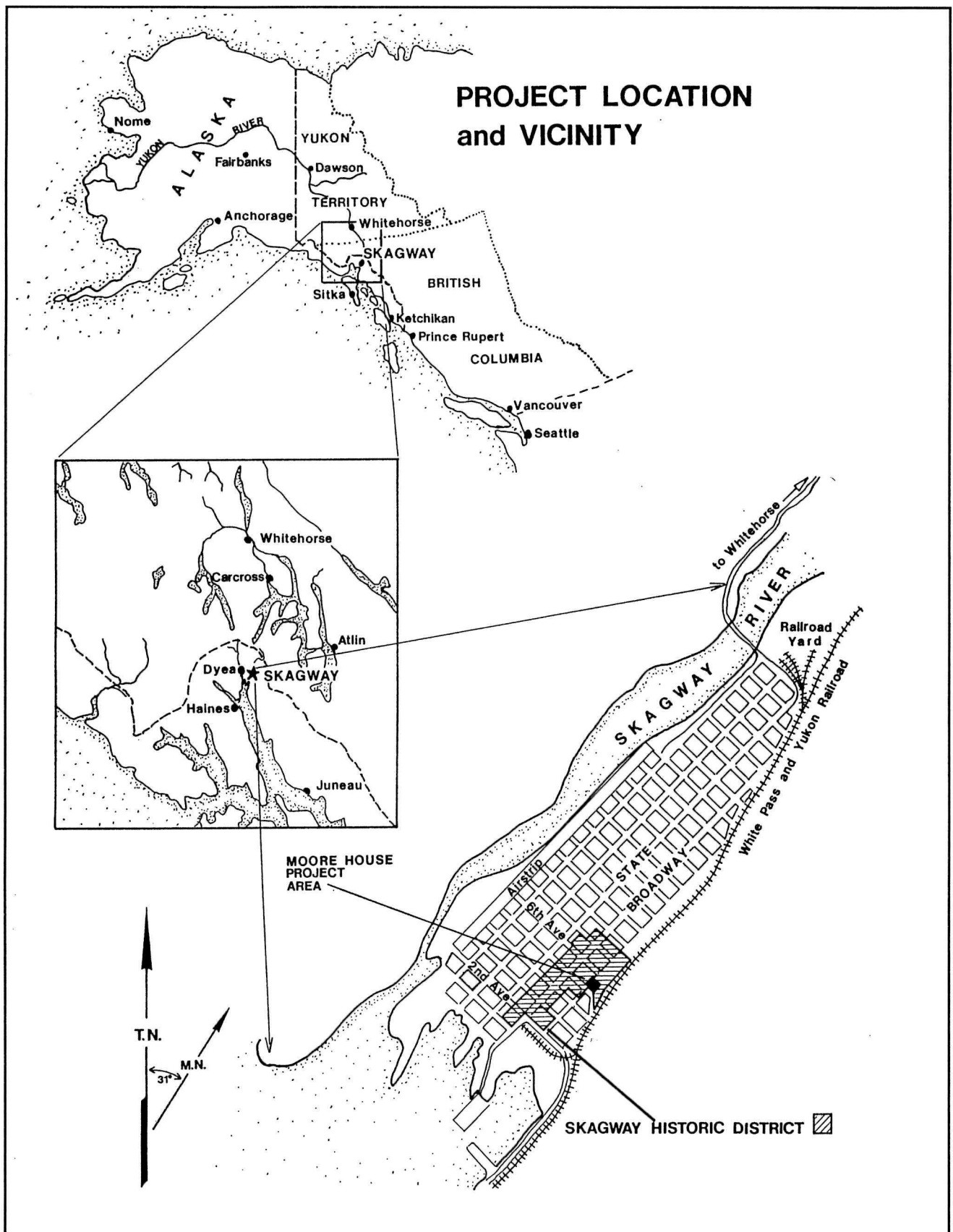


Figure 1. Drawing of project location.



---

## CHAPTER 1: PROJECT SUMMARY AND BACKGROUND

### OVERVIEW

Skagway, Alaska, was one of the most important entrepôts during the great Klondike Gold Rush of 1897-1898. Its significance to the history of the United States was recognized when Klondike Gold Rush National Historical Park (“the park”) was created, with offices in Seattle and Skagway, in 1976. See the location of Skagway in Alaska and the location of the project in the City of Skagway in figure 1.

The creation of a national historical park in Skagway had been sought by some of its citizens and economic boosters for many years. It was very important to the National Park Service (NPS) to acquire the house and cabin built by the Moore family. The property is considered significant because the log cabin was built by Captain William Moore and his son, J. Bernard (“Ben”) Moore. Captain Moore is generally credited with the “founding” of the town of Skagway, 10 years before the gold rush began. His prescience in choosing this site was based on many years spent exploring and prospecting in the upper reaches of British Columbia and the Northwest Territories. Although both he and Ben built the cabin and wharf, it was Ben, a Canadian citizen, who eventually applied for U.S. citizenship and filed the homestead claim with the General Land Office in Sitka. In 1890, Ben met and married a young Tlingit woman, Klinget-sai-yat, from a prestigious Chilkat family in Klukwan. In 1896, Captain Moore obtained financial backing for their Skagway venture. Ben, his wife, and their two children moved to Skagway in February 1896 to work full-time on their residence and business properties. Coincidentally, a large gold strike was found in the upper reaches of what is now the Yukon Territory in August 1896. A year later, Skagway was overrun by hordes of stampedes on their way to the Klondike goldfields.

The Moore family fought with the town in the courts over their legal claim to the Skagway townsite. Eventually they won that battle, but Skagway was already past its zenith. The successful completion of the White Pass & Yukon Route Railroad over the

coastal mountain range into Canadian territory ensured Skagway’s survival, albeit with a greatly reduced population. By 1907, Ben Moore and his family left Skagway to build a new life in Tacoma, Washington. Captain William Moore finally retired to Victoria, British Columbia, in 1906 (*Daily Colonist*: April 8, 1906/6).

The site was occupied shortly thereafter by another Skagway pioneer, jeweler Herman Kirmse and his family. Herman Kirmse met an untimely death before he could purchase the Moore property; and it was his widow, Hazel, who purchased the property in 1914. She and her family continued to live on the property. It was her son, Jack, who eventually sold the site to the NPS in 1977. Throughout their many years in Skagway, the Kirmses continued to preserve the cabin, and much of the house, as it had been when the Moore family lived there. Without their dedicated stewardship of the land and buildings, the renovation of the house would have been impossible.

The Moore/Kirmse house and cabin site is located in the Historic District of Skagway, is on the National Register of Historic Places and is a contributing property to a National Historic Landmark. All archeological work at the Moore/Kirmse house was conducted under Section 106 of the National Historic Preservation Act (NHPA). The law applied to this project because the project took place on land owned by the federal government. Under the NHPA, the impact that construction projects might have on significant cultural resources, such as standing historic buildings or below-ground archeological deposits, must be considered before federally funded construction can take place. This law was passed to save, through either active preservation or mitigation of adverse impacts, as much of our heritage as possible for the enjoyment and enlightenment of present and future generations of United States citizens.

Archeological work first began at the Moore/Kirmse house in 1980 when Catherine Blee began archeological testing north of the house. Her work was based on proposed building plans and treatments



contained in the *Historic Structures Report for Ten Buildings* (Blee et al. 1984:269-364). The purpose of the first round of archeological work was to determine the extent and nature of the archeological deposits in and around the house and cabin. The results of the work in 1980, 1983, and 1985 were summarized in a final report (Blee 1988).

The current phase of archeological research began when plans to restore the Moore/Kirmse house to its 1904 appearance were set in motion. It was decided that when the house was restored it would house exhibits that focused not only on the Moore and Kirmse families, but also on interpreting family life in Skagway during the Klondike Gold Rush. Archeological testing and excavation took place during the summers of 1993 and 1994. A small amount of excavation also took place in 1995, when construction work began. Archeologists also worked with the construction crew to record previously unknown features and artifacts uncovered during the restoration process. The restoration climaxed with a grand opening and building dedication on July 5, 1997, as part of the official centennial celebration in Skagway. Representatives of both the Kirmse and Moore families were present during the ceremony.

## PROJECT GOALS

The goals for this archeological project were focused on several different criteria. First was the need to mitigate adverse impacts from the planned construction. Blee found some deposits on the north side of the house that related to the original placement of the Moore cabin in 1887. Since that was the first known site of European occupation in the area, any intact deposits in that area had potential significance. Other areas for testing were also recommended (Blee 1988:305-309), and formed the basis for this final round of archeological work. Although Ray DePuydt excavated one test trench in 1988, most of the work was done from 1993-1995 (Cooper 1993a and b, 1994a and b). The project goals relating to construction were:

1. To locate and remove significant structural or artifact remains that would be disturbed when the house's foundation was replaced. Although the plans only called for a five-foot wide trench around the house, in fact the trench extended eight to nine feet wide during building restoration work.
2. To ensure there were no significant structural or artifact remains that would be disturbed when utility lines (sewer, water, electrical) were installed.
3. To ensure there were no significant structural or artifact remains that would be disturbed when a shed on the east side of the house was removed for rehabilitation and a concrete foundation was added.
4. To find and mark for future resource management any intact structural or artifact remains not disturbed by construction.
5. To help restore the building more accurately and to gain a fuller understanding of how the interior and exterior evolved through time. This information assisted in the interpretation of the house to the public.

Research goals for archeological projects have been a continuing concern for this park. Archeological work in Skagway that began in 1978 was a reaction to the initial construction on park buildings, and no overall research goals were elucidated. An overview and assessment of the archeological work (Adams and Brauner 1991) identified various research themes that archeological work could address, and these themes were incorporated into the research design for this project.

6. *Research Themes 1 and 2 (Adams and Brauner 1991:107-108): Native American Use of the Skagway Valley Before 1897, and Native American Interaction with Stampeders and Skagway after 1897.* Minnie Moore was not only the wife of J. Bernard Moore, but also a daughter of a prestigious Tlingit family from Klukwan. Her life was examined through historic photographs and documents. Oral histories anthropologists collected from coastal Tlingit and inland Tlingit/Tagish people were also reviewed to better understand the Native American perspective. By examining her life, and the available material remains, some light will

be shed on acculturation issues faced by Native Americans during that era.

7. *Research Theme 5 (Adams and Brauner 1991:109-110): The Settlement Process in Founding Skagway in 1897.* J. Bernard Moore and his father, Captain William Moore, were the first non-Native Americans to establish a settlement in the Skagway Valley. This placed them at odds with stampeders arriving in July 1897 who wanted to locate land for businesses and residences. The historical record is replete with references to many legal disputes between the Moore family and other Skagway residents. This dispute is reflected in the cultural landscape of the site.
8. *Research Theme 8 (Adams and Brauner 1991:112-113): Skagway's Participation in the World Market, 1897 to Present (Adams and Brauner 1991:112-113).* The Moore/Kirmse house was almost continually occupied from before the Klondike Gold Rush to the 1970s. By examining the artifacts found in the dump sites and privies, it should be possible to examine the continuities and changes undergone by its occupants during that time. Like most Americans, these people were also part of complex world economic systems. Information on sources of supply and impacts from technological innovations might help us to better understand how these systems impacted a small, fairly isolated town.
9. *Research Theme 11 (Adams and Brauner 1991:114): Developing a Tourist Industry in Skagway, 1897 to Present.* Both the Moore and Kirmse families were leaders in the inception and continuation of tourism in the local economy. This unifying theme is used to interpret artifactual, historical, and cultural landscape data.
10. Another goal of this project is to make the archeological "data," both about fieldwork and artifacts, available to other researchers. This goal is being fulfilled through the publishing of this final report. The artifacts are maintained in the museum collection of

Klondike Gold Rush National Historical Park and are available for review by anyone with research interests in this area or time period.

## PROJECT SUMMARY

Archeological testing covered by this report was begun by Ray DePuydt and his crew in 1988 with one test unit located on the southeast corner of the house. In 1993, archeological testing located an intact dump site and an intact privy northeast of the house. Testing to locate remains from a gold rush era shed on the west side of the property was not successful. Testing around the perimeter of the house confirmed DePuydt's initial impression that foundation stabilization work had disturbed any intact artifact or structural remains. The only place where that was found not to be true was north of the house, in the area where the 1887 cabin was originally located, and those deposits were very small.

In 1994, archeologists discovered that they had found not one intact privy, but two, one on top of the other. They also removed the floor of a shed, surveyed, and recovered artifacts lying below the floor. North of the house, excavations revealed another, specialized dump site. Excavations under the Moore/Kirmse house determined the extent of damage from prior foundation work and also revealed intact remnants from the 1897 house construction. In 1995, final excavations on the privies revealed the extent of both deposits. A non-intrusive search was initiated for another (ca. 1902-1910) privy on the east side of the property. Another attempt was made to determine the location of the original north boundary fence. Additional analysis was conducted on the original placement and evolution of the house and cabin. After construction began, archeologists monitored the ground-disturbing work that took place when the foundation and utility lines were dug. Together with the construction crew, they examined the house as layers of wall covering, trim and molding were removed and original elements of the house were revealed.

## PUBLIC INVOLVEMENT

A goal of any federally funded archeology project should be passing along information to the people

who foot the bill, the taxpayers. Many people find archeology fascinating and are especially interested in its most visual element — fieldwork. While we wanted people to visit our site, we were also concerned about keeping a balance between providing information and keeping on schedule. Since our funding was for an archeological crew only, we knew that an excavator who spent a significant part of each day explaining the work would not actually be able to accomplish much excavation. During 1993-1994, we experimented with various methods to better interpret the archeological work to the public.

During 1993, wooden signs on the site explained that this was an archeological project. Because we were off the main street, it did not attract many visitors. We found, not surprisingly, that visitation peaked on days when the largest number of cruise ships was in town. Other peaks occurred when an NPS ranger ended a walking tour at the Moore cabin, and people began to look over the property. Often, these visitors did not want to discuss the archeology but instead needed guidance to the nearest public restroom. Our most successful discussions were with people who had come to Skagway to learn about the gold rush, who were traveling independently, and who had especially sought out the site because of its historic importance. By the end of the field season, we did not feel that the project schedule was compromised by talking about the archeology to the visitors. Rather, our main concern was that not enough information about the project was getting to the public.

In 1994, we tried two different approaches. The first was to use the park's interpretive rangers to convey information learned from our research to the site visitors. During the annual training for the park's seasonal staff, we presented them with information about how the archeology was conducted, why we were doing the work, and what we were learning from our research. These talks were supplemented with weekly, E-mail project updates. Next, we prepared a written handout for distribution at the Visitor's Center. It contained information about the site, and directions on how to get there. This sheet was simply produced, by a word processing program, with a couple of line drawings for illustrations. Unfortunately, it was not widely distributed because there was no place in the Visitor's Center for the

sheets to be displayed. Had it been properly displayed, it should have been a very effective tool for public involvement.

In hindsight, we might have tried some additional approaches to make the archeology more "people friendly." One that would not have been too expensive would have been to have special signs (with text and photos), describing the site, the project, and the goals located at the front of the property, where people walk. Alternatively, special tours of the site (perhaps once or twice a day) could have been conducted. This approach would have worked as long as the project was on schedule. Otherwise, there is still the problem of keeping the public informed, yet adhering to project deadlines. Another would be to create a special brochure for the site. That was done by the Canadian Yukon Territory government for their Canyon City site. However, funds were obtained from their tourism division, not the cultural heritage section. To create a brochure, there is not only the cost of printing, but also of salary for someone to prepare the text, photos, or illustrations. Those types of expenses were never contemplated by the original Historic Preservation Act and were not available for this project.

The public outreach effort at the Moore/Kirmse house did have its successes, even though communication with a public audience was not originally included in the project goals. The information outreach was most successful when communicating information through the park's interpretive rangers. This project also gave us baseline information with which to try other approaches to communication with other archeological projects at the park, such as the Web site we created for the Pantheon Saloon project. For a park that does get a lot of visitors, probably the best approach to providing on-site visitors with information about archeology projects is to "capture" an employee who can donate at least half their time as a "middleman." This person would not have to be an archeologist, but should have some background in archeology. They could then conduct on-site tours, and perhaps give occasional slide shows to park visitors. To reach the vast public audience who will never travel to your site, creating a site on the World Wide Web may still be the best way to reach the most people.

---

## CHAPTER 2: GEOGRAPHY, HISTORY, AND GOLD

### SITE LOCATION

Skagway is located in the northernmost part of Southeast Alaska, at latitude 59°27'N and longitude 135°19'W (Yehle and Lemke 1972:1). It lies directly on the Lynn Canal and Taiya Inlet, the end of Alaska's Inside Passage, an ice-free corridor that is navigable year-round. Skagway is surrounded by ice fields and glaciers, covering about 25 % of the area (Yehle and Lemke 1972:8). The area was probably covered by glaciers several times, the most recent deglaciation occurring about 10,000 years ago. Since the Klondike Gold Rush, the land that sits under Skagway has risen approximately six feet due to isostatic (or glacial) rebound (a rate of about .06 feet per year). Other uplift may be due to tectonic plate movement since Skagway lies only about 100 miles northeast of the active Queen Charlotte-Fairweather fault (Yehle and Lemke 1972:18).

When Captain Moore and his sons first came to what is now Skagway, they would have approached it the same way most visitors do today — on the water. Sailing north from present-day Haines (15 miles south of Skagway), the Lynn Canal becomes very narrow, with steep mountain slopes on both sides. Arriving in Skagway's deep, natural harbor, the Moores would have seen a narrow, glacially carved valley, surrounded by soaring, 6,000-foot mountains. Figure 2 is a photo of Skagway, as seen by the first Klondike stampeders arriving in Skagway's harbor. Clouds obscure the higher mountain peaks. The habitable portion of the valley is about 1½ miles long, and ¾ of a mile wide. The valley floor is relatively flat, with a "gentle slope of less than 3% toward Taiya Inlet" (Pavitt and Associates 1976:1). Eventually, thousands of people came to Skagway seeking their fortune, but gold in paying quantities was never found in this valley.

The geologic history of Southeast Alaska is very complex. Basically, as many as four parallel rock zones have been pushed up against the rest of the North American continent, with the oldest located the farthest east. Southeast of Skagway, fossils have been found that date to the middle Triassic time, 200

million to 220 million years ago (Connor and O'Haire 1988:111). Most rocks around Skagway are igneous, and granite outcroppings are abundant in the area. Outwashings from eroded granite might contain feldspar, quartz, mica, and hornblende (Connor and O'Haire 1988:239). The diorite bedrock in some places is disintegrating, creating sand and leaving piles of feldspar behind (Connor and O'Haire 1988:112). Also present in the bedrock are small masses of metamorphic rock (such as schist, phyllite, and gneiss) (Yehle and Lemke 1972:19).

### TLINGIT HISTORY OF THE AREA

We don't know if any human groups lived here in the dim mists of the past. The Pleistocene glaciers removed all preglacial soil deposits (Yehle and Lemke 1972:22), making this an unlikely location for any evidence of very early human habitation in North America. South of Skagway (Ground Hog Bay on the southern end of the Chilkat Peninsula (south of Haines), and Hidden Falls on Baranof Island) are several archeological sites that date to about 7,000 years ago (Davis 1990:198). About 80 miles north of Skagway, at Annie Lake in the Yukon Territory, archeological analysis has dated a site as being 8,000 years old (Hare 1995:129). It is not known exactly with which Native group the people who lived at these ancient sites were affiliated.

*Tlingit* is the name given to the northernmost group of Native people living on the northwest coast of North America, but still south of Alaska's Interior. Very different groups of people are lumped together under the anthropological heading of "Northwest Coast" tradition (roughly Oregon to Yakutat, Alaska), but they share a common reliance on the bounty of the sea, abundant and very large timber resources, and a fairly temperate coastal climate. How people populated North America has been one of archeology's burning questions for many years, and in Southeast Alaska there are few sites that have contributed answers to these questions. The migration path of the Tlingit to Southeast Alaska is undoubtedly very complex, some people coming down to the coast from the Interior via large interior rivers



such as the Skeena, the Stikine, and the Taku (Tollefson 1982:20). Tlingit oral history indicates this migration might have taken place before the glaciers receded, the people traveling in passages through the glacial ice (deLaguna 1990:206).

At some point, the Tlingit divided into two geographical groups, one south and one north, but there are many differing interpretations as to exactly when that occurred (Dauenhauer and Dauenhauer 1994:3; Emmons and deLaguna 1991:8-10; Shotridge 1920:12; Stanley 1958:15). Especially in their artwork, the southern groups were influenced by the Haida and Tsimshian people. In the north, the Tlingit maintained trading relationships with Athabaskan people, who lived beyond the barrier of high coastal mountains in the interior of present-day British Columbia and Yukon Territory (deLaguna 1949:2; Shotridge 1919b:213-214; Yukon Historical & Museums Association 1995:8). In the nineteenth century, two tribes (*k'wáans*) of Tlingit — the Chilkoot (Lkhùt) and the Chilkat (Jilkhàt) — ruled all the land from Klukwan (26 miles northwest of present-day Haines), north to Skagway and Dyea. The Chilkat Pass was controlled by the Chilkat, considered to be in the late nineteenth century the most powerful of all the Tlingit tribes (deLaguna 1949:14; Stanley 1958:137-138; Tollefson 1982:25). Their main village was in Klukwan, and the Chilkat Trail traversed at least part of today's Haines Highway (during the gold rush, this route was called the Dalton Trail)(deLaguna 1949:14). The Chilkoot Trail begins in Dyea, just several miles west of Skagway. It was controlled by people centered around their main village of Yandestucki (Greer 1995:8-9), near present-day Haines. What clan held the rights to the White Pass, Skagway's mountain pass, where gold rush stampeders trekked from 1897 until the White Pass Railroad was completed to the summit in 1899, is a matter of conjecture that will be discussed later. However, both the Chilkoot and White Pass Trails went over the coastal mountains, where they joined at Lake Bennett, one of the headwaters of the mighty Yukon River.

For centuries, there was an extremely active, point-to-point trade that took place between these northern coastal Tlingit and Interior Athabaskan groups. Rules

regarding access were rigidly controlled. Interior groups, like the present-day Tagish people of Carcross, were not allowed south of the summit unless invited, while the coastal Tlingit were only allowed into the Interior (McClellan 1981b:481-482). The interior Athabaskans acted as middlemen between them and groups farther north and often acted as guides when coastal Tlingit forayed into the Interior (McClellan 1981b:489). Mostly, the trading only took place at certain times of year, usually during the winter (deLaguna 1990:206). Products like the oil of candlefish (eulachon), dried fish, fungus, medicinal roots, wooden boxes, dried clams, seaweed, aboriginal tobacco, shells such as abalone and dentalia, and cedar bark baskets were traded by the Tlingit for tanned furs, moose and caribou hides, ground squirrel robes, goat wool, lichen dyes, sinew, moccasins, obsidian, copper, even walrus ivory from the Arctic (Cruikshank 1998:5-6; deLaguna 1990:209; Greer 1995:25-26; McClellan 1981b:489; Neufeld and Norris 1996:25-29; Norris 1996:6). Some Tlingit, such as those from the Taku River south of Juneau, moved as a group to the Interior. It is believed this was a relatively late expansion, coming on the heels of the depredation of the sea otter in the eighteenth century (McClellan 1981a:469).

As this trade developed over hundreds of years, the relationships between the coastal Tlingit and the inland Athabaskan people became increasingly complex. Gradually, permanent "trading partners" (members of different clans, but in the same moiety) and trading "brothers or fathers/sons-in-law" (members of opposite moieties) became established between coastal Tlingit and interior First Nations people (deLaguna 1990:206). During the annual trading sessions, stories and songs were shared (Greer 1995:26). More common were marriages between the two groups, usually Tlingit women marrying men from the Interior (although Skookum Jim's mother was a Tagish woman who married a Tlingit man), and it was common to be able to speak both the Tlingit and Athabaskan languages (Cruikshank 1990:8-9; Cruikshank 1996:442; McClellan 1981b:489). The oral history of Tagish elders often includes information about these alliances:



**Figure 2.** Photo taken by photographer F. LaRoche, arriving in Skagway on July 26, 1897, on the boat with the first Klondike stampeders. Photo courtesy of University of Alaska Fairbanks Polar Archives, Elmer Rasmuson Library, number 60-865-62.

Angela Sidney describes herself as a Tagish and Tlingit woman . . . Born in 1902 near the present village of Carcross . . . she was given the Tlingit name *Stóow* and a second Tagish name *Chóonehte' Má* . . . [and] the English name Angela. [Cruikshank 1990:21]

\* \* \*

One time, long ago, a chief of the *Deisheetaan* nation — that's us — came in from Angoon. That chief's family sailed up the Chilkat River; they stayed there with Chilkat people, . . . maybe for two months. When they're going to head back, here that Chilkat chief's son has fallen in love with that *Deisheetaan*'s chief's daughter! Well, they got married . . . Her children grew up around Taku River. [When they were grown] her three girls married [inland] to Tagish, to Teslin, to Telegraph Creek.

It was the women who came up here, who married up here, but it has to be a man who claims the country . . . To tell the truth of it, I met someone last summer [1980] from coast people. I told him that I'm *Deisheetaan sháa*, from Angoon. "Oh my," he said. "My great-grandmother told me, 'Two women went that way, inland. Two or three. They got married inland!' Now I'm glad to meet you." He shakes hands with me. I know now that coast people are our relations. [Cruikshank 1990:37-39]

## ARRIVAL OF THE EUROPEANS

There is no record or evidence of any Russian explorers or traders coming through this area during the time Russia claimed Alaska, but it is likely they at least visited here. The Russian capital of New Archangel, now Sitka, is located about 120 miles southeast of Skagway. The Russians also explored

the interior of Alaska, but traveled up the Yukon River from the western coast of Alaska, exploring close to the present Alaska-Canadian border. Before 1861, in the Yukon, and in Southeast Alaska around [Fort] Wrangell, trade was controlled by the Hudson's Bay Company. In the Lynn Canal, although the Hudson's Bay Company representatives did trade with the Tlingit, the Tlingit did the trading with the Interior Athabaskan themselves and preserved their monopoly of the Chilkoot and Chilkat Trails (Bearss 1970:2; McClellan 1981b:489). It is very likely that the pressures of the fur trade brought more formalized trading relations between coastal Tlingit and Interior groups (Cruikshank 1996:437; Greer 1995:29-34). After Alaska was sold to the United States, American trading companies took the place of Hudson's Bay Company in Southeast Alaska.

It was sometime between 1875-1878 that the first non-Tlingit, prospector George Holt, scaled the Chilkoot Pass to reach the Yukon Interior (Bearss 1970:3; McClellan 1981b:482). But it was in 1880 that the U.S. Navy forced the cessation of the Tlingit monopoly of the mountain passes. Eager to avoid war between the Chilkat and Chilkoot chiefs and subchiefs over the issue of who controlled access, Commander Beardslee intervened with an armed vessel and crew. The disputes were settled without bloodshed, and the Tlingit then began their monopoly of packing the miners' supplies over the mountain passes at profitable rates, typically \$12-\$13 per 100 pounds (Bearss 1970:4-7; Gates 1994:9; Pierce 1977[1890]:50). Packing eventually replaced trading as the most profitable business enterprise over the mountain passes, especially during the Klondike Gold Rush. Prices escalated until brought in line with competition from tramways over the Chilkoot (Greer 1995:37-38, 59-61).

In 1881, Sheldon Jackson established a Presbyterian mission for the Chilkoot and Chilkat Tlingit in what is now Haines, located about 15 miles southwest of Skagway (Willard 1995:17-18). Sometime in the mid-1880s, John J. Healy opened a trading post in Dyea. The arrival of these Europeans and Americans prompted both the Canadian and United States governments to become interested in exactly where the international boundary was located. In 1887-88, Thomas White, the Canadian Minister of the Interior,



financed a boundary survey expedition led by George Dawson and William Ogilvie (Sherwood 1992:137). Ogilvie contracted with Captain William Moore for his services as a guide for his group. Moore is credited with the Euro-American “discovery” of the “White Pass” (named for Thomas White). Moore, however, was led through the pass by a Tagish Native guide, Skookum Jim Mason. “In my time, Skookum Jim’s father was the one that claimed Carcross for *Deisheetaan*” (Angela Sidney in Cruikshank 1990:39). Skookum Jim’s mother was a Chilkoot Tlingit. He apparently possessed great knowledge not only of the geography of the Yukon Interior, but also was very familiar with the coastal mountain routes. He regularly traveled to Dyea to visit family living there. Since, however, it was the coastal Tlingit who controlled access to the mountain passes, Skookum Jim may have been violating, perhaps deliberately, one of their closely guarded secrets by revealing the trail’s location to Captain Moore. The Chilkoot Tlingit did not really use the White Pass route regularly, even though the pass was about 600 feet lower than the Chilkoot. This was probably because it was longer by several miles than the Chilkoot, and the river is navigable for a shorter distance. For whatever reason, Moore claimed White Pass as his own, and planned to develop the trail for the gold seekers he believed would eventually come to the area. Further information about Captain Moore’s career and search for the “White Pass” can be found in other sources, and will not be repeated here (Bearss 1970:22-23; Berton 1958:146-148; Blee 1988:7-8; Moore 1997:passim).

Captain Moore and Bernard named their 160-acre homestead “Mooreville,” but it became known as “Skagua,” a Tlingit name already assigned to the area. Ben Moore explained in his 1904 speech: “[T]he name, or at least the explanation of it, would require our English word called ‘wind’ to be used frequently. Skagway is a name very typical of a place where the same air is never breathed twice” (Moore 1997:inset). Through the years, this meaning has come to be interpreted as the “Home of the North Wind,” but Tlingit speakers believe it has other meanings. It may be the name for the woman behind the north wind, based on an Anglicized version of a Tlingit story told in a 1911 magazine article. In this story, a beautiful woman named “Shugway” came to Skagway, married a young man named Chute, and

retreated to the mountains when he insulted her. In this story, the north wind is said to be the curse laid by Shugway on the valley because of Chute’s misconduct (Bearss 1970:78; Spray 1911). Some of today’s Native elders believe that the closest literal translation is “Rugged Place,” referring to the north wind’s effect on the waves (Southeast Native Subsistence Commission Place Names Project 1997).

## WHO DISCOVERED THE GOLD

An anchor for any historical account of the Klondike Gold Rush is the discovery of gold by George Carmacks, who was married to Skookum Jim Mason’s sister Kate. Controversy focuses on the interaction between Carmacks and his Native in-laws and an independent prospector named Robert Henderson (Bearss 1970:39-43; Berton 1958:40-43; Gates 1994:143). In fact, the whole Yukon Territory area had long been known as a potential gold source as early as the 1850s-1870s (Cruikshank 1996:434; Gates 1994:143). During the 1880s, small groups of prospectors were seasonally boating down the Yukon River and testing the area for paying gold (Pierce 1977[1890]:56-58, 75-78). In a report to the British Columbian legislature on his Yukon travels of 1886-1887, Captain William Moore noted: “Every stream entering into the Upper Yukon has gold in it” (B.C. Legis. 1888:497).

The participation by Native people in the discovery of the Klondike gold has been downplayed or virtually ignored, even though most accounts do acknowledge that Carmacks was with his Tagish in-laws. This point of view has been reiterated in much of the interpretation of the event by the National Park Service and Parks Canada. Most Native people did not feel the lust for gold that gripped the life of the prospectors who had come into their land.

Their provisions exhausted,  
Skookum Jim went hunting and  
killed a moose. While awaiting the  
arrival of the others, Jim went to the  
creek for a drink. There he found  
gold in greater quantities than he had  
heretofore seen. [Bearss 1970:42]

This is one of the few accounts that credits a non-European with the actual discovery. It was George

Carmacks who filed the actual claim for the discovery sites. This should not be considered unusual, since it is doubtful that Skookum Jim could write in English. Even if he had filed the legal claim, Native/White relations were such at the time that it would not have been honored. But it is only recently that the Native perspective on the discovery of Klondike gold has begun to be heard.

There has never been any doubt in the minds of the Carcross Tagish people of who discovered the gold — Skookum Jim (Kèsh), his nephew, Dawson Charlie (Khâ Gùxh) (often referred to in non-Native accounts as Tagish Charlie, a completely different person), and Kèsh's sister, Kate Carmacks (Shà Tlâ), and her husband, George. Also in the area were Kate and George's daughter, Gracie; Kate's sister, Àagé; her non-Native husband, "Mr. Wilson," (possibly the "Wilson" of Healy & Wilson trading post in Dyea (Cruikshank 1996:445, fn. 1); and nephew Patsy Henderson (Kù\_sìn) (Greer 1995:66-67). Most important to them is the fact that Skookum Jim was not looking for gold, but he was fulfilling family duties by going to look for his sister. With three sisters and one brother recently dead, and with two sisters on an extended trip with their non-Native husbands, the Tagish insist that this, not prospecting, was Kèsh's motivation for being in the Klondike at this propitious time in our common history (Cruikshank 1996:446; Greer 1995:66-67):

In the first place, he wasn't looking for gold. Skookum Jim went downriver to look for his sisters, because [people] missed them. They were gone two years already, no telegram<sup>1</sup>, nothing! He didn't know whether his two sisters were alive or not. That's why he thought he'd go down the river too, to see if he could find his sisters . . . They were strict about that kind of thing, old people (quote from Mrs. Angela Sidney) (Cruikshank 1990:63)

Life after the gold rush did not treat these finders of gold kindly. Eventually spending most if not all of their earnings from their gold claims, divorce, loss of children, and early death from disease or accident were their eventual fate. But in their communities, it

was their adherence to Native cultural traditions, not their discovery of gold, that makes their names still important today. Cruikshank (1996:452-453) puts it this way:

[In one model] people are expected to succeed on individual merit and enterprise following Western values, and [the other] one in which ideas about success are more firmly embedded in family and community.

## GOLD RUSH DAZE

It took almost a year for word of the discovery to reach the United States. Bernard Moore and his family moved permanently to their little cabin in Skagway in February 1896. By 1897, Bernard and his father had various employees working for them, getting ready for the stampede they knew was coming. Although they had only completed 4½ miles of their pack trail (NARS 1979 [1900]), the Moores still pronounced their White Pass Trail open July 14, 1897. In late July the first stampede landed at the Moores' wharf, eager to get over the mountain passes before winter. Both Dyea and Skagway were quickly overrun with people, animals and goods, all headed for the Interior. Skagway became an "instant city . . . [with] an array of businesses and professional services. The feverish pitch of building activity continued through 1898 . . ." (Spude 1983:41). Few of the stampedeers were experienced miners, but all had dreams of striking it rich. Some were willing to do hard physical labor, others came to provide goods and services for the inexperienced, and others planned to prevail by their wits, whether or not their methods were legal.

A railroad to the goldfields was envisioned in 1887 by Capt. William Moore: "I fully expect before many years to see a pack trail through this pass, followed by a wagon road, and I would not be surprised to see a railroad through to the lakes" (Moore 1997:86). Financed by English investors (the Close Brothers firm), the White Pass & Yukon Route Railroad

---

<sup>1</sup> There were no telegraphs in pre-gold rush days. Mrs. Sidney was merely getting across the point that they had not sent back word about their status with any travelers.

fulfilled that early dream when it reached the White Pass summit in February 1899. The entire 110-miles of track between Skagway and Whitehorse was completed in July 1900. "The arrival of the railroad changed the Skagway psychology from one of short-term get-rich quick schemes to one with long-term stable considerations" (Spude 1983:41-42).

## POST-GOLD RUSH HAZE

By 1905, Skagway's greatest prosperity was behind it. From a population of more than 2,000 in 1900, it dropped to 870 in 1910 (U.S. Bureau of the Census [USBC] 1900, 1910). Many businesses closed or moved to the next gold strike. Most of the people who remained were employed by the railroad, a practice that continued up to the 1970s. As a critical transfer point for people and freight going into the upper Yukon area, the railroad assured that the town of Skagway would survive. But the businesses found in Skagway changed from outfitting stores, saloons and hotels to ones more directed to selling goods to Skagway's permanent residents. Skagway entered into Prohibition in 1916, and the four remaining saloons were forced to close (Spude et al. 1993:92).

Before 1910, entrepreneurs like Herman Kirmse and Peter Kern began to market goods especially for the seasonal tourist trade; and by World War I, tourism had begun to increase (Norris 1996:29-31). By 1920, Skagway's population was only counted as 510 people (Bureau of the Census 1920). During the 1930s, the railroad only ran two trains a week between Skagway and Whitehorse because of drops in mining production and tourism. Wages were cut, tourism dropped, and people acquired mortgages on their homes. But by the late 1930s, tourism began to rebound, even though freight tonnage remained less than that carried in the 1920s (Norris 1996:32).

World War II placed Skagway into the middle of a large military operation to build a highway from the upper rail limits of Canada into the Alaska Interior. By using the White Pass & Yukon Route Railroad to ship men and materials to Whitehorse, highway construction proceeded north and south from that point. Without warning, the Army descended on Skagway in April 1942 where 3,000 soldiers were temporarily bivouacking in tents all around the town. Using the right of eminent domain, the Army quickly

erected more permanent buildings on every vacant lot in town. By 1943, most of the soldiers were shipped out for other assignments, but some remained until early 1945. The Army's lease on the railroad was not released until April 30, 1946 (Cooper 1998:44-45).

After World War II, the Alcan Highway meant that even more tourists would find their way to Skagway via the railroad. Although several projects, such as a hydroelectric dam at the headwaters of the Yukon in Canada and an aluminum smelter at Dyea, were planned during the 1950s, they never came to fruition (Norris 1996:43-51). The next major changes to Skagway again involved transportation corridors. In 1963, the State of Alaska began regular ferry service from Seattle, Washington, to Southeast Alaska ports, including Skagway (Norris 1996:68). After many years of negotiation, a highway was opened between Skagway and Whitehorse in 1978 (Norris 1996:127).

When Gerald Ford signed Senate Bill 98 into law (Public Law 94-323) on June 30, 1976, the Klondike Gold Rush National Historical Park became a permanent fixture in the Skagway landscape. That was probably the beginning of the current era for Skagway. When the railroad closed down its Whitehorse-Skogway operations in 1982, it signaled a permanent shift in the local economy to one focused on seasonal tourism. The railroad is now only run as a seasonal train for Skagway's many visitors. During the 1990s, seasonal visitation to Skagway increased exponentially: from 164,238 in 1983 to 271,621 in 1990; 361,694 in 1994; 482,321 in 1996; and 678,774 in 1998 (*Skagway News*, March 12, 1999). Most visitors come to Skagway on ever larger cruise ships.

The Moore family experienced the beginning of the change in Skagway's economic fortunes, but the Kirmse family experienced the full shift in Skagway's economy. From the heady gold rush boom days, Skagway changed to a small town totally dependent on the railroad and summer tourism for its economic survival. At the same time, they also participated in the even larger changes in world systems: a shift from the agrarian economy of the 1800s to the manufacturing era of the 1900s, and to the later change to a service economy in the late decades of the 1900s, coupled with changes in

population ethnicity. All these changes impacted the everyday goods they used and discarded, the building methods and materials used in home construction and remodeling, even the landscape they created. That is the premise used in the interpretation of the historical and archeological research conducted on this project.

---

## CHAPTER 3: DEVELOPMENT AND CHANGES TO THE SITE

### THE MOORES ESTABLISH THEIR CLAIM

In 1887, Bernard Moore and his father, Captain William Moore, initiated their claim to Skagway land by marking out a cabin foundation and beginning some cribbing for a wharf along the east side of the shoreline (Moore 1997:87). Many steps would be taken before their claim was finally recognized. It was Bernard Moore, not his father, who applied to purchase the Skagway property under the Homestead Act. The original notice of location had been posted on the property in June 1888 (NARS, Price v. Moore 1979 [1899]:3), and filed in the U.S. Land Office on June 18, 1888. However, Bernard was a citizen of Canada's British Columbia. Perhaps as an attempt to improve his land claim, Moore filed a certificate of citizenship with the Land Office dated December 14, 1894, even though later this was disputed by Skagway residents trying to block Moore's land claim (NARS, Adverse Claims 1979 [1897]:2).

In 1890, Bernard Moore had met and married a Tlingit woman from a prestigious family in Klukwan. Renamed Minnie Moore, her biographical information appears in chapter 6, the last chapter of this book. In February 1896, Bernard moved his wife and two young children, Bernard Jr. ("Bennie") and Edith Gertrude, to Skagway, but then left Minnie alone in Skagway with the children (Moore 1997:179; NARS, Price v. Moore 1979 [1899]:4). Bernard gives her full credit for her participation in this venture: "My wife and I worked together fixing up the log house, chinking it better, putting in a good window, a back and a front door, a rough floor, and making pieces of rough bunks and furniture out of poles" (Blee 1988:12). Blee, while working in their original log cabin, found many of the pieces of clothing Minnie Moore used to chink up walls and windows.

Although the Moores originally wanted to establish their property as the southern link in a toll road over White Pass to Lake Bennett, they were hampered by a lack of funding. Captain Moore had sought funding from the British Columbia provincial government as early as 1887 for construction of his toll pack trail. In

June 1896, he and Bernard finally got backing from a British investor, E. E. Billingham. The terms of the memorandum of agreement required the Moores to relinquish 50 percent of the value of their land claim to Billingham (NARS, Price v. Moore 1979 [1900]: "Ex. D"). As part of the agreement with Billingham, Bernard filed a further notice of location of Skagway lands for a "Trade and Manufacturing" site in July 1896. This change in the land patent application, from a 160-acre homestead to a Trade and Manufacturing site, later became the nub of the legal dispute. Eventually, a corporation named the Alaska and Northwest Territories Trading Company, organized under West Virginia law, was created by Billingham. On October 8, 1898, Bernard and his father signed an agreement with ANTT transferring 50 percent interest in their Skagway townsite claim.

By the end of the summer of 1896, horses, a wagon, and 6,000 feet of lumber were shipped to Skagway. Employees were hired, two cabins built and two wells dug for their use (NARS, Moore Land Patent Application, Affidavit of J. T. Martin 1979 [1897]:3). Testimony states that before September 1897, Moore had made the following improvements to the property (NARS, Price v. Moore 1979 [1899]:4-5):

Log cabin built in 1888 with addition, consisting of a three-story frame building used as dwelling; a story and a half bunk-house; a garden of five acres fenced in and used for raising vegetables; a log stable, a large frame stable; a one and a half story frame residence used by [Moore's] father; a large two-story frame boarding house used by claimant's saw-mill employees; two small log cabins used for like purposes; frame building with stock of general merchandise used in claimant's business of trade and manufacturing; two good wells for use of premises; fencing around improved portions of the claim; eight acres cleared in connection with



boarding house and residence of claimant's father; a twelve foot wagon road from deep water across the one hundred and sixty acres and up the valley of the Skagway river 4½ miles; use of premises for grazing and stock raising, claimant having thereon six cows, a number of goats, pigs, poultry and eleven head of work horses; a saw mill having capacity of fifteen thousand feet of lumber per day costing several thousand dollars . . .

Since we know that the frame house added onto the front of the Moore cabin was only one and a half stories tall, not three, some license was obviously taken in this testimony.

### THE MOORES LOSE THEIR CLAIM

There was a trickle of people through Skagway in the early summer of 1897, but it was at the end of July that the Moore family became surrounded by the tents and buildings of the Klondike stampedeers (figure 3). Although they verbally asserted their 160-acre land claim, they could not prevail against the hordes of land-hungry stampedeers, all looking for land on which to establish their businesses. Bernard and his father had not imagined the frenzy that would result from news of the gold strike, or the thousands of people who would soon be loosed on the Northland. Although the Moore family and their backing corporation tried to force the newcomers to pay rent on their claim, or purchase land from them, they were unable to do so. By August 7, newcomers had organized, formed a government, and named the settlement Skaguay rather than Mooreseville (Bearss 1970:78). Next, a committee of citizens hired surveyor Frank Reid in August 1897 to plat a town that consisted of 60-ft streets and 100-ft x 50-ft lots, 12 to a block (Bearss 1970:77-79). Applicants were allowed to record and claim lot locations for a fee to the town recorder, rather than to the Moores. The standoff between the newcomers and Bernard Moore and his father was not a happy one. Though there are stories of the old captain holding off a rabble with his crowbar, that did not actually happen at the Moore property currently owned by NPS. Rather, it occurred two blocks west, where Captain Moore eventually

was granted a lot at the southeast corner of Fifth Avenue and State Street. Nevertheless, the dispute with the townspeople left a unique vestige on the town's landscape.

The town leaders allowed Bernard Moore to fence off and keep approximately seven acres<sup>1</sup> to claim as his own (NARS, Price v. Moore 1979 [1899]:7). Called the "Moore Tract," its boundaries must have been at least partially the same as the 1896 survey of the property because it was, and continues to be, at odds with the angle of the town's platted street grid. Figure 4, taken sometime between the fall of 1898 and 1899, gives a good view of the park-like look of the Moore property compared with the intensive development in the background. It also clearly shows the southwest corner of their yard jutting defiantly into the middle of Fifth Avenue. Today, the southwest corner of the yard still cuts sharply into the passage of Fifth Avenue into Spring Street. This makes traffic navigation hazardous, tour drivers frustrated, and bicyclists wary. Still, this oddity in the regularity of the town's landscape is an important physical reminder of the deeds of the past, and deserves preservation and better interpretation.

### THE MOORES GET BACK SOME LAND

After the Moores separated their acreage from the rest of the town, the legal wrangling began. Bernard Moore filed another application for a 160-acre land patent with the U.S. Land Office on September 18, 1897. Adverse claims were immediately filed by I. E. Valentine, Frank Price, and other Skagway businessmen to block his claim (NARS 1979 [1897]). The suit was followed with interest by the local news media. Moore scored the first blow when the U.S. Land Office supported his claim (but only granted him 43 out of the 160 acres claimed), despite the fact that "a townsite was located, streets were laid out, good, honest money was paid for lots, houses . . ." (*Daily Alaskan [DA]* 8/26/1898). The next wind blew the city's way: "The owners of property in this thriving city, those who have by their perseverance and the expenditure of their money built up the city

<sup>1</sup> Various documents in the townsite legal case state that Bernard Moore received seven acres of land, but other historical accounts place it at five acres.



**Figure 3.** Photo taken by unknown photographer in late July or early August 1897. Arrow points to Moore House and cabin (in rear).  
Courtesy Alaska State Library, Juneau, Winter & Pond Collection.



at the head of Lynn Canal will not be compelled to buy the property they have themselves created, from an English syndicate . . . Moore's application rejected altogether. No land allowed him" (DA 7/17/1900). By the next day, there was a mad scramble to locate land that had formerly belonged to Moore, the site of the town's ballfield (DA 7/18/1900).

Eventually, the court did agree with Moore's argument and granted him a land patent for 64 acres: "Ben Moore gets the lion's share; Secretary of the Interior gives the applicants for the townsite all the land east of Main Street and south of Sixth Avenue" (DA 1/24/1901). His claim was finally recorded in the Skagway Deed Records (SDR 5:158-160) on June 21, 1902, and the patent in the General Land Office Records (Volume 27, pages 63-65) on June 5, 1902. Because of the prior agreement with ANTT, a new indenture agreement was signed by Bernard and Minnie Moore on July 28, 1902 (Skagway Deed Records 1903b:467-469). This clarified the terms and granted ANTT a 75% interest in Moore's land patent — except Moore's home (assuming it is the 5-acre "Moore tract"), Lot No. 6 of Block 1 in the townsite (the "Moore block"), and the sawmill area that ran from Moore's south fence as far west as Spring Street, east to the White Pass Railroad right of way, and south to Skagway Bay. An important point is that Minnie Moore was a part of this land settlement, and her signature was required on every legal transaction from that time forward.

Simultaneously, Captain Moore and other members of his family, including his son John, sued Bernard to gain title to part of the Moore tract.<sup>2</sup> Their case was heard in April 1901 (DA 4/16-4/18/1901). On November 20, 1901, U.S. District Court No. 1 (Case No. 73) granted title to part of Bernard Moore's five acres to Captain William Moore and his family, and the case for the elder Moore was upheld on appeal (DA 2/13/1903; SDR 1903a:445). A quitclaim deed from John Moore and his wife to William Moore was not recorded until April 9, 1903. No plat was drawn of this land transfer, but it looks like the tract included all the land east of Blocks 22 and 23, Lot 1 (all north of the current site). It does not appear to include the tract of land directly north of the Moore House used as a stable area. Nor did it include the west half of Block 24, Lot 2, the site of the Peniel Mission (Rhodes 1988:565). The deed also noted that

Bernard Moore had previously conveyed the land for the McCabe College building to the college trustees, and they subsequently had transferred title to the United States for a courthouse, the current Skagway City Hall. Also previously transferred to William Moore on October 31, 1899, was a 120' x 143' parcel of land with all "rents and issues accrued . . . from the said tract" (Rhodes 1988:446). Perhaps this was for Captain Moore's home that later became the Pullen House. The deed also noted that \$350 was due from the U.S. Government for rental of a barn or stable on this land, probably Moore's lease to the U.S. Army during its Skagway stay. Part of the tract was sold by Captain Moore to the Northwest Light and Power Company.

### THE MOORES BECOME WEALTHY

In spite of their land difficulties, and legal fees, the Moore family was becoming wealthy. Their financial interests involved other business activities, especially the wharf they began building in 1888. Though the wharf company quickly lost its monopoly, it continued to do a booming business, as Bernard Moore noted on numerous photos of the wharf in his personal album:

Moore's Wharf Skaguay Alaska 4 years after completion, July 4<sup>th</sup> 1904 date of this photo . . . This wharf property commenced to produce a good revenue before its dimensions exceeded 80 ft frontage and while we still only had a large tent on it to serve as a temporary warehouse. (Moore 1976: photo 76-35-64)

Skaguay Bay and town shewing the three wharfs constructed to the left of our dock near bluff at right. These three wharves were never made use of and went to decay for the reason that the White Pass & Yukon Rail-

<sup>2</sup> We have absolutely no indication how these land claims affected the family relationships of the Moore family. The only firsthand account we have is in a diary kept by Bernard Moore and edited and published by his grandson Don Gestner, *Skagway in Days Primeval*. In there, Bernard never mentions any family rifts and always speaks of his father with great respect.



**Figure 4.** Moore House/cabin, ca 1898-1899. Arrow points to Moore House, cabin still in rear (MH); Shed 3 (S3); Privy 1 (P1); fence jog, Moore dump (FJ-MD). Courtesy Skagway City Museum, Skagway, Alaska, Photo No. 79-32.

road Co. tied up to us in the Moore Wharf Co. and signed up a 30-year agreement with us with a schedule of charges for freight all kinds of live stock, water and dockage, and we later on bought in these 3 wharves for the planking in them for a few hundred (Moore 1976: photo 76-35-53).

And further:

Moore's wharf before it was extended and completed, during these years from the period of the completion of the White Pass & Yukon Railroad . . . this wharf and its warehouses were continually stacked with freight of all kinds, and live stock from Seattle, Washington and Vancouver, B.C. and other points, destined for Dawson and others along the Upper Yukon River both in Canadian and Alaska Territory, and was a source of large revenue to us (Moore 1976: photo 76-35-62N).

One of the other Moore family ventures was a sawmill: "This saw mill we operated for some time ourselves, then leased it out to a man who let it get burned up one night in January when it was hard to get water to play on it, so it was a total loss to us" (Moore 1976: photo 76-35-59).

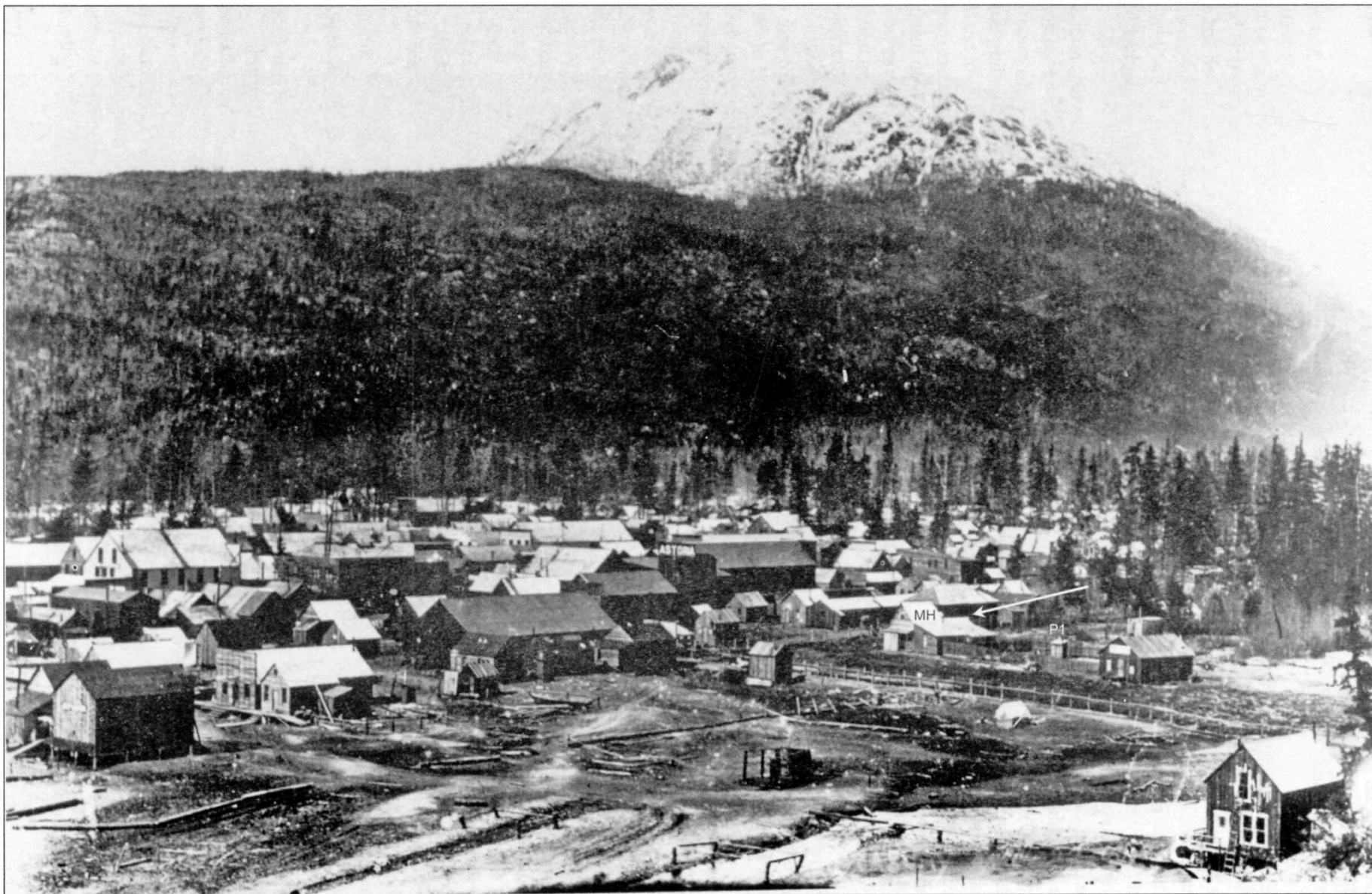
## THE MOORES BUILD A HOUSE

The developments and changes to the house and property through time are summarized, with estimated dates, in appendix 1. Major changes took place from 1896 to 1900. The photographic record of the site during that time is fairly complete and was of great value when trying to understand the various soil and artifact changes we found during excavation. Initially, only the one-room log cabin was built in 1888, barely visible in figure 2 (July 1897). Until the Moore family moved to the site in 1896, it lacked windows and doors and was uninhabitable. By July 1897, a new one-and-a-half story frame house had been built directly in front of the log cabin (figure 3). Surrounded by the tents of the newcomers, the new house lacked finished windows and doors.

During the winter of 1897-1898, the Moores enlarged the house. Testimony given by Moore in his lawsuit states that all these improvements were in place by February 12, 1898: "Two additions to claimant's dwelling, one frame kitchen fourteen by sixteen and one frame shed 15 x 12 . . ." (NARS, Price v. Moore, 1979 [1899]:5). Figure 5, dated April 1898, shows these additions to the east side of the house and cabin. Also visible in the photo, and in figure 4, is a privy in the east yard, a new front porch, and a fence for the interior east yard that probably held the geese and other animals Moore is known to have kept. By June, a parlor was added to the west side of the house.

The hill on the east side of town was a favorite location for photographers to stand for views of the townsite, and most photographs that show the house are taken from that angle, looking west. It was only in 1994, when NPS received artifacts from descendants of the Moore family, that a different view became available. On the reverse side of a piece of ivory scrimshaw, a wonderfully intricate sketch of the Moores' home was drawn (cover illustration). Since an addition had been built onto the east side of the cabin, we know this sketch was made from the west side, looking east. The piecemeal construction of the house is clearly visible in the drawing. It, as well as the other photographs, also raises questions about how the house functioned on the inside. Based on a review of the interior of the house, especially those sections exposed during the building restoration, and a reexamination of the historic photographs, seasonal archeologist Robert d'Aigle came up with several conclusions (d'Aigle 1996).

Since the roof line of the cabin protruded over the south, or front wall, it was impossible for the one and one half story frame building to be placed directly against the cabin. The space between was enclosed. This is really only clearly visible in the scrimshaw drawing. It is likely that when the enclosure was built, the front logs of the south side of the cabin were removed to take advantage of the extra space, making the north wall of the house also the south wall for the cabin "room." When the floor of the house was built, it extended directly to meet the cabin's floor, which had been floored a few months before construction of the house (Blee et al. 1984:274). Bob d'Aigle's examination below the



**Figure 5.** Moore House/ cabin, ca. April 1898. Arrow points to Moore House (MH); P1 (Privy 1). Courtesy Suzzallo Library, University of Washington.



house revealed the now-broken or sawed remains of the original floor connecting the cabin to the house, along with old broadweave cloth used for chinking.

It is possible that there was a direct entry from the cabin's loft to the upper story of the frame building. It may be the only logical explanation for the odd, birdhouse-like structure seen between the roof of the house and cabin in figures 2 and 4. In the scrimshaw drawing, the enclosure can be seen rising higher than the cabin. Inside the top floor of the house, the outline of the cabin when it sat against the house is visible as a paint shadow. The two sides of the cabin roof are clearly asymmetrical. This would have provided extra headroom from the loft of the cabin into the top room of the house. The stairway probably went to the front of the cabin. At some point, the stairway was moved to come down along the north wall of the central room of the house, possibly during the house remodeling of 1899-1901. In 1981, when layers of wallpaper were removed, this ghost shadow was clearly visible (Blee et al. 1984:287). It was also clearly visible in 1993 when our work began, but it is now very faint.

There was also a question regarding exactly where the log cabin had originally been located, before Moore moved it 50 feet west in 1900. The north-south length of the cabin is 16'9" (Blee et al. 1984:298). Blee believed the rear wall of the cabin was 13 feet north of the existing north exterior wall of the house (Blee 1988:295). Our excavations made it difficult to reconcile that figure since we were finding structural remains about five feet north of the current wall, a difference of eight feet. We took a closer look at the inside of the house and found that the closet on the north side of the kitchen is two feet, eight inches wide (32"). The door finishing and the trim are from the time when the Moore family occupied the house. The width of this closet seems to correspond to the original width of the enclosure between the house and cabin and places the north wall of the cabin about five feet north of the current wall, where we found structural remains. It also means that the features identified by Blee as part of the north cabin wall (19, 34, 21) were really connected to the lean-to shed on the north side of the cabin. This shed is clearly visible in the scrimshaw drawing on the cover of this report.

## THE MOORES REMODEL THE HOUSE

Sometime during the winter of 1899-1900, Moore moved the old log cabin 50 feet west, where it still sits today. Logs were replaced in the cabin's south elevation, and held in place by several vertical boards since the logs would have been mismatched and not well anchored (d'Aigle 1996:7). About the same time, a shed appeared in the east side of the yard. It is believed to be the former 1898 lean-to that had been located on the east side of the cabin. During the summer of 1900, the rear of the house was remodeled: bedrooms were built onto the rear of the house, and an odd-shaped half-story addition was raised over the old cabin/house enclosure, providing access to the upstairs room from the east bedroom, but not providing enough space for an extra upstairs room. In figure 6, the cabin is west of the house, and men are working on scaffolding outside the half-story addition. Since it also shows the Peniel Mission building under construction, Rhodes dated the photograph to the fall of 1900 (1988:43). The remodeling was complete by the fall of 1901, when Bernard and Minnie's bedroom on the northwest corner of the house was finished. During restoration work, the wall covering was removed from the bedroom's south wall. Beneath the wallpaper was the old, original exterior siding of the parlor's north wall. The new look of the house is visible in figure 7, seen from the rear. The shed directly to the east of the house still stands and was a part of our archeological investigations. The former cabin lean-to shed is found farther east, where a privy is on its north side. The front of the house can be seen in figure 8. By 1904, the Moores had their house freshly painted, wooden boardwalks built, and landscaping was in place (figure 9). The National Park Service restored the Moore/Kirmse house to that period.

## THE MOORES SPEND LESS TIME IN SKAGWAY

After the settlement of their legal claims, the Moore family began spending more time away from Skagway. By 1900, the two eldest children had been placed in private boarding schools outside Skagway, both eventually receiving most of their education in Tacoma. In 1904, Bernard transferred the homesite by quitclaim deed to his wife and their children (Bennie, Edith, and Frances). The rights of usufruct (use and enjoyment of) were deeded to his wife, who



**Figure 6.** Photo of Moore House, new addition, ca. 1900. Arrow points to Moore House (MH); Shed 3 (S3); cabin (C ). Courtesy Skagway City Museum, Skagway, Alaska, Photo No. A01-30.



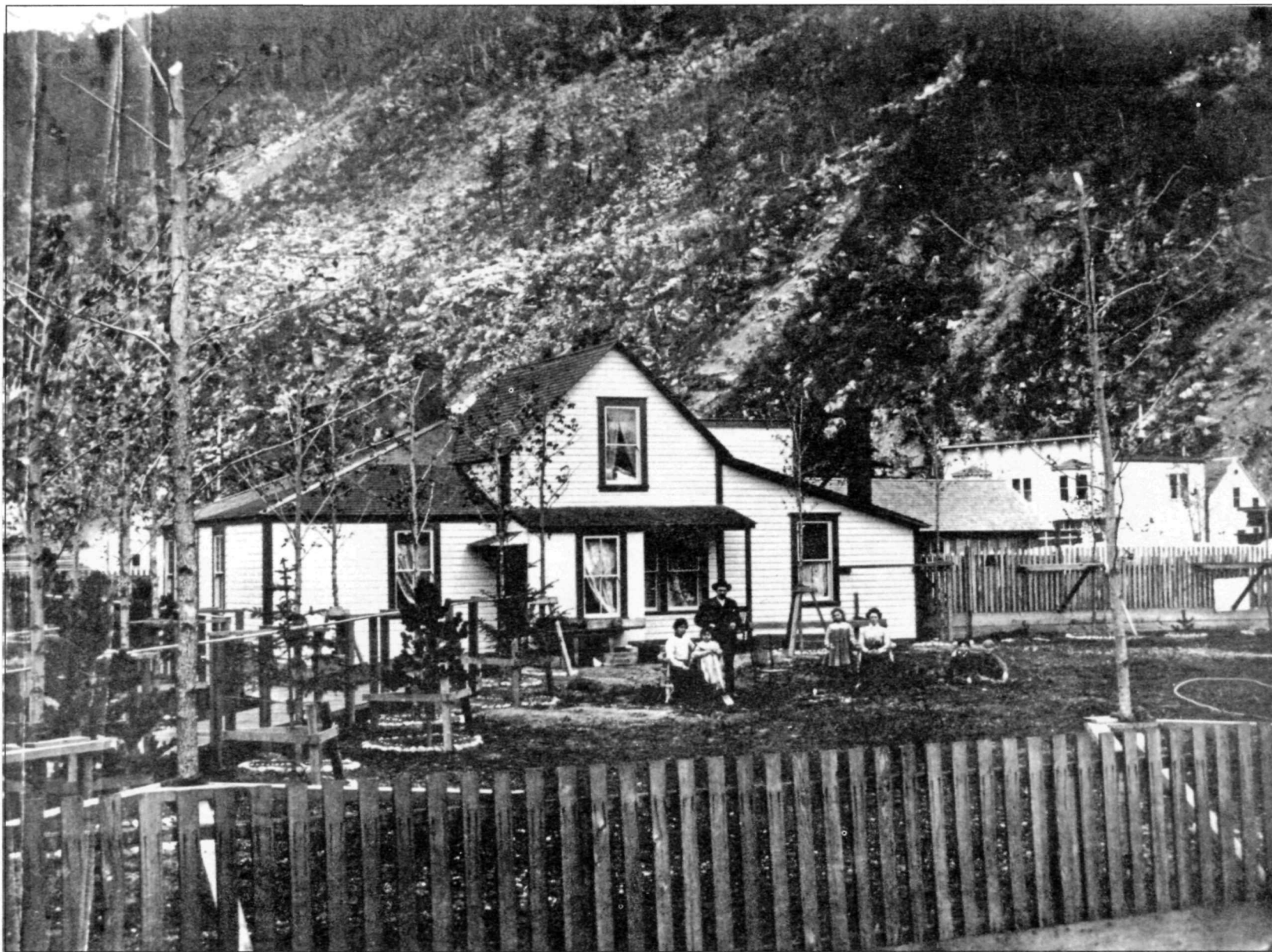
**Figure 7.** Moore House, rear view, ca. 1901-1902. Arrow points to Moore House (MH); Shed 1 (S1); Privy 2 (P2); Shed 3 (S3). Courtesy J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-41.





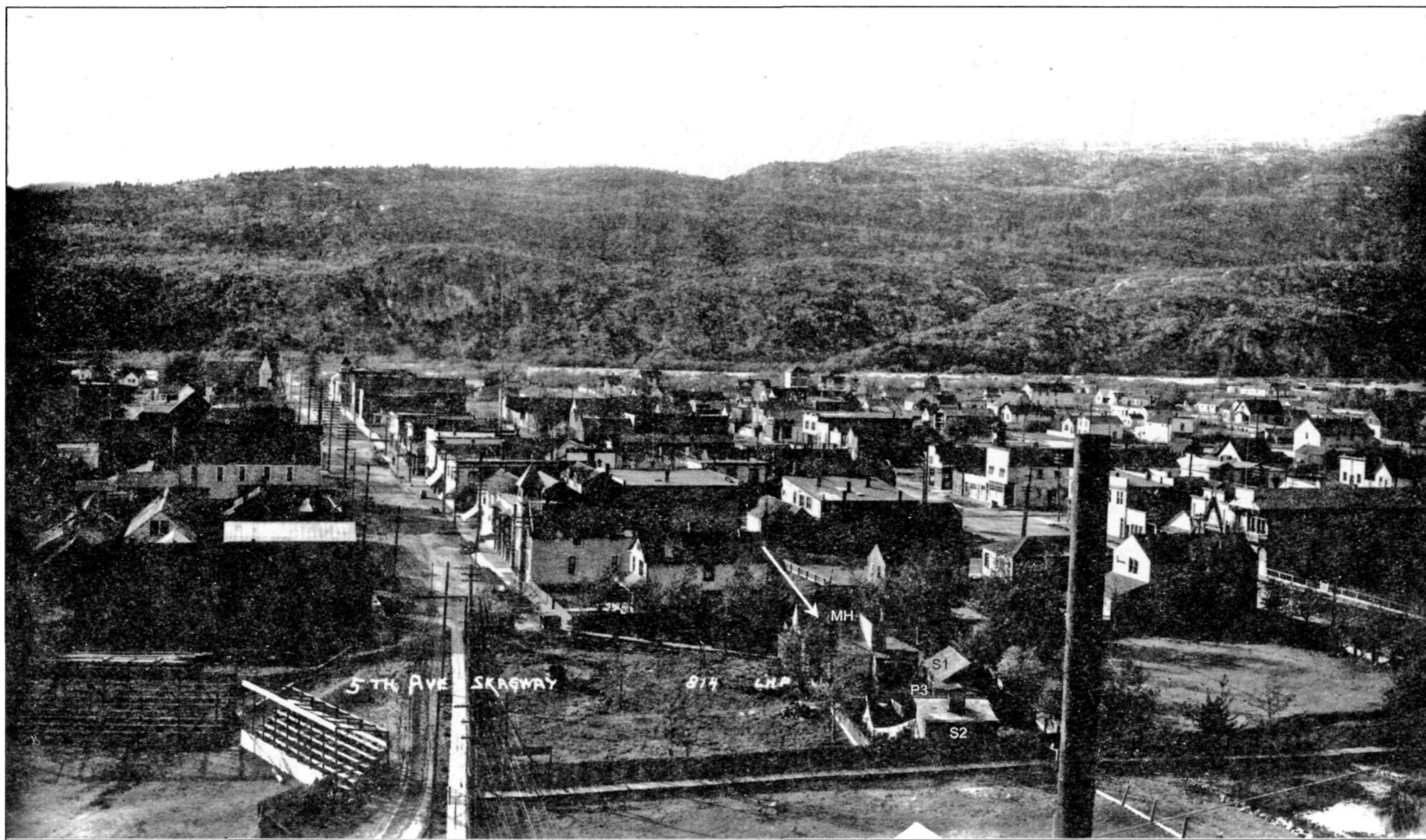
**Figure 8.** Moore family in front of house, ca. 1901. Courtesy J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-81.





**Figure 9.**

*Moore family in front of house, landscaped yard. Courtesy J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-03N.*



**Figure 10.** Photo of Moore/Kirmse House, ca 1909-1915. Arrow points to Moore House (MH); Shed 1 (S1); Privy 3 (P3); Shed 2 (S2).  
 Courtesy Yukon Archives, Whitehorse, Yukon Territory, Print No. 79/102.

was to share the homesite as a “tenant in common” with her children (not as a “joint tenant”) (SDR 1904:234-235). The Moore family began spending ever more time, especially in the winter, outside Skagway, and usually moved between Victoria, Seattle, and Tacoma. In 1906, Bernard sold his [and Minnie’s] interests in the Moore Wharf Company, and the Moore Townsite Company for \$35,000 (DA 9/6/1906), something he later regretted.

Bernard, Minnie, and the youngest daughter Frances moved to Tacoma, Washington, possibly to be nearer the two eldest children. Captain William Moore and his wife moved back to Victoria, British Columbia, in 1906 (*Daily Colonist*: April 6, 1906, p. 6). Captain William Moore died in 1909, and his wife in 1911. A fuller examination of the life of the Bernard Moore family after it left Skagway can be found in the final chapter.

### THE KIRMSSES MOVE IN AND REMODEL THE HOUSE

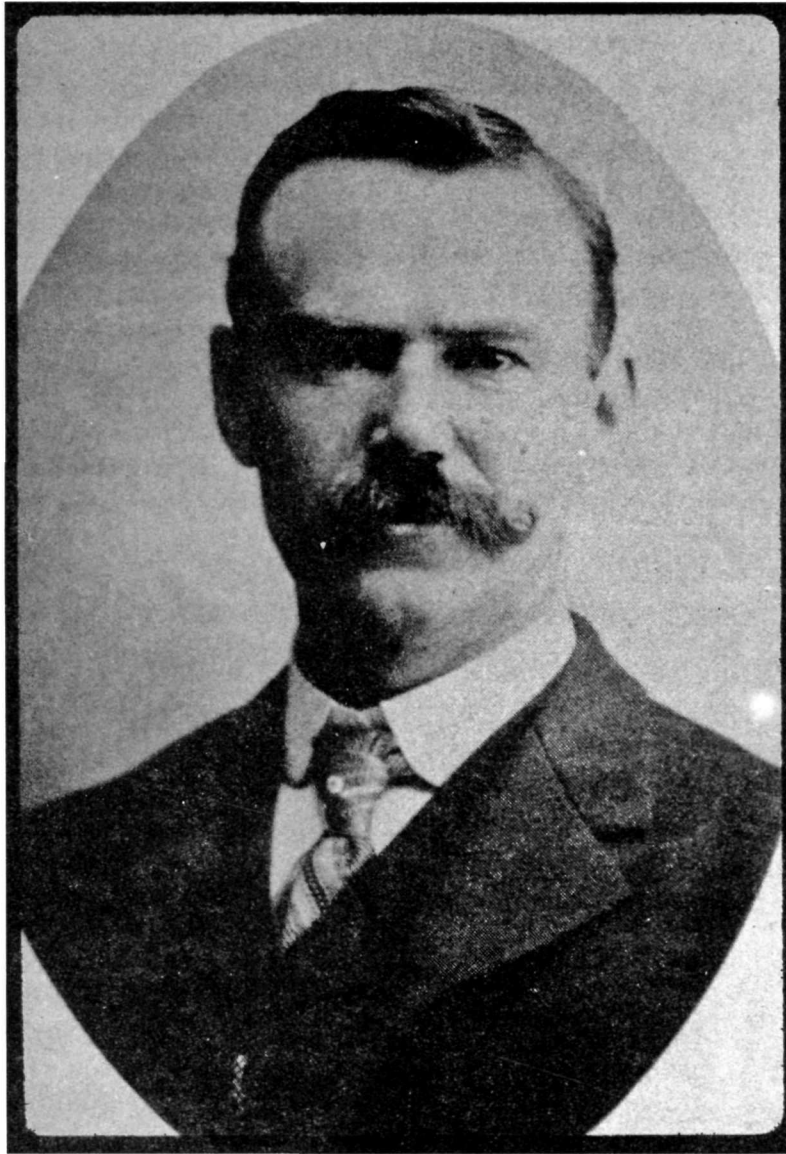
Herman and Hazel Kirmse were living in the Moore’s old house by at least 1910, possibly as early as 1908 (G. Kirmse 1995, pers.comm.), and lived there for about 67 years. After purchasing the house from Minnie [Moore] Roskamp and the Moore children in 1914, they made several changes to the house and property over the years. One of the most visible was the addition of a fireplace along the west wall of the parlor. They also moved or added several windows, moved interior doors, and created new closets. These changes can often be identified because the door and window trim corner molding was a different (although similar) design from that used by the Moores. Through the years, the house was wallpapered and painted many times. Sometime between 1902 and 1908, the privy was moved next to the east side of the shed closest to the house (figure 10, ca. 1909-1915). They also installed indoor water and plumbing (Blee 1988:20) and a cesspool. Later work included foundation stabilization in the 1940s, the addition of red asphalt siding. They would have connected to the post-World War II city sewer system. Soil disturbance from this utility line work was encountered in various excavations around the perimeter of the house.

### THE KIRMSE FAMILY HISTORY

Herman Kirmse (figure 11) was born in 1867 and was descended from a German family who lived around Nuremberg. For 700 years, they were either doctors or goldsmiths.<sup>3</sup> Herman’s family moved to Dubuque, Iowa, after coming to the United States, where Herman’s father was a master jeweler and watchmaker. “At age nine Herman Kirmse was apprenticed and could make any part of a watch or gold jewelry” (G. Kirmse 1995, pers.comm.). Although Mr. Kirmse told the 1900 and 1910 census taker that he was born in Iowa, his children in 1920 reported that he was born in Switzerland and spoke German (USBC 1900, 1910, 1920).

Herman Kirmse left home at age 14 and followed several gold rushes — Colorado, and even Deadwood in the Dakotas, where he was known as the “Kid jeweler of the Black Hills.” He later spoke of those days, when he slept surrounded by bales of hay — “to stop flying bullets” (G. Kirmse 1995, pers.comm.). Herman arrived in Alaska in August 1897 and was the first jeweler in Skagway (SN 12/2/1898). There are several stories about Kirmse’s activities during the gold rush. One was that in 1898 he had a group of Tlingit packers take the first window glass brought into the Klondike over the Chilkoot Pass. When he reached Dawson with his load, he sold the seven-by-nine-inch panes for as much as \$2 each. Another time, he is reported to have taken a load of cantaloupes over the pass and downriver to Dawson, where the bruised and damaged fruit sold for \$20 each. Reportedly, he invested the profit from these ventures into grubstaking unsuccessful miners (Clifford 1975:50).

<sup>3</sup> Most of what we learned about the Kirmse family came from information given to us by Mrs. Georgette Kirmse, who was married to Jack Kirmse from 1963 until his death in 1987. Another source of information was from a short conversation Catherine Blee had with Jack Kirmse when she was working on the Moore house (Blee 1988:59). There is also a short section on Herman Kirmse in *The Skagway Story* (Clifford 1975:49-54). Quite an unexpected source of information was a packet of love letters, found inside a wall during restoration work. Written in 1932-1933, they were from a California woman to Jack Kirmse.



**Figure 11.** *Photo of Herman Kirmse. Photo on file at Klondike Gold Rush NHP, Skagway, Alaska.*

Around 1894, Herman met and married his first wife, Ida. She was born in Washington state, also of German parents. "Mrs. Kirmse suffered from tuberculosis. She was very delicate so when Herman followed the Gold Rush to Skagway to make his fortune — he had to leave his wife and child in Seattle until he could send for them. When her condition worsened, he immediately sent for them to come to Skagway" (G. Kirmse 1995, pers.comm.). She arrived in Skagway in August 1898 (USBC 1900). In July 1900, when Ida was only 27, she died in Skagway. After a funeral, her body was shipped to Seattle for burial (DA 7/17/1900).

Soon, Herman Kirmse met the young Hazel Cleveland: "In the fall of 1900 the very beautiful young Hazel Cleveland walked passed [sic] Kirmse's store on Broadway and Herman saw her. He asked, 'Who is that girl?' The answer was 'Hazel Cleveland.' He answered, 'I am going to marry her!' It was truly 'love at first sight'" (G. Kirmse 1995, pers.comm.). In the 1900 census (taken in the spring), Hazel was only 15, and lived with her parents, William and Sade, and her two older brothers. Both her parents were from Ohio, but all the children were born in Kansas (1879-1884), where her father had been a farmer. Her entire family had migrated to Alaska in



April 1896. In Skagway, her father and oldest brother were carpenters. Hazel attended school.

Herman and Hazel were married on January 2, 1901, in Skagway (DA 1/2/1901). By 1910, besides Herman's daughter Gladys, they lived with their 3-year-old son John ("Jack"), and baby Herman ("Dan"). Gladys was a very talented musician and often played in public (DA 4/9/1910, 6/11/1910). Newspaper articles from 1910 attest to the family's popularity. They attended numerous card parties and other social events. Son Jack's fourth birthday party was attended by most of the children in town (DA 6/11/1910). Although not much is known about their family life, a small article in the newspaper tells the story of three-year-old Jack taking his wagon into the newspaper office's back yard and loading it up with newspaper cuttings to take home. By the time he got down Broadway, the wind picked up his load, sending the paper in all directions. "On account of the elusiveness of the paper it took the Pioneer Jeweler some time to gather it all up, and now he is trying to teach Jack some better use of the wagon" (DA 5/9/1910). Herman Kirmse was also an avid gardener and sponsored yearly awards for Skagway's best gardens.

By all accounts, Kirmse's business was very successful. He made all of his own nugget, ivory, and silver jewelry. He also assayed gold for the miners (G. Kirmse 1995, pers.comm.). By 1904, he moved into a store at Fifth Avenue and Broadway Street that still stands today (figure 12). From the time Kirmse acquired the store until they moved into the Moore House, Kirmse and his family lived above the store (DA 4/28/1908). In 1908 he opened a branch store farther south on Broadway Street that was run by his brother, Richard (DA 6/5/1908; 5/2/1910). In the fall of 1910, he purchased rival jeweler and curio store owner Peter Kern's store and merchandise "to show his implicit faith in the future of Alaska, and Skagway in particular . . . It is [his] intention to keep both stores open, and will manufacture nugget jewelry, souvenir goods, etc., at the Kern store exclusively" (DA 10/10/1910).

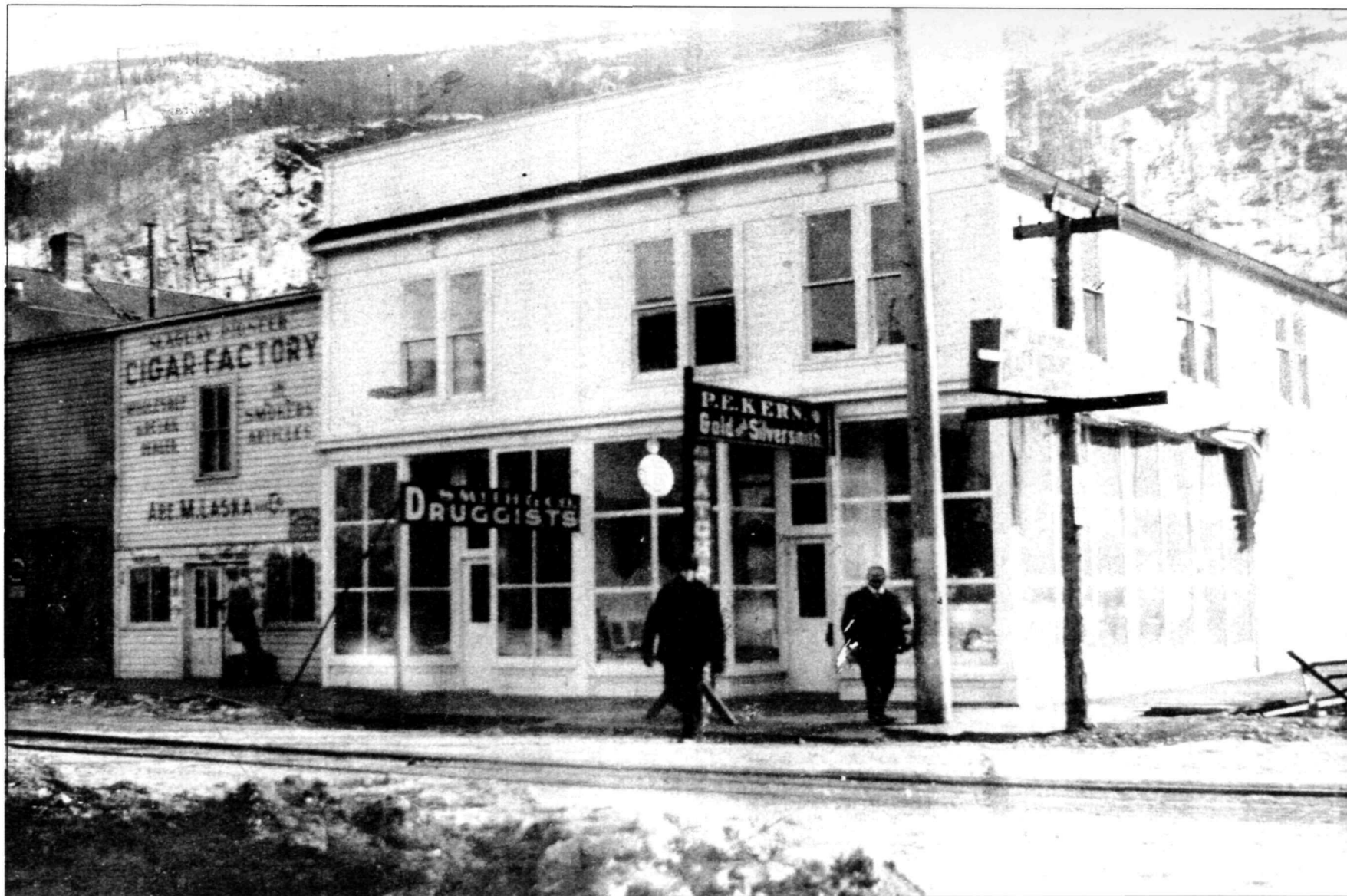
Besides Herman's two Skagway stores, by 1912 he was preparing for the opening of a store in Ketchikan. That is where fate caught up with Herman Kirmse. On November 18, he was greeting a friend at the Ketchikan wharf when he tragically

fell to his death (DA 11/20/1912; 11/23/1912). According to family lore, tickets to New York and a large sum of money were in Herman's coat pocket when he fell. Although his body was recovered almost immediately, the pockets of his jacket were empty (G. Kirmse 1995, pers.comm.). Herman Kirmse was temporarily buried in Evergreen Cemetery in Juneau, and was later exhumed for burial outside of Alaska. His funeral was conducted by his fraternal Elk brothers, and Skagway businesses closed during the time of the funeral out of respect.

Mrs. Kirmse later returned to Skagway with her children, and took over the operation of the Kirmse jewelry store businesses, although she did sell their Ketchikan venture. By 1920, she had remarried, to Max M. Smith, also a jeweler. Little is known about Smith, except that he was born in Minnesota, while his parents were from Vermont and Iowa. It is not known how he and Hazel met, although it is likely it was through the Kirmse business. Family accounts say that he did run the Kirmse store for a time, but the marriage was unsuccessful and he eventually left Skagway. The Kirmse store remained in the family, and Mrs. Kirmse operated it for many years, later helped by her son Jack. Eventually she moved to a nursing home in Seattle, where she died in April 1962 at age 77. Her obituary noted that she may have been the first woman to hold an Alaska driver's license (*Anchorage Daily Times* 4/26/62:2), and the 1914 Sanborn drawing does note that the shed in the east yard was for an automobile.

Rarely do archeologists actually get to review documents that reveal intimate details of the lives of the people they are researching. Here, we were called down to the construction site one day when workers had found a bundle of letters inside an interior wall, all tied neatly in a bundle (figure 13). These were letters written to a 26-year-old Jack Kirmse in 1932. They were from a lady only identified as "Isabella" and were from a time when he returned permanently to Alaska after living in Los Angeles, California. Through their correspondence, it is clear that he went back to Alaska, to Juneau, to help his mother with the family business. Their short correspondence lasted from October 1932 through the end of January 1933. Isabella seems to have been a very melancholy individual, and Jack's departure from California left her very lonely:





**Figure 12.** Photo of Kern Jewelry store, Fifth & Broadway, acquired by Herman Kirmse in 1904. Photo on file at Klondike Gold Rush NHP, Skagway, Alaska.

[October 22, 1932, before Jack left Los Angeles]  
Just don't see how I can do without you for a whole year . . . [Y]ou are the one truly bright light, in this terrible struggle for happiness, here in California.

[October 24, 1932, addressed to Jack in Juneau, like the rest of the letters]  
Well! I do sincerely trust you will never experience the miserable suffering I am, in parting with you. Truly dear, just at present life hardly seems worth the struggle.  
\*\*\* Will be lovely for you to be again with your Mother . . .

[Dec. 2, 1932]  
Well, wonder of wonders, I did finally receive, such a splendid letter from you . . . I am indeed so happy to hear all the good reports, of what the old life, among the former bunch, are doing for you, for I do want you to be happy and successful . . . Please do not allow all those women, in Alaska to . . . take one tiny peck of room in your heart . . . Be nice to them dear, but always allow me to hold my place.

[Jan. 5, 1933]  
So you did appear at Xmas, not in person it is true, but the card, with your smiling face, all bedecked, in warm furs, was indeed a delightful surprise, and greatly appreciated . . . Now! Jack I am a bit disappointed in your not writing me, when you know full well what your letters do mean to me, and surely I do need every little spark of encouragement possible.

[Jan 24, 1933]  
Well! At last a letter from you, and am I happy? Words simply fail me to really express my joy.

[Jan 28, 1933]  
Here I am, having just finished a very difficult letter, written to a friend of the past, hoping he may by chance, or rather, because of his influence in the business world, know of an opening for me in Chicago.

This was the last letter in this neat little bundle. We never even learned her last name, or what happened to their friendship. We do know that Jack was married three times, but Georgette Kirmse told us that she had never heard of Isabella. The fact that these letters were preserved must have meant that this was a very special friendship. Although very personal, they are not unlike many other letters sent to the many men who came to Alaska, promising to return.

Jack did stay in Alaska and with his mother operated what became their only store, the one in Skagway. Married several times, Jack Kirmse did not have any children. After Georgette and Jack married in 1963, they jointly ran the Kirmse store in Skagway. Jack Kirmse was an active participant in Skagway's tourist industry and was important in bringing the National Park Service to Skagway. Although they retired and left Skagway in the late 1970s, they returned to Skagway each summer, something Georgette Kirmse continued to do each year. From her home in California, she faithfully subscribed to the Skagway newspaper and often made charitable contributions after reading of someone's need. Her death in 1998 was a blow to the community.

By learning something about the Kirmse family, we are learning about Skagway. Changes to their business mirror changes in the Skagway economy and foreshadow the current reliance on tourism for economic survival. Their participation in that industry is expressed in detail, and in context with our research results, in chapter 6.



Figure 13. Photo of letters to Jack Kirmse found during construction.



---

## CHAPTER 4: FIELDWORK

### INTRODUCTION

Before doing archeological fieldwork, especially excavation, understanding how and when the soil in the area was created is important. Learning as much as possible about climate and topography, and how they affect or limit the plants and animals naturally found there, is also crucial to understanding how people lived on the site in the past. For this project, we were lucky to have a written memoir from Bernard Moore that described what Skagway was like in the days before the gold seekers flocked there in 1897. The fact that we were actually excavating the site Moore described made his information that much more important. Nevertheless, Moore's autobiography by itself was not sufficient to explain the various processes that formed the site where we excavated. This introduction summarizes that physical background.

### SOIL FORMATION

On the west side of the valley is the Skagway River, fed by the Denver and Laughton Glaciers that are part of the Juneau Ice Fields. The river drains an area of 145 square miles northeast of Skagway and still carries sediments and rocks from the receding glaciers (Yehle and Lemke 1972:8). In 1887, the valley was still crossed with many streams: "In many places along there [tree line, between Fifth and Sixth Avenues] . . . the ground was seamed with little gullies from three to four feet deep; through some of these water flowed, and others were dry" (Moore 1997: Inset). In figure 2, the cabin built by Captain and Bernard Moore can be seen south of the tree line. It was built about 20 feet south of a stream named Mill Creek (Moore 1997:87). During the gold rush era, this stream was filled and used as a trash dump and recently was investigated by NPS archeologists (DePuydt et al. 1997; Rhodes 1988). Today, north-east of the Moore/Kirmse house, there is still a stream, Pullen Creek, that flows in an abandoned channel of the Skagway River along the east side of town (Yehle and Lemke 1972:12).

In the fall, the site has been regularly inundated by rising water from a combination of heavy rains and

high tides. Flooding was recorded in 1897, 1901, 1919, 1936, 1937, 1943, 1944, 1949 and 1967 (Pavitt and Associates 1976:10). Flooding of this site is also known to have occurred in 1994 and 1996. Stratigraphic profiles from excavations conducted by Blee in the 1980s and by our group in the 1990s evidenced thicker bedded sand/silt layers in some areas than in others, obviously due to fluvial deposition from Pullen Creek during those periodic flooding episodes.

Another factor affecting soil deposition at the Moore/Kirmse house is the wind. In the winter, cold winds from the Yukon interior sweep down through White Pass into the Skagway valley. As Yehle and Lemke noted in their geological report, strong winds "may continue for many days, and wind velocities of more than 100 m.p.h. may occur for several hours" (1972:13). At other times, fierce winds come from the south, down this narrow end of the Lynn Canal. Although the house is not on the margins of either side of town, the wind would have been responsible for some soil deposition, especially before the town was built.

### SOIL CLASSIFICATION AND DESCRIPTION

According to latitude, Skagway is located in the Subarctic. However, its location in a recently formed valley, at least in geologic terms, means that its soils have poorly developed horizons. They would be classified as entisols because of the recency of accumulation of parent matter. The soils of the boreal forest, in the Yukon Territory, are spodosols, soils formed in a cold climate beneath a needleleaf forest (Strahler and Strahler 1979:202-216).

Spodosols are "strongly acid, low in plant nutrients such as . . . calcium and magnesium, and are low in humus" (Strahler and Strahler 1979:215). Certainly, Skagway soils do have some of those characteristics. Perhaps a more useful approach to soil classification in this area, especially since Skagway does lie in a relatively flat valley, is to classify soils here as mainly being affected by the process of "podzolization," or water percolating through the soils.

Skagway soils fall into a "gray-brown podzolic soils" classification where leaching of the soil is still the



dominant process, but less prominent than in the tropics. Soils in this classification are characterized by a thin humus layer, followed by a gray-brown leached A-horizon (Kendall et al. 1974:324). Where soil has not been disturbed by human activity, gray-brown is often the dominant soil color at the site. While normally a gray-brown podzolized soil would have a much thicker B-horizon consisting of dark brown, fine-grained soil, here in Skagway that horizon is sometimes nonexistent because of the recent emergence of the land from glacial ice. Below the thin surface soil, rocks washed out from the receding glaciers are encountered.

The soil around the Moore/Kirmse House site consisted of layers that over the excavation years were described in various ways. For this report, a "master stratigraphy," identified in table 1, has divided the soil encountered into three different types: "natural" soil layers - those that contained artifacts, and those that did not, and "artificial" soil layers - those that are the result of some specific human activity. "Natural" soil layers gradually accumulated on the site as the result of natural deposition processes such as wind and water, and may or may not have included artifacts. The World War II era was a significant event in world history and roughly coincides with the time when Jack Kirmse had the house foundation stabilized. After World War II, the world saw the introduction of many new products, especially synthetic and petroleum-based plastics. These show up in increasing numbers in the post-World War II archeological record. Thus, this report uses World War II as a transition zone to separate otherwise indistinguishable soil deposits. "Artificial" soil layers were the result of the erection of a log cabin, house and three major outbuildings, and their subsequent destruction, moving or remodeling. They were also created by building and rebuilding several fences in and around the site, digging various trenches for foundation stabilization, electric, water or sewer lines, the creation of specific dump areas for household trash, and, finally, digging, using, filling in and redigging of holes for privies. These specific events occurred from the time the original cabin foundation was laid in 1887 until 1985 when the National Park Service dug a utility line corridor north of the house. Appendix 1 summarizes the known events that occurred at the Moore/Kirmse House site. Table 1 lists the artifact databases constructed from the soil deposits.

Where relatively untouched by human interference, the stratigraphy at the Moore House site is straightforward: a thin overburden of dark, organic soil that contains many grass roots and a mixed artifact deposit that sometimes contained pre-1916 glass fragments with Styrofoam cup fragments side by side (stratum 1). Below that, the soil layers varied. North of the house, excavation units encountered layered alluvial deposits (stratum 4) from the various fall flooding episodes from the Mill Creek stream that make the land there about a foot higher than the southern property line (Menzies 1993). The differences can be seen in figure 14, a computer-generated contour map of the south and east yards of the Moore House site based on Ray DePuydt's 1988 survey work. The soil layers on the south side of the property are very thin (strata 2 and 3), and excavation units in the southwest yard did not encounter the alluvial deposits. This is similar to what Blee found during Operation 16<sup>1</sup> in the 1980s (Blee 1988:120-125). There are higher elevations around the south and east sides of the house. Excavation units found that this soil buildup (stratum 12) was undoubtedly the result of fill brought in so that water (and ice) would drain away from the house to the unused parts of the yard. Even now, water accumulates in low pockets south of the house.

Several soil strata were geologically very interesting, but were too deep to contain any artifacts or evidence of human use of the land. Stratum 5 was a thin, very light-colored, extremely fine sand deposit that was not found south of the house. It was also found by excavators working at earlier excavations at the Moore House and Peniel Mission sites (Blee 1988; DePuydt 1997; Rhodes 1988). Usually called "glacial flour," it was believed to be created by aeolian (wind-blown) deposition. Another possibility is that it is the Skagway equivalent of the "White River volcanic eruption" that covered the southern Yukon Territory about 1,200 years ago and is found in almost all their archeological sites. (See Cruikshank 1991 for a discussion and map of the ash dispersal.) The bedded fluvial sand layers below this layer were always wetter than those above, and had a higher clay content.

<sup>1</sup> Operation 16 was a 2' wide by 8' long test trench in the front yard, in a circular depression fairly close to the front fence.

Table 1 - Soil Strata Descriptions

STRATUM DESCRIPTION	COLOR	DEPTH OR LOCATION	DATABASE NAME
<b>Naturally Occurring Soil Strata Mixed with Sheet Midden Artifacts</b>			
(1) Organic, humic overburden, often with many roots and artifacts, many recent.	Very dark brown (10YR 2/2) to dark grayish brown (10YR 4/2).	Ground surface to maximum depth of .3'.	POST1940
(2) Podzolized A-horizon composed of fine silty sand that sometimes contains lenses of gray with roots and root stains throughout. Artifacts range from the gold rush era up to the 1950s-1960s.	Yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/4); when mixed with gray is 10YR 4/2 - 5/2 (grayish brown).	Below stratum 1 to depth of about half a foot.	POST1940; PRE1940
(3) Thin (.1-.2'), dark sand/humic layer, containing roots, in stratum 2 or 4; may be the main gold rush era stratum dating ca.1896-1904.	Dark grayish brown (10YR 4/2) to brown (10YR 4/3-5/3).	Sporadically present, either below stratum 2 or dividing stratum 4.	MOORE
(4) Soil from fluvial deposition -- interbedded layers of fine sand and silt, gradually becoming culturally sterile. When present, stratum 3 marks the base of artifact deposition. Deposition of the earlier, culturally sterile soil probably took place <1887 to ~3,000 years ago.	Light olive brown to light brownish gray (2.5Y 5/4-6/2 to 10YR 5/3). When dry is classified as 10YR 6/2.	Generally, one to two feet thick. Thickest next to stream runoff north of house; almost nonexistent south of house.	PRE1940
<b>Naturally Occurring Soil Strata, Culturally Sterile</b>			
(5) Very light, fine sand, no artifacts, roots or sod present. Possible wind-blown deposition. When present, cuts through the lower, culturally sterile layers of stratum 4. Stratum 4 layers below stratum 5 are wetter and have a higher clay content. Possible Skagway equivalent of Yukon's White River volcanic eruption dating ca. 1,200 B.P.	Light brownish gray (10YR 6/2) to white (10YR 8/1).	Very thin, about .1'-.2' thick; not found in units in south yard or where area is disturbed. Possibly needed wetter soil to hold fine ash.	-----
(6) Clay/silt/sand mixture with sand becoming progressively more predominant and coarser and more mixed with pebbles. Soil color varies with amount of moisture in soil. Culturally sterile.	Yellowish brown (10YR 5/4 - 5/3); sometimes classified as light olive brown (2.5Y 5/4) or dark grayish brown (2.5 Y 4/2).	Thin, .2-.3' thick, below preceding strata.	-----

STRATUM DESCRIPTION	COLOR	DEPTH OR LOCATION	DATABASE NAME
(7) Coarse brown sand, mixed with pebbles and some cobbles, beginning of "glacial till." Culturally sterile. Ca. 1,200 B.P. - 3,000 B.P.	Brown to dark grayish brown (10YR 4/3 - 2.5Y 4/2).	Thin, about .3' thick, often hard to tell where it stops and till begins.	-----
(8) Moist, coarse sand with many sorted pebbles, possibly from one isolated flooding episode. Culturally sterile. Pre-3,000 B.P.?	Dark yellowish brown (10YR 4/4) (stratum F, 128N143E).	thin, .2-.3' thick, found about 1.1-1.6' below the ground surface, and about .3-.4' below stratum 5.	-----
(9) Wet, fine sand with large cobbles; possibly in an abandoned stream or riverbed; soil heavily mixed with mica and other unknown mineral deposits. Culturally sterile. Ca. 5,000-7,000 B.P.?	Dark grayish brown (2.5Y 4/2) (stratum G, 128N143E).	Thin, .1-.2' thick, directly below stratum 8.	-----
(10) "Till:" small amount of coarse sand with increasing amounts of cobbles and rocks as depth increases. Culturally sterile. Ca. 3,000 - 10,000 B.P.?	Brown (10 YR 5/3).	At the base of all excavations.	-----
<b>Soil Strata Created from Specific Human Activities</b>			
(11) Soil found in utility line trenches, one ca. 1962 (BT2; Feature 12) and the other ca. 1985 (Features 17, 18N and 29) composed of mixed fill (topsoil, sand, pebbles) and artifacts from gold rush era to post-World War II.	Shade of brown (10YR 4-5/3 - 10 YR 3/2) to olive brown (2.5Y 5/3).	Electric line trench: approx. 3 feet wide and 3-4 feet deep. Utility line work, approx. 2-3 feet wide, 1-2 feet deep.	1985DIST
(12) Soil in foundation trench, ca. 1940-1945 (Features II, 14, 15, 16, and 21) encircling house composed of mixed sandy fill and artifacts ranging from gold rush era to ca. World War II. May have also been when asphalt siding was put over the wooden house exterior.	Dark brown (10YR 4/2) to light brownish gray (2.5Y 6/2).	One to two feet wide, ca. 1 ½-2 feet deep trench around the perimeter of the house (Features II, 14, 15, 21). Undisturbed soil next to the trench also had some artifact intrusion.	TREN1940
(13) Soil in dump, ca. 1907-1925 (Features 30 and 33), bedded black humus/sand and brown sand/ash soil layers containing burned rock, slag, molten glass and metal	Black (2.5Y 2.5/1) and olive brown (2.5Y 4/3).	Northeast side of house, 134-137N, 76-86E, 1-3 feet below ground surface.	KIRMDMP2

STRATUM DESCRIPTION	COLOR	DEPTH OR LOCATION	DATABASE NAME
concretions; bounded by structural wood (Feature 32) on its west side; west of wood is culturally sterile alluvial sand (Feature 31).			
(14) Soil in utility line trenches, ca. 1917-1940 (Features I, 19 and 20) composed of mixed sandy fill soil, pebbles and artifacts.	Dark grayish brown (2.5Y 4/2) to light gray (2.5Y 7/2).	(a) Southeast corner of house (1988), Feature I, builder's trenches 3-4; (b) north of house, 131N74E, Features 19 and 20.	PRE40TRN
(15) Dump, ca. 1910-1930: loamy, friable soil mixed with whole or large artifact fragments grading to friable tin can matrix in Feature 23.	Olive brown (2.5Y 4/3) to dark reddish brown (5YR 3/2) in Feature 23.	North of house and shed, 139-141N, 92-110E, from just below the surface to depth of ca. 1 foot.	KIRMDUMP
(16) Dump, ca. 1887-1907: damp, dark sand/silt/clay alluvial soils (some designated as Feature 24), compact easily, high content of eggshell fragments; grades to lighter color and more friable soil in area of burned concentration of artifacts (Feature 27); relic fence line (Feature 25) runs diagonally across north half of unit.	Grayish brown (2.5Y 5/2) progressing to brown (10YR 5/3), underlain by very dark gray brown (10YR 3/2) loam; deeper, and more into relic streambed, grades to black; soil a dark reddish brown (5YR 4/2) in area of burned artifacts; below that, soil grades from yellow brown to yellow (10YR 5/4 to 10YR 7/8).	Below stratum 15, 142-145N, 98-101E, begins about a foot below the ground surface in the southern half of the excavation area to half a foot in the northern half, and continues down for about another 1 ½ feet until the water table is encountered.	MOORDUMP
(17) Soil found in Feature 11: privy #3, ca. 1908-1917. Two strata are a wood-lined privy — top is coarse loam/sand mottled with coal and ash, while burned rock lends a pink tinge; small artifacts, especially nails, throughout, few organics in matrix; below is a dark, moist, friable organic silt night soil deposit with seeds and complete artifacts.	Upper: very dark brown (10 YR 2/2) Lower: dark gray brown (10YR 4/2).	East of Shed #2, upper levels of Feature 11, from ca. .3-.5' below the ground surface to two feet below the surface.	KIRMPRIV
(18) Soil found in Feature 11: privy #1, ca. 1897-1900, located on top of glacial till (stratum 10), no structural wood visible, intrudes into water table that seeps into cultural deposit consisting mainly of whole bottles; little actual soil.	Gray brown (10YR 5/2).	Below stratum 17.	MOORPRIV

Strata 8 and 9 were only found at the base of unit 128N143E, in the northeast corner of the yard and relate to even more remote events in Skagway's geologic past. Stratum 8 was a moist, coarse sand with many sorted pebbles believed to be from one isolated flooding episode. The wet, fine sand of stratum 9 lay directly under stratum 8 and contained large cobbles; but the soil was heavily mixed with unknown, but shiny gold-colored mineral deposits, believed to be pyrite. This certainly may have been the closest we came to finding gold in Skagway! Taken together, these soil strata are probably from the reestablishment of fauna and flora in the Skagway Valley, following the retreat of its glacier around 10,000 years ago. During the retreat, the valley was at first below sea level, but erosion from the steep surrounding slopes led to a gradual accretion of sediments. In the centuries following the glacial retreat, fluvial soil deposition combined with rebound and accretion, while braided streams spread over all the valley. Gradually, the streams became more channeled, allowing for some soil buildup on the valley floor. In the stream channels, mineral deposits ground out by glaciers might have washed into the valley and might have been less coarse than the surrounding sand on the valley floor. The sediments found at the base of 128N143E are from this geologic past, and if funding were obtained for a pollen analysis for the soil samples, new information might be learned about the vegetation history of the Skagway Valley.

## FLORA AND FAUNA

As realized recently (National Park Service 1994), the northern end of the Lynn Canal is a unique biotic zone — a marine climate that is both moderate and dry. Located on the small Alaska margin of land that is closest to the Alaskan-Yukon interior, Skagway flora and fauna are influenced by the moist, cool marine temperate zone that is characteristic of all of Southeast Alaska, but also by the much drier interior land mass. Its proximity to the much colder interior means that Skagway has only approximately 90-100 frost free days a year. Although its proximity to salt water keeps it warmer than the Yukon interior, the lack of sunlight in the winter does not permit rapid warming. At the winter solstice the sun is up for about six hours, but because Skagway is in such a narrow valley, surrounded on all sides by tall moun-

tains, the amount of visible sunlight is much less. Temperatures in January, the coldest month, average between a high of 28°F. and a low of 18°F. (Pavitt and Associates. 1976:5). From November to March, the temperature rarely rises above 45°F., and is often much colder.

Because of the highly varied topography and microclimatic conditions, the characteristics of the natural vegetation are varied. The most common deciduous tree, the black cottonwood, is a fast-growing, shade-tolerant tree characteristic of moist river bottom lands. Trembling (quaking) aspen (more typical of the Yukon), and balsam poplars also grow at specific sites. Coniferous tree species include western and mountain hemlock, Sitka spruce, alpine fir, and lodgepole pine. The dominance of lodgepole pine on the lower mountain slopes sets this area distinctly apart from the remainder of Southeast Alaska. Trees such as spruce, fir, and hemlock grow slowly, while soft woods such as alder and cottonwood grow quickly. At least some of these types of trees were harvested by the Moores for building their log cabin, and for processing at their 1897 sawmill, the first in Skagway. Most large conifer trees in Skagway begin around 5<sup>th</sup> Avenue, location of the Moore/Kirmse house site. Alder, willow, salmonberry, devil's club, blueberry, cranberry, and currant dominate the shrub communities.

One of the few written sources of information we have about the plants and animals that were present in Skagway before the 1897 gold rush is from a speech given by Ben Moore at the Pioneer's Banquet on August 2, 1904 (Moore 1997: inset).

The entire land in this valley between the mountains, on both sides of the river, was thickly covered with spruce, hemlock, cottonwood, pine and birch. The first-mentioned varieties of timber were the most plentiful, averaging ten inches and seldom reaching three feet in diameter. There were many beautiful little parklike areas where the underbrush was not so thick . . .



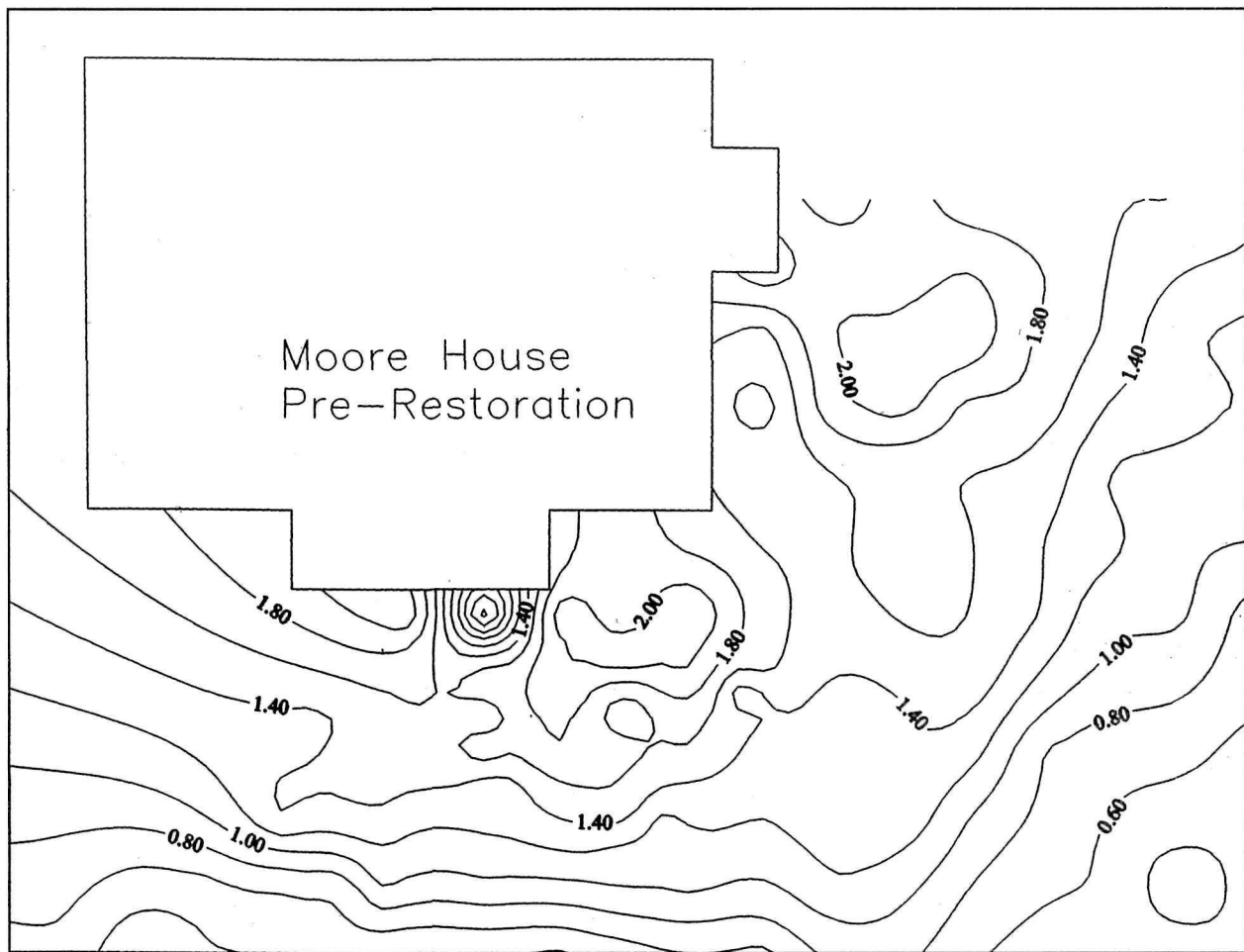


Figure 14. Contour map of site.

\*\*\*

Along from about the upper corner of Broadway and Fifth Avenue . . . the timber was more scattered but grew denser; and farther toward the bay, on nearing the river, were clusters of young spruce and many towering cottonwoods. All along the verge of high-tide line, from the east bluff to the river, we found a great lot of driftwood that covered a large area; and among it grew coarse high grass in abundance.

\*\*\*

In the early days the native family of Smuggler's Cove . . . caught cross and red foxes . . . Porcupines were numerous and could be heard whistling in the trees every morning.

\*\*\*

Saltwater ducks were numerous in the bay. We often saw mallards swimming in the creek back of my present residence, and where the courthouse now stands. We frequently dined upon them.

\* \* \*

After midnight of July 3<sup>rd</sup> [1888],  
 . . . we were surprised to see a  
 herd of about twenty spike-horn  
 mountain goats, including three  
 or four little lambs.

\* \* \*

I have also seen bear up the  
 river but none on what is now  
 the town site, though from the  
 enormous tracks I have seen, I  
 could tell they had been over  
 near the river catching salmon.

Currently, four species of salmon are found in this area. Bernard Moore does mention catching salmon in the stream behind his house, in Mill Creek. Today, salmon still spawn in Pullen Creek, close to the present-day Moore/Kirmse house. A small, herring-sized fish called the eulachon was traditionally caught by the Tlingit during its spring spawning run. Caught in large numbers, it was boiled for its oil. This highly prized oil was a staple of Tlingit trade with inland Tlingit and Athabaskan tribes in the Yukon interior. At this time, the eulachon run is limited to the Taiya River in the Dyea valley, not the Skagway valley.

Today, the major large mammal species found here are mountain goat, and black and brown (grizzly) bear. Mountain goats are hunted in the fall and winter. A small population of moose occupies and frequents the upper Skagway River, as do the occasional caribou. Although moose are also commonly seen near the White Pass summit lakes in Canada, there are oral historical accounts from Tagish and inland Tlingit elders and also early traders that there were almost no moose in the southern Yukon in the middle of the nineteenth century, but their numbers began multiplying after 1920 (Cruikshank 1991:64-65; McClellan 1981b:481). It is doubtful that the Moores would have had to use the animals found at the mountain summit — hoary marmots, a few wolverine and wolves — as a food source. Today, especially in the winter, coyotes and fox who favor human garbage are commonly seen in Skagway. The fox and lynx, and beaver, marten, otter, and snowshoe hare could have been trapped by the Moores for individual use or for trade. A photograph of Bernard and Minnie Moore's bedroom, taken sometime after

1901, shows fox and other animal pelts hanging in one corner.

The most common bird in Skagway is the raven, the beloved Trickster of Tlingit legends. Grouse and three species of ptarmigan inhabit the area, and could have also been killed for the occasional meal. Marbled murrelets and Harlequin ducks are seen commonly. Although no prominent waterfowl habitat is present in the area, there are occasional migratory waterfowls, such as Trumpeter swans and sandhill cranes, that pass through. Small numbers of bald eagles nest in the area. Although not a food resource, this area also contains the northernmost breeding habitat of the rufous hummingbird.

## INTRODUCTION TO FIELDWORK SUMMARIES

Archeological testing — fieldwork — was conducted in various areas of the Moore/Kirmse house property, and in various ways. The methods followed are explained, and then several sections summarize the work. A technical summary of the fieldwork is on file at the park. Descriptions are first divided by the two different methods used — minimally invasive testing and archeological excavation. The description of the archeological excavation is then divided into spatial areas: peripheral (yard), below the house, adjacent to the house, below and south of Shed 1, the household dump north of Shed 1, and the two privies found east of Shed 1. Field crews for the seasons varied: 1988 - Ray DePuydt, Gwen Hurst, and Albert Cammisa; 1993 - April Hayes, Megan Wehrstedt, Amy Orenstein (Mow), and Robert d'Aigle; 1994 - Tim Kardatzke and Ken Graham; 1995 - Tim Kardatzke, Ken Graham, Robert d'Aigle, and Erin Oliver. The 1993-1995 excavations were supervised by the author.

## METHODS

Archeological methods for the 1993-1995 field seasons followed procedures documented in the KLGO Field Manual (Cooper 1995b). Excavation records consisted of forms documenting work in each excavation level or feature. Crew members also usually kept daily journals. All field notes, records and forms are accessioned in the Klondike Gold Rush NHP Museum archives (Cooper 1993b, 1994a and 1995a; DePuydt 1988).

Before beginning the 1993 field season, a large working map of the site was prepared. This map included the locations of all standing structures, 1900 remodeling activities, known utility lines, and previous and current archeological testing. Updated to also include historic fence line locations, the map is figure 15. Before fieldwork began, a grid for the property was marked, with the 0/0 point at the designated southwest corner of the Moore property. The designation for each excavation unit was taken from its northwest corner, and tells how far north and east of the 0/0 point the unit lies. Four corners of the Moore property were used as datum points, and vertical elevations for excavation units were shot from these points. The first, and primary, datum was the northwest property marker, and it had an elevation of 26.5' above mean sea level (amsl). The advantage to using the property corners as datum points was that they were clearly marked, fairly permanent, and on all maps prepared by land surveyors.

All test units were dug by hand using shovel or trowel, and generally were either a 5' x 5' or 3' x 3' square. Excavation levels attempted to follow the natural soil layers. When a soil layer was very thick, it was dug in half-foot increments. Soil colors were assigned using Munsell soil color charts (1992), and those designations are used throughout. Features consisted of structural remains, and soil disturbance from a former structure such as a foundation, utility line, fenceline or walkway. For artifact recovery, soil was screened through ¼" mesh. A soil sample for flotation recovery was retained for at least one level of each excavation unit. Vials of soil were also retrieved for possible soil chemistry analysis.

#### **FIELDWORK SUMMARY - MINIMALLY INVASIVE TESTING**

The future of archeological fieldwork lies in its ability to gain as much information as possible, while disturbing as little soil as possible. New and better methods to "see" what lies below the ground surface without digging up large tracts of land are becoming more common in cultural resource management. At the Moore/Kirmse house site, we used two minimally invasive archeological testing methods to try to learn more about the location of potentially significant

cultural resources while expending fewer dollars. The soil chemistry sampling (used both on a sampling grid, and purposeful sampling to find the elusive second privy) did not actually help our excavation strategy. Mostly this was because we did not start with baseline information about the soil of Skagway. Nor did we understand, at the time, the implications of the various soil chemicals. Information learned from our soil chemistry analysis is presented in this report in the hope that it may aid other researchers who are interested in this technique. Information learned from hand auger testing, in areas where the sewer and water lines were to be dug, did allow us to eliminate expensive archeological excavation from those areas. This method of testing is not new and has successfully been used in Skagway and many other archeological sites to find areas of potential significance. A new technique at this site was preceding the hand auger excavation with a metal detector survey.

#### **SOIL CHEMISTRY SAMPLING**

Although some archeologists have discussed results of their soil chemistry analyses (Adams 1980; Eidt 1973; Hassan 1980; Pogue 1988), the technique has been little discussed in historical archeological literature. No reports were found for archeological work in Alaska. Soil chemistry analysis is very complex, and many variables affect a soil's composition, especially geographic location. High phosphorous readings have been tagged as indicative of finding areas of human activity (Eidt 1973; Hassan 1980). But in spodosols, "the phosphate ion is quickly occluded by the Fe-3 ion in the soil. ... The iron along with its phosphate are litterly [sic] flushed from the soil on a seasonal (or more often) basis, and therefore seldom available in quantities sufficient for measuring" (Frink 1997). High potassium signatures may suggest burning of organics. On the other hand, "calcium and other earth metals will quickly flush from a sandy acidic soil in an area of moderate-to-heavy rainfall" (Frink 1997). The potential for effective use of soil chemistry analysis in cultural resource management projects is tantalizing to consider. When the testing was completed, we could make some preliminary assumptions about the meaning of some chemical signatures we found in the soil. Soil chemistry testing results are presented in the hope that other researchers can use the data.

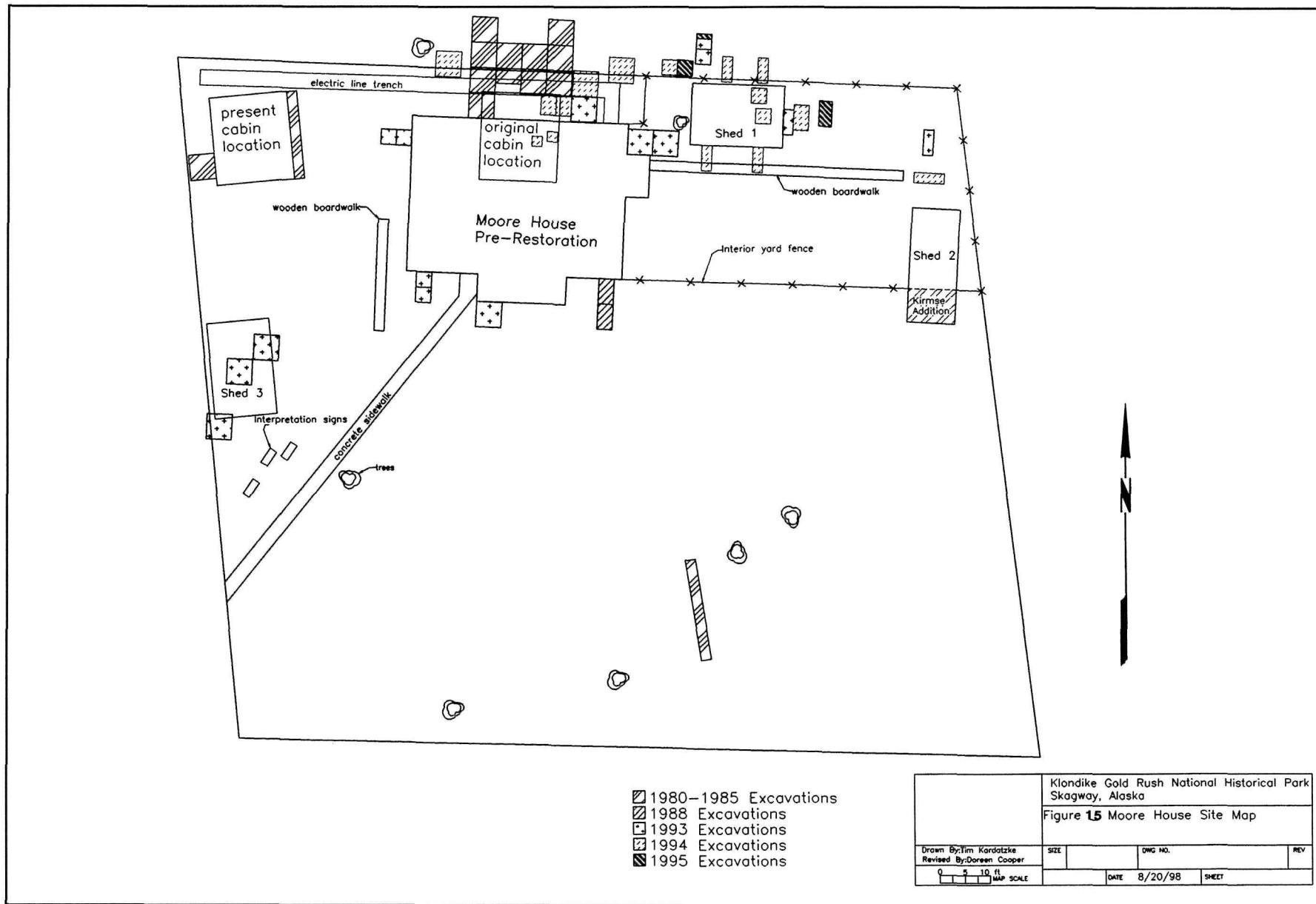


Figure 15. Site excavation drawing

In our initial testing, a total of 49 samples was taken from roughly 25-foot intervals around the site. Besides phosphorous, we tested for pH values, nitrate nitrogen, potassium, calcium, and magnesium. Chemical composition was tested using a LaMotte soil testing kit. These results were then used as the basis for contour mapping using the Surfer® program. The geostatistical gridding method used by the program was *Kriging*: “This method produces visually appealing contour and surface plots from irregularly spaced data. [It] attempts to express trends that are suggested in your data . . .” (Golden Software 1995:5-32). The results of the magnesium testing were not mapped because, with one exception (B6), they were all uniformly low (5=very low, 10=low, 40=medium) (LaMotte 1991:15). Magnesium is subject to more leaching than calcium, and spodosols contain little magnesium (Strahler and Strahler 1979:215).

The average **pH** was 6.0, with a range from 5.4 to 6.6. This is acidic soil, typical of a spodosol (Strahler and Strahler 1979:215), but well within a normal growing range for plants. Figure 16 shows the distribution grouping of pH values on the site.<sup>2</sup> Lower values were found south of the house, where there is little soil development. Higher values clustered in the northeast. The **calcium** in the soil ranged from a low of 300 ppm<sup>3</sup> to a high of 2,800 ppm (figure 17). Sandy soil should give a calcium reading of 500 ppm, clay soil, 1,000 ppm, and organic soils such as peat or forest loam, 5,000 ppm (LaMotte 1991:10). The average value is 2,205 ppm. Since spodosols are low in calcium (Strahler and Strahler 1979:215), the low calcium values are not unexpected and occur in areas of the yard where the soil is sandy and poorly developed. Comparing the calcium and pH value distribution drawings (figures 16 and 17), there is a definite correlation between low pH and low calcium values. Where there is acidic soil (4.8), there is also low calcium (300 ppm) (grid point F5). The higher pH readings, to the east of the house, are mirrored by the calcium distribution. Whether that distribution is due to past uses of the yard, such as keeping animals like geese, dogs, and carrier pigeons is not known. Further research could prove enlightening and could make soil chemistry analysis a more viable tool for reconstructing cultural landscapes.

The distribution of **potassium** (potash) in the soil can be seen in figure 18. Since many artifacts from the Kirmse dump and privy exhibited evidence of burning, it was anticipated potassium values would be higher in those areas. That was not the case. A cluster of high values along the southeast side of the property boundary was unexpected, and no reason for high values there is known. In historic photographs, there was once a long, wooden building in the area, directly east of Moore’s fenced yard. Perhaps there had been a fire here, and archeological excavations might reveal that information. Unfortunately, most of the building was not on NPS property, and time was not available to do a test excavation on the NPS side of the property line. The area should be considered potentially culturally sensitive until archeological testing can take place there.

**Nitrate nitrogen** was tested, but values were very low. Peaks were found in front of the house and in the northeast corner of the property. It is probable that the high values in front of the house related to the flower bed there. There were higher nitrate values in the northeast area, an area currently overgrown with various weedy shrubs. Since horses are sometimes staked in this area to graze during the summer, it is possible that has had an impact on the soil. Nitrate nitrogen may not be a reliable indicator for finding archeological resources since the dump found north of Shed 1 did not register high values. As expected, the amount of **phosphorous** in the soil, an average of 25 ppa<sup>4</sup> and a maximum reading of 60 ppa, was much lower than in soils from a warmer climate. However, the highest readings were obtained from the Kirmse dump.

<sup>2</sup> Some gridpoints, such as G5, appear to be under buildings on the distribution maps. That was not really the case, but is merely the result of integrating two different computer programs, Surfer and a pre-existing site drawing from AutoCAD.

<sup>3</sup> Ppm = parts per million.

<sup>4</sup> Ppa = pounds per acre.



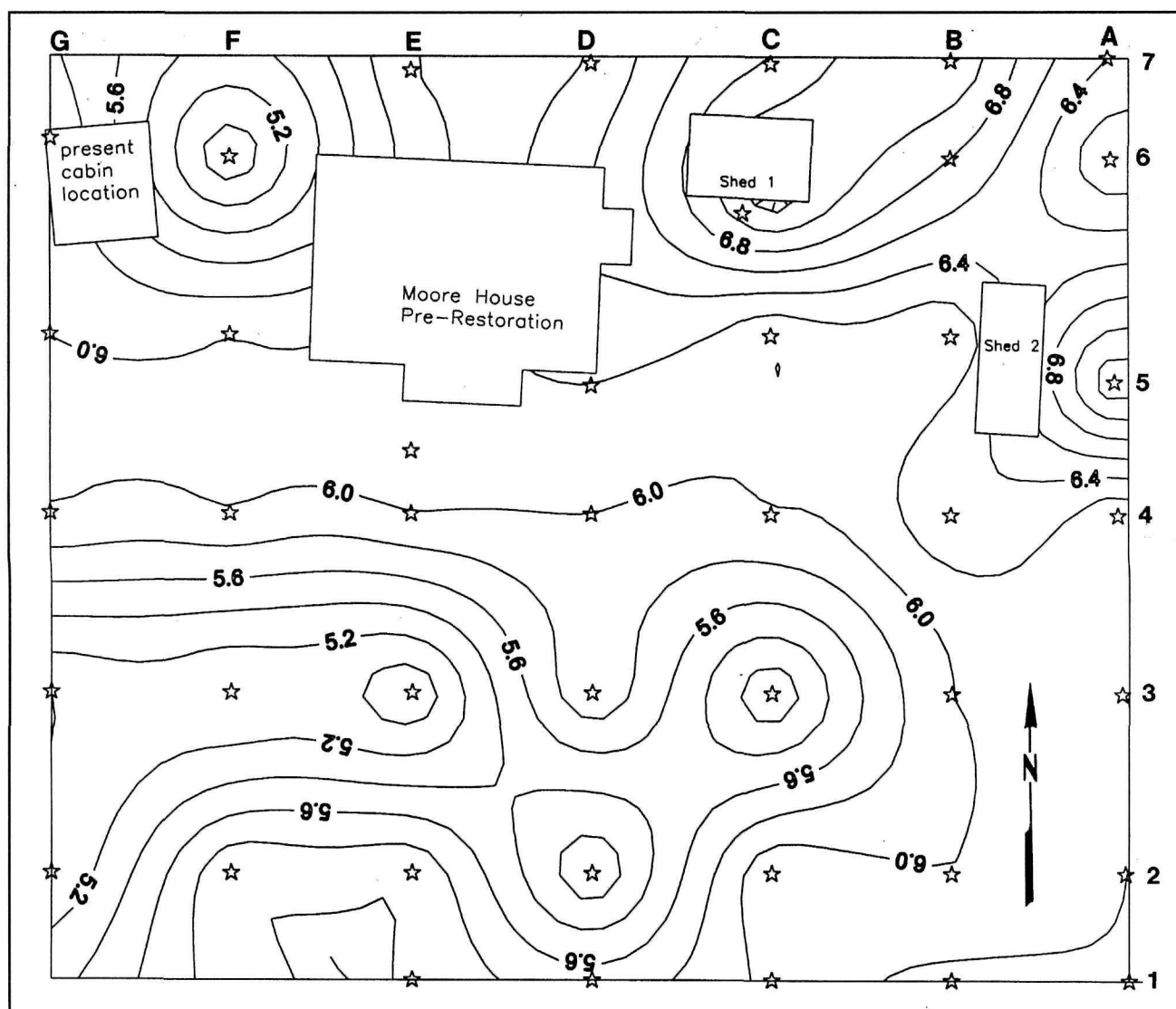


Figure 16. Soil pH distribution, contour interval .2.

### SOIL CHEMISTRY TESTING FOR CA. 1900-1910 PRIVY

Crew member Robert d'Aigle tackled the question of the location of Privy 2. Figure 7 is a photograph dated about 1902, and a privy can be seen just north of Shed 2. That privy was believed to have been used from about 1900 until 1908, but where was Shed 2 actually located? Sometime after the 1914 Sanborn map was drawn, Shed 2 was enlarged and possibly moved. Shed 2 does not appear on the 1948 Sanborn map. At first, soil inside and to the north of Shed 2 was probed for evidence of the privy, but none was found. Based on d'Aigle's estimates of the original location of Shed, 2, an area from 126N-143N and 134.5E-146.5E was chosen for a soil sampling grid.

Divided into six 4' x 4' squares and three 3' x 4' areas, two-foot deep soil probes were taken in each unit: one in the center and one in each corner. Penetration was consistent across the grid to a depth of around 1.8' before encountering stratum 7, the base soil for all prior excavation units. Soil texture, composition, and color were consistent across the grid. There were no soil anomalies, artifacts, and in particular, no "night soil" deposits recovered. Soil was collected from the upper and lower levels of each probe so that it could be chemically analyzed for soil pH, nitrate nitrogen, phosphorus, potassium, calcium, and magnesium.

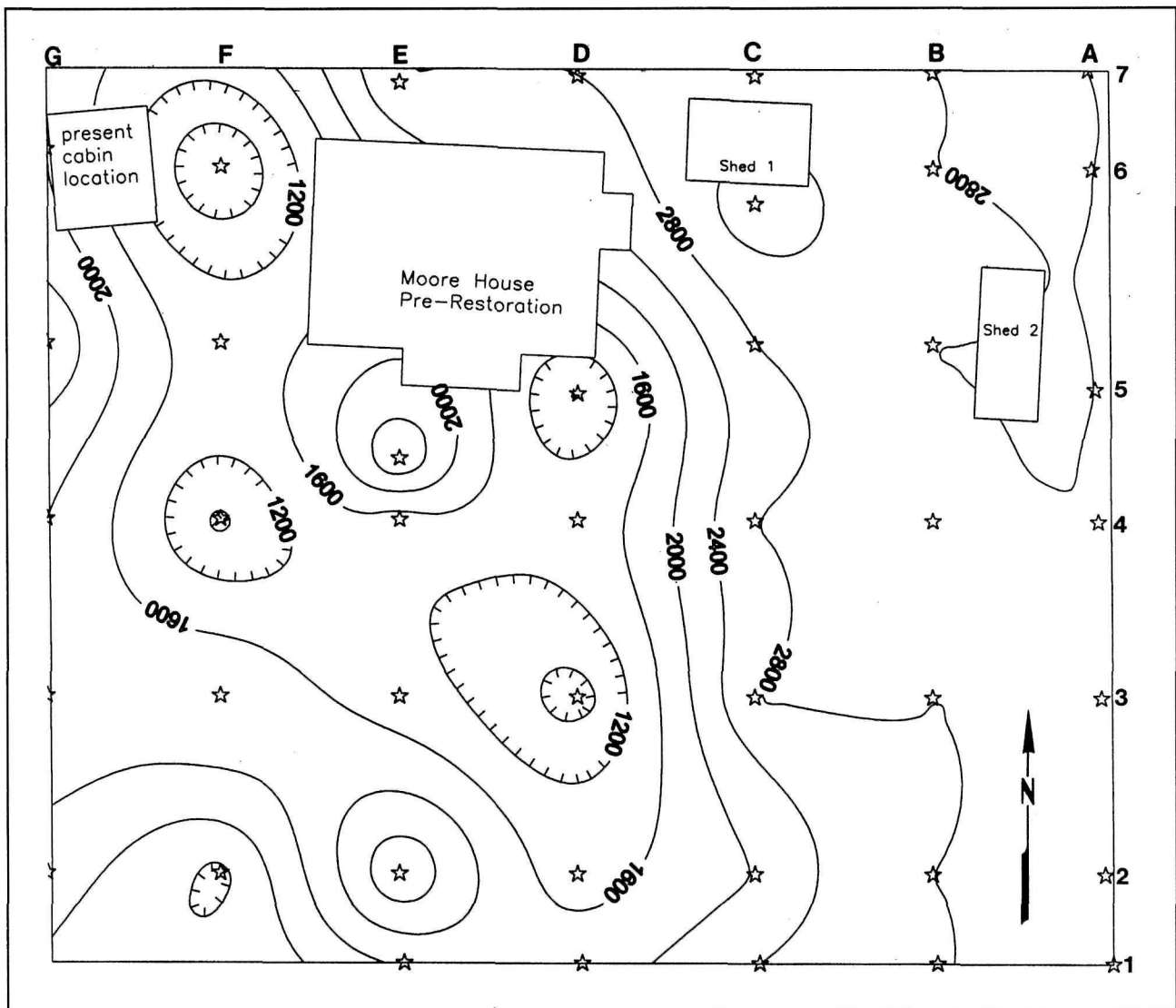


Figure 17. Soil calcium distribution.

The table also includes results of soil chemistry analyses on known privy deposits at the Moore House and another Skagway site, Block 39. Comparing privy deposits with those from the 1993 soil testing grid shows that the main difference in privy samples is elevated phosphorous and reduced potassium and magnesium levels in the privies. The soil also may be a bit more alkaline in the privies. The soil chemistry signatures for Privy 2 testing are not similar to the privy soil profile. Phosphorous levels are very low (14-50 ppa), and the potassium signature is very similar to that established for the main soil grid. Thus, testing for the location of Privy 2 eliminated the test grid as a possible area for cultural resource protection. Any further testing for the privy

location should perhaps take place east of Shed 2 or under its floor.

### SEWER AND WATER LINE TRENCHES - EXPLORATORY TESTING

In 1994, metal detector and hand auger testing was conducted on sections of the east yard that would be affected by the installation of sewer, water, and electric lines. Soundings were recorded at 10-foot intervals along marked grid lines. Medium to high soundings were found close to the shed northeast of the house, and about halfway between the shed and where the fence enclosing the inside yard had once been. Higher readings were also found along the

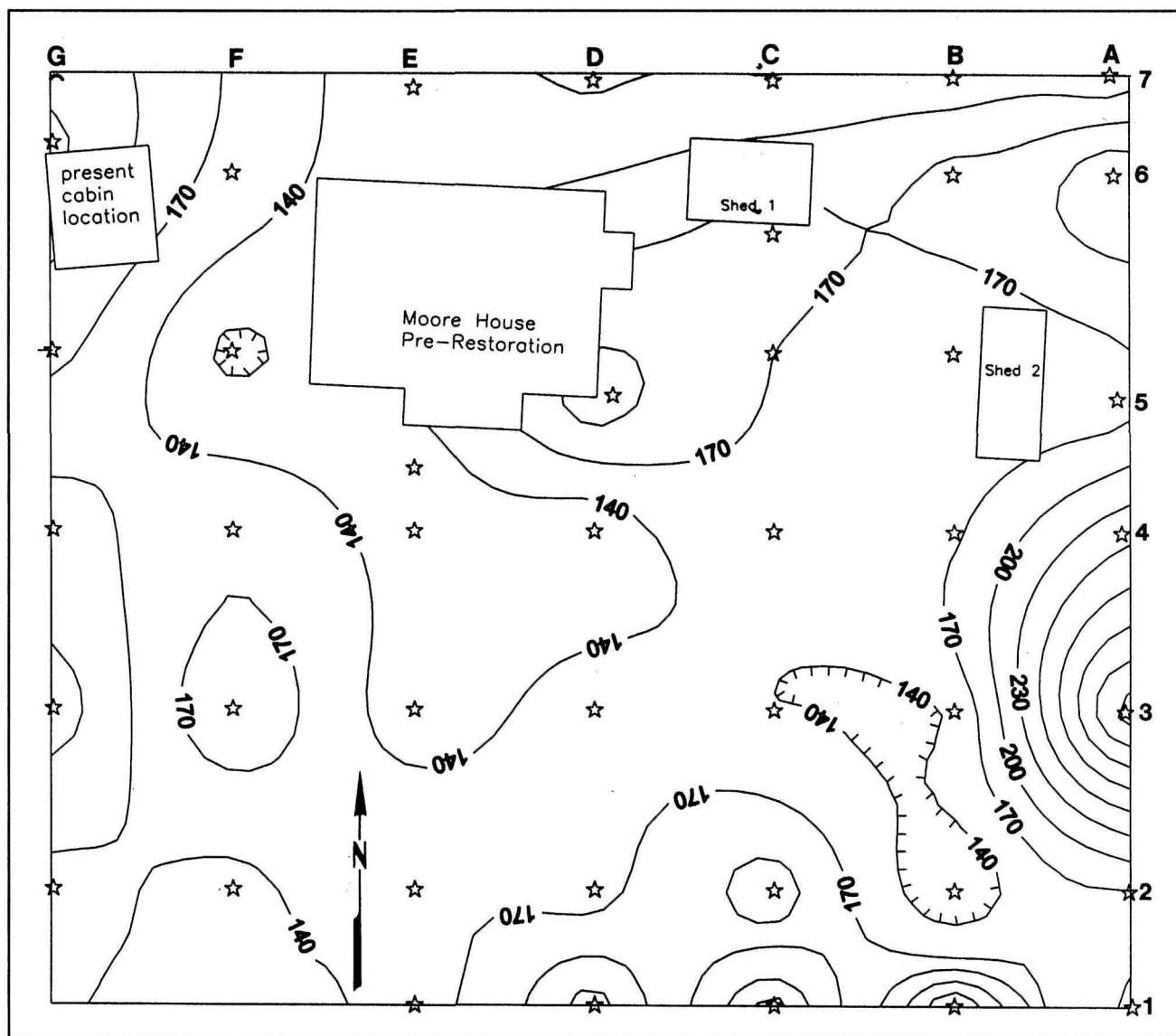


Figure 18. Soil potassium (potash) distribution.

suspected course of the present-day water line. As the distance from the house increased, the number and frequency of positive soundings decreased. As the survey transects drew close to the present-day southern fence, the frequency and intensity of the soundings increased. What this means is that in the past, people tended to drop trash or dispose of garbage close to a house. The farther away from the house one moves, the less likelihood of encountering a trash deposit. Here, the soundings increased because of debris discarded from people passing by. Overall, results from the metal detector survey showed that the most potentially sensitive areas were not more than 35 feet south of the shed. Higher

readings south of that point were probably due to present-day utility lines and litter from the street.

Using the metal detector results as a guide, a total of 28 holes were successfully hand-augered. Consistent with the metal detector readings, most artifacts were recovered from the inner yard area and consisted of small pieces of glass, ceramic, or metal. No significant features or structural remains were found. Soil layers followed the general stratigraphy of the property: stratum 1 evolved into stratum 2 that covered stratum 3, a possible former ground surface. Stratum 3 was generally present in areas closer to Shed 1, inside the previously fenced east yard, seen

in photos dating to the Moore occupation of the house. It is extremely likely that during the 1940s foundation work, soil from under the house was spread over the existing ground surface. Based on the results of the shovel testing, it was not believed that utility line construction activities would have an adverse impact on cultural resources in the area. Monitoring of the construction work in 1995 proved that to be true.

## FIELDWORK SUMMARY - EXCAVATION

Thirty-nine excavation units of varying sizes were excavated in strategic locations around the site and are drawn in figure 15. Four units north of the house were placed around Blee's 1980-1985 excavations to look for any intact remnants of the original location of Moore's 1887 cabin and to investigate a wood-lined household dump exposed during excavation. North of Shed 1, six units were excavated to learn the limits and scope of a household dump near the former Mill Creek, used by both the Moore and Kirmse families. Since Shed 1 was completely removed for refurbishing and a concrete pad placed under the refurbished shed/ power plant, the wooden floor of the shed was removed. A gridded surface survey recorded and collected artifacts. Excavation units also further explored feature areas to (a) make sure that the 1897-1900 privy was not in this area and (b) to better understand the deposition process north of the shed. East of Shed 1, four units were excavated to (a) determine the limits of two privies and (b) remove the remains of the privies that would be destroyed when foundation work commenced on Shed 1.

Features were numbered consecutively throughout the 1993-1995 field seasons. All features were identified during excavation of test units. Structural features all related to some kind of wooden structure, usually a fence or walkway. Other features generally related to some kind of soil disturbance caused by a specific human activity, such as putting in a new foundation under the house, digging a privy hole, or dumping household debris in a specific location. Table 2 summarizes the 40 features identified during the excavation. Specific information about each feature is discussed with the excavation summary for that unit.

## PERIPHERAL YARD AREA - SOUTHWEST

The first area to be excavated was the southwest yard, units **65N0W, 76N10E, 81N15E**, each five feet by five feet (figure 15). They were excavated to gain an understanding of the soil stratification and also to locate remains of a former shed (Shed 3, ca. 1898-1948+). From the 1914 and 1948 Sanborn insurance maps (figures 19 and 20), Shed 3 was approximately 15' x 15'. Only three soil strata (1-3) were encountered. Stratum 10, the sterile fill of coarse sand and large rocks and cobbles, was encountered in all units about a foot below the ground surface.

Five features were encountered. Two features, 1 and 4, were in unit 65N0W (figure 21). Feature 1 was a round, shallow, light-colored, sandy stain, one-foot in diameter, and may have been from an electric or flag pole seen in historic photos from 1900-1904. Feature 4 was a posthole that still contained a decayed fencepost. This side of the property was fenced beginning by August 1897, when Bernard Moore was forced by the Klondike stampedeers to fence part of his homestead claim. Feature 4 may also be aligned with the fencepost discovered by Blee during Operation 27 at the Moore cabin (1988:255-272). There was a fence along this side of the property until at least the 1970s.

Three features found in units 76N10E and 81N15E relate to Shed 3. Feature 3, a small, oval, culturally sterile, light yellow-brown sand stain, was found in the northwest quadrant of Feature 2 (figure 21). It is believed to be a post mold, possibly from a vertical building support. The light grey sand in Feature 2, found almost a foot below the ground surface, was mottled with ash and burned artifacts. Wood found in the unit's northeast corner, at the base of the feature, may have been the northeast corner of Shed 3. Ash and burned wood found in Feature 2 might mean that Shed 3 eventually burned to the ground. Feature 6, a dark brown linear feature running west to east, was identified about .6' below the surface (figure 21). Since there was no wood found in Feature 6, it may have been where draining water made a permanent feature in the ground. The only artifacts recovered from inside this feature were a wooden handle and a rusty bit of unidentified metal.

**Table 2 - List of Numbered Features**

FEAT. NO.	DESCRIPTION	LOCATION	POSSIBLE FUNCTION	CONTENTS
I	Trench that ran diagonally across the unit	89N81E	Water line trench	Wooden beam, few miscellaneous artifacts
II	Rectangular area of disturbed soil (BT3)	94N81E	Part of 1940s builder's trench	Decomposed nails and windowpane fragments
1	1' diam. round, sand-filled "stain"	65N0W	Power pole, flagpole or fencepost	None
2	Grey mottled area containing misc. sheet trash	81N15E	Possibly related to former shed; some evidence of burning	Ceramic sherds, windowpane, charcoal, milled wood, misc. nails/metal
3	Somewhat round sand stain with rust-colored stain around edges, approx. .3' x .45'	81N15E	Possible postmold for shed	None
4	Fencepost	65N0W	Fencepost, 4" x 6"	Nails
5	Mottled silty sand area with artifacts	76N10E	Inconclusive; could be part of dirt floor for shed	Nails and unidentified metal
6	"Line" of dark brown sandy organic soil	76N10E	Possible drip line for former shed, but possibly a root stain	Nails, unidentified metal and part of a wooden handle
7	Circular piece wood	125N86E, runs N/S along east unit wall	Part of original Moore House fence; gone by summer 1900	Wood; artifacts from surrounding area were mixture of structural and household, mixed dates
8	Square area of dark brown silty sand	125N86E	Builder's trench, probably pre-1940	Wire nails, windowpane, gnawed bone
9	Shallow, circular area of gray brown coarse sand	125N86E (inside Feature 10)	Posthole from pre-1900 building or fence	Charcoal and a pork or lamb chop
10	Rectangular area of brownish gray fine sand	125N86E	Builder's trench from unknown construction	Two glass fragments



FEMAT. NO.	DESCRIPTION	LOCATION	POSSIBLE FUNCTION	CONTENTS
11	Oval-shaped area of dark brown soil/fill with coal; wood and night soil in middle portion; oldest privy was at water table	130N116E, 128N118E, 131N118E, 132N123E	Two privies, one ca. 1910-1917 (top levels), one ca. 1897-1900	1910-1917: many whole artifacts such as a light bulb, silverware, ABM bottles; 1897-1900: many whole medicine bottles
12	Rectangular area of mottled brown sand containing a 6" ceramic sewer pipe covered with a layer of Styrofoam	125N91E	Post-1940 sewer pipe trench with 1985 Styrofoam covering	Sterile sand surrounded pipe and overlay glacial till; bulk of feature unexcavated
13	Circular piece of wood with post holes running parallel to Feature 7 along east wall of unit	125N91E	1898-1900 east yard fence	Area around wood: nails, windowpane, milled wood, crown cap, small ceramic doll teacup
14	Rectangular area of disturbed soil	95N45E	Part of 1940s builder's trench	Wire nails, windowpane, brick, bone and red asphalt siding
15	Rectangular area of disturbed soil	90N58E	Part of 1940s builder's trench	Wire nails, windowpane, flowerpot fragments, porcelain buttons, bone, red asphalt siding
16	Rectangular area of disturbed soil containing sewer pipe with Styrofoam covering	131N74E	Part of 1940s builder's trench and associated sewer line with later protective covering	Milled wood, wire nails, metal spike, clinkers, glass thermometer fragment, plastic candy wrappers, red asphalt siding
17	Small rectangular area of dark yellow/ brown sand w/large cobbles	131N74E, northeast corner of unit	Electrical line trench dating from 1985	Recent plastic, wire nails, windowpane, milled wood
18	Wood in rectangular area of dark grey brown humus loam, cobbles and coarse sand lenses	131N74E, north half of unit, wood runs E/W	Wood remnant from rear wall of ca. 1887 original log cabin	From area surrounding wood: wood, cut and wire nails, can fragment
18N	Dark soil north of Feature 18	131N74E	Area north of Feature 18 disturbed by 1985 electric line trench	Cut and wire nails, asphalt siding, metal, Styrofoam

FEAT. NO.	DESCRIPTION	LOCATION	POSSIBLE FUNCTION	CONTENTS
18S	Light-colored sand south of Feature 18	131N74E	Part of area beneath original cabin floor, ca. 1896-1900	Cut and wire nails, tar paper, windowpane, stove foot, paint, light bulb, button
19	Circular area of coarse, grey sand with pebbles and cobbles	131N74E, east wall of unit, above Feature 20	Disturbance from installation of ca. 1917 water pipe	None
20	Corroded 4" water pipe covered by wood. First seen as a rectangular area of different colored soil	131N74E, running along east wall of unit	Ca. 1917 water line	Bone fragments, unidentified metal and milled wood
21	Rectangular area of disturbed soil	123N40E	Part of 1940s builder's trench	Wire nails, windowpane, milled wood, unidentified metal, red asphalt siding, concrete fragments
22	Artifact cluster beneath Feature 18	131N74E	Associated with ca. 1887-1900 log cabin	Leather shoe sole, tin can, milled wood fragments
23	Concentrated artifact area covering unit; base of horizontal wood planks running east/west. Soil matrix is thousands of decomposed tin can fragments	142N98E	Post-1907 trash dump	Tin can fragments, burned ceramic and glass sherds, many whole or cross-mendable. Also many eggshell fragments
24	Below wood floor of Feature 23. Reddish soil showing evidence of burning: coal, burned rock, etc.	142N98E and 145N98E Only extends from 141N to 145N	Predates Feature 23	Very small artifact fragments, fewer than Feature 23. Few tin can fragments, small pieces of glass or ceramic, more eggshell
25	Fence running diagonally from northwest corner to east wall across northern half of unit	145N98E	Part of fence seen in historic photos, 1898-~1914	Decayed wood for fence and at least one fencepost; 1 nail <i>in situ</i>
26	Darker soil than Feature 24	145N98E, north of Feature 25	Part of pre-GR Mill Creek; artifacts may be mixed with other dump north of house	Whole or mendable artifacts: saucer (Johnson Bros/England), bottle, windowpane, some tin can fragments

FEAT. NO.	DESCRIPTION	LOCATION	POSSIBLE FUNCTION	CONTENTS
27	Rectangular area of <i>in situ</i> burned nails, pinkish soil	145N98E within Feature 24	Unknown, some pre-1900 construction?	Wire nails, mostly in large, burned clusters
28	Rectangular, flat wooden plank	NW corner of 144N98E within Feature 26	Unknown; no evidence it was part of any structure, may have been washed there by stream	Whole or cross-mendable artifacts in general vicinity, including whole plates and a windowpane
29	Disturbed area of fill that contains a live electric line. That portion not excavated	134N74E, 136N74E, 131N68E, 131N71E and 139N47E	Disturbance from installation of utility line in 1985	Mostly structural artifacts, dates range from recent to early gold rush
30	Distinct soil area - gray to black soil mixed with burned rock, ash	NE corner of 134N74E, extends to eastern 2/3 of 136N74E	Dump or burning area for Kirmse family	Large chunks of slag burned glass; dry cell battery; Chilkat blanket souvenir teacup
31	Distinct soil area and shape - gray to olive brown bedded fine sand alluvial layers; "humped" curve	NW corner of 134N74E; western 1/3 of 136N74E	Outside of bounded dump area	Almost totally culturally sterile
32	Structural wood	Divides Features 30 and 31	Part of fence or other wooden "box"	Some nails in wood; exploratory excavation recovered another piece of the Chilkat blanket teacup
33	Glass scatter in area of dark burned material	139N81E, north and east sections	Spillover from Feature 30 dump	Several mendable bottles, one whole bottle, several large bones
34	Milled wood extending from the SW corner of first shed to the door of the second shed	122N100E, 122N110E, 119N142E	Wooden walkway	Nails, cartridges, marbles, buttons, glass, brick
35	Distinct dark soil trough that runs N/S	MH shed, north side to interior in 134N109E, 140N110E	Remnant of high water action during seasonal flooding	Dense deposit of fragmented container glass. Chunks of coal also present

FEAT. NO.	DESCRIPTION	LOCATION	POSSIBLE FUNCTION	CONTENTS
36	Distinct circular depression	134N109E, center	Unknown	Bottle fragments, ceramics and nails
37	Structural wood, mottled soil below	140N103E, in possible vicinity of SE corner of dump	May be part of fallen dump site fence	Surrounded by burned materials and melted glass, milk glass lampshade fragments
38	Circular, ashy soil stain, about .02' thick	139N92E, Level 1, northern half of unit	Burned postmold or tree root?	None
39	Wood planks, ?1½" x 1½" running N-S in unit, about .17' thick	139N92E, Levels 2-4, SE corner of unit	Walkway	(Below feature) Variety of 1913-1930s household artifacts
40	Circular ashy soil discoloration; two wooden planks <½" thick each ~.6-.8' long found on either side	139N92E, visible in Level 2, but more distinct in Level 4	Postmold from north boundary fence; same as Features 25 and 37	Brick, nails, ceramic/glass, charcoal

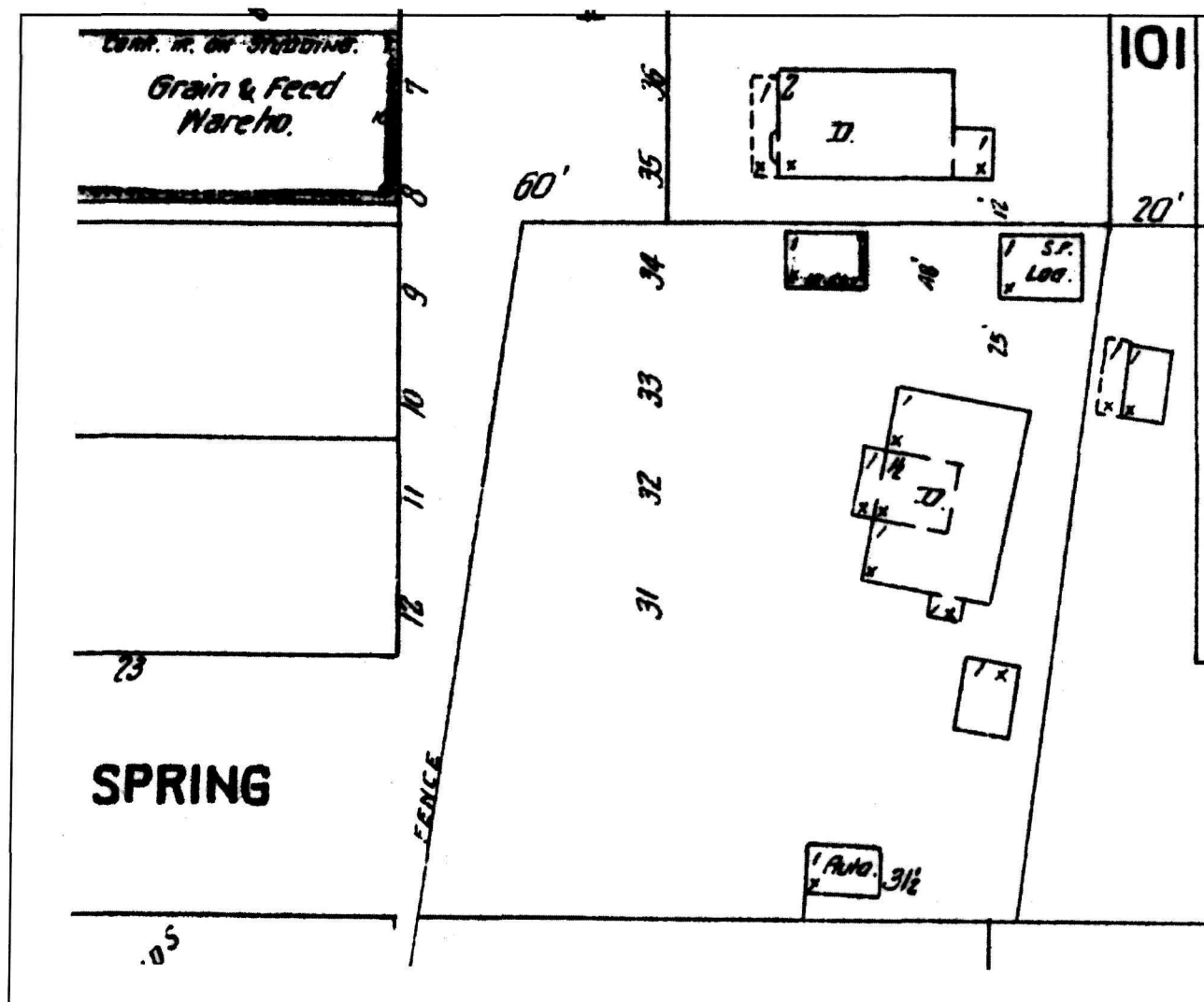


Figure 19. 1914 Sanborn map, showing enlarged view of Moore House lot.

### PERIPHERAL YARD AREA - EAST

Four units were excavated in the east yard area to learn more about the cultural landscape. The yard was fenced for much of the time the Moore family lived there, and was where they kept at least some of their animals. Units **122N100E** and **122N110E** were two 2' x 5' units placed adjacent to the south wall of Shed 1 where the sewer (122N100E) and water (122N110E) lines were to exit the building (figure 15). Unit 122N110E was also located adjacent to what was called the "chicken coop door" in the southeast wall of Shed 1. Feature 34, an old wooden boardwalk running from Shed 1 to Shed 2, and still partially visible, was found in units 122N100E, 122N110E, and 119N142E. Few artifacts were found

in the area, and establishing a good date range was impossible, either through soil stratigraphy or datable artifacts, so all were placed into one database (BDWLK) for analysis.

Stratigraphy in both units adjacent to the shed was straightforward, and the soil profiles for 122N100E can be seen in figure 22. Strata B, C, and D in figure 22 are all part of stratum 4. Bricks and brickbats were common in this area, but were not part of any intact structure, and seem to have been merely yard scatter or remodeling discards, possibly from chimneys on the house. Feature 34, the remnants of the wooden walkway, was visible in the initial soil strata in the southern half of both units (figure 22), and lensed out about .6' below the ground surface. Few artifacts were associated with Feature 34, and none



was found below the wood. Based on the condition of the wood, and its proximity to the ground surface, Feature 34 is associated with the Kirmse occupation of the site.

Two units on the far east side of the property, **119N142E** and **128N143E**, were excavated in a futile attempt to find the remains of the privy supposed to lie north of Shed 2. It was the frustration with this method of archeological testing that led us to attempt to locate Privy 2 through the soil chemistry study. We also wanted to understand a bit more about Shed 2's use through time. In the 1914 Sanborn map (figure 19), it is designated as an auto garage, but it does not even appear in the 1948 Sanborn map (figure 20). Since Shed 2 still exists, although it has been enlarged, it is unknown whether the 1948 Sanborn representatives merely forgot to put it on the map, or whether this was the year the shed was being remodeled or reconstructed.

Six feet long, two feet wide unit **119N142E** lies directly north of Shed 2 (figure 15). Feature 34, the wooden walkway, was found directly below the ground surface. The deepest part of the excavated area was only .8' below the ground surface. Artifacts were only recovered from stratum 1 (excavation Levels 1-2), and postdated the installation of the wooden walkway. It is unknown whether the nails, washers, and bolts found in this unit are construction debris from the remodeling of Shed 2, or the shed's use as automobile storage.

Unit **128N143E** is directly north of **119N142E** (figure 15). No features or privy remains were located, but there were several unique soil strata found here that were found nowhere else on the site. See the discussion on page 38 that relates to these soil strata and the possible significance of a pollen analysis from this excavation unit. An organic lens in the northern half of the unit was the main artifact-bearing soil layer. Metal fragments that could have been part of an automobile jack handle or a similar sort of tool were found here. This use of the area fits with Shed 2's designation in 1914 as an automobile garage, probably one of the first in Skagway.

## EXCAVATIONS AND EXPLORATIONS BENEATH THE MOORE HOUSE

Even though Ray DePuydt made some preliminary investigations below the Moore/Kirmse house, there was not enough documentation on file to be totally certain that resources would not be destroyed when the entire area was excavated during foundation construction. Because the area under the north side of the house was also the site of the 1887 cabin, that was where two small excavation units were placed. Since access to the area was most convenient through the historic fabric of the house floor, excavation was delayed until permission was received from the state historic preservation officer to cut a hole through the floor (Gurcke 1994).

Once below the house, it obviously was originally built directly on the ground, with less than a foot of crawl space between the floor and the soil. Probably during the 1940s, large, 3'-4' deep trenches had been cut through this soil. They roughly ran in a circle under the house. In the trench under the north side of the house, two 2' x 2' excavation units (**123N67E** and **124N70E**) were placed. Although there was some surface debris consisting of bricks, brickbats, and fragmented wood, few other artifacts were found. The coarse sand and rocks found at the surface of each unit were from stratum 7. Because there were no distinct soil strata, levels were dug in arbitrary half-foot increments, and ground water was encountered about 1.3'-1.4' below the unit surface.

After finding nothing below the surface of the trenches, we explored the "berms" of the trenches. We wanted to see whether this was the virgin soil the house was built upon, or whether it was simply soil thrown up from the excavation of the trenches. Two cuts were made in the adjacent "berm" south of the units (at approximate grid coordinates **117N70E** and **118N76E**), and soil profiles were recorded. If this were simply backfill from the trenches, there should be "**reversed stratigraphy**" - the glacial till should be on top of the berm and alluvial layers should be tumbled around a bit. Instead, the top of the soil under the entire house is very soft, fine sand (figure 23), a straightforward alluvial deposition sequence. Small root hairs in the alluvial soil were undisturbed, leading us to conclude that we were looking at the original soil upon which the house was built. How-

ever, there were no artifacts found in either profiled berm.

Still unknown was whether there were significant artifact concentrations from the 1887-1901 remodeling that would be disturbed by new construction. Archeologists crawled along all of the trenches to observe the adjacent "berm" profiles. Artifacts that were visible were clustered around exterior entrances, along with piles of leaves, and consisted of plastic wrappers, beer cans, and other recent vintage debris. One whole bottle of home heating oil treatment, with a screw lid, was found close to a lightbulb. Both looked like they may have come from the 1960s era. No artifacts lay on top of the berms,

such as might have fallen through the floors, presumably because the rough subflooring was immediately covered with tongue-and-groove flooring by the Moores, preventing anything from falling through the floor. It was decided that removal of the soil below the house would not damage any significant cultural resources.

One advantage gained from our below-house explorations was seeing the still visible evidence of the house's original construction. At the eastern edge of the 1897 frame 1<sup>st</sup>-story building, the vertical planking of the house's original exterior surface still extended below the floor. The original foundation beams were also there, very rough cut with knots on

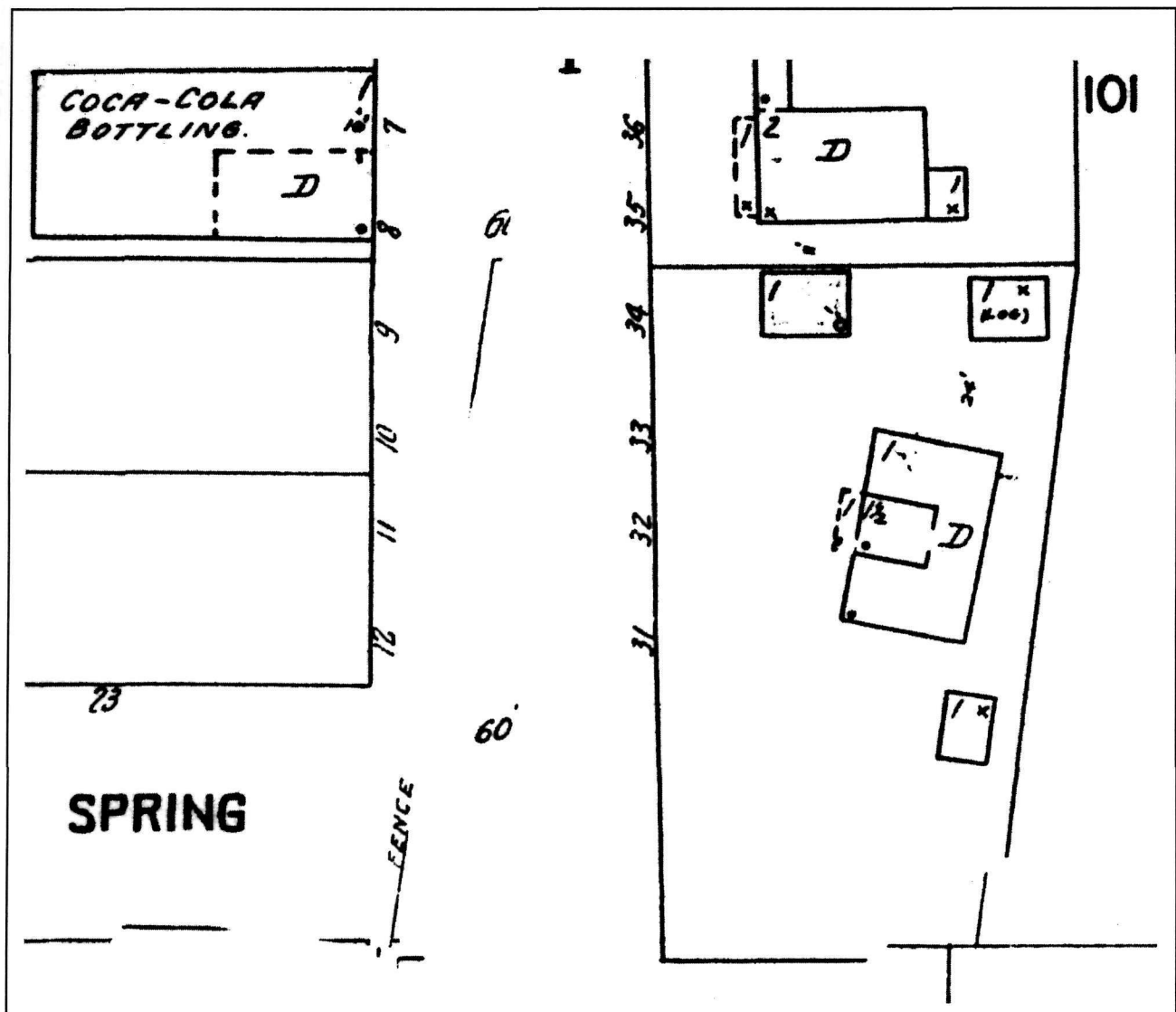


Figure 20. 1948 Sanborn map, showing enlarged view of Moore House lot.

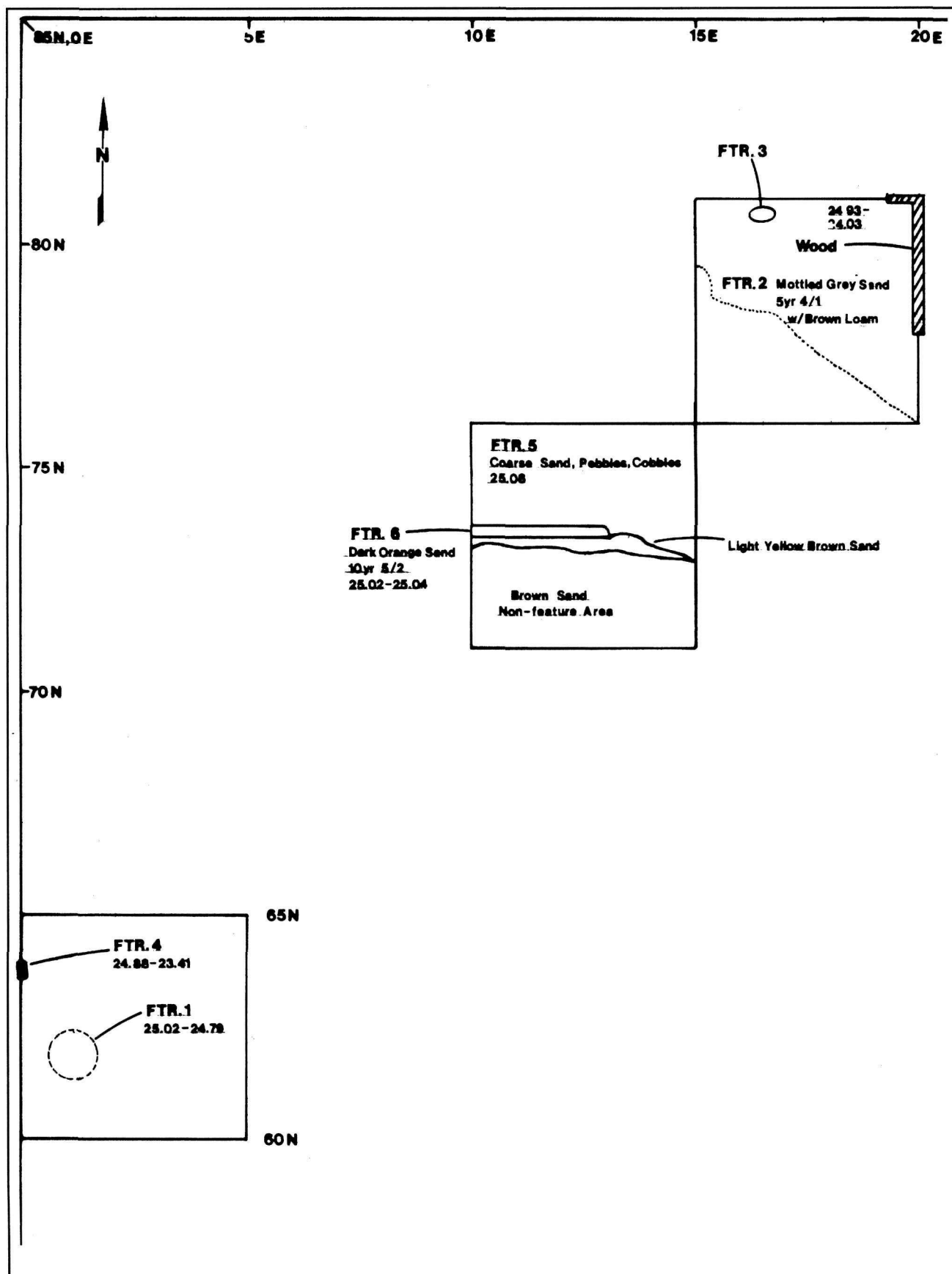


Figure 21. Plan view, southwest yard area, excavation units 65N0W, 76N10E, and 81N15E.



the surface. The bark had not been removed. During NPS restoration work, the beams were removed. The lead carpenter found that the five 5"-6" diameter supports were either local fir or spruce. Unmilled, they had been merely flattened with an ax or adze by Moore or his employees. When the Kirmse family stabilized the foundation in the 1940s, rather than remove the original house piers, they merely added white painted posts next to the originals. Although some of these foundation elements were preserved when the house was reconstructed, we also preserved these images through our photographic record of these explorations.

### PERIMETER UNITS

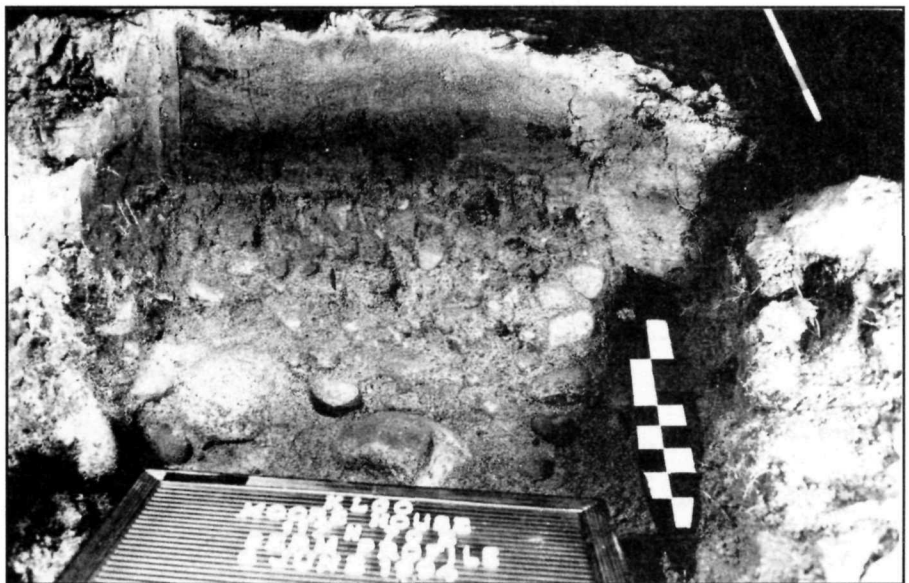
Twelve test units were dug adjacent to the house: two at the southeast corner (1988), eight on the south, east, north, and west sides (1993), and two more on the north side in 1994 (figure 15). From Blee's archeological work in the 1980s, it was known that the "footprint" of the original 1887 log cabin might still be visible on the north side of the house. Little was known about the rest of the area surrounding the house. The purpose of these excavation units was to evaluate the potential significance of any cultural resources since this area would be destroyed when the new house foundation was installed. All units placed adjacent to the house revealed the trench dug around the house in the 1940s when its foundation was initially stabilized (Feature numbers II, 14, 15, 16, and 21). Units on the south, east, and north sides also revealed considerable disturbance from utility

line work. Two water pipelines inside wood cribbing were found, one on the southeast side of the house and one north of the house. Placing water lines deep in the ground, and placing wood around the lines, was the most common method used during the first half of the twentieth century to prevent them from freezing in Skagway's cold winters. Units excavated on the east side of the house also revealed several other builders' trenches. Although some trenches are connected with the utility lines around the house, others may be from the original removal of the log cabin and attached shed, and the construction of the 1900-1901 additions to the house. On the north side of the house, mixed in with various disturbances, were remnants of the original log cabin on the site, and a few associated artifacts.

### Southeast Corner

In 1988, archeologists were assigned from the National Park Service regional office in Anchorage to begin archeological clearance for the eventual renovation of the Moore House. Led by Ray DePuydt, they surveyed the site, drew a contour map, and performed background research. Their notes say they saw, in an 1898 historic photo, an area of lighter-colored soil by the southwest house corner that might have been a trench (DePuydt 1988), and so they placed their test unit there. The soil in the unit was very disturbed, with many different ground-disturbing episodes through the years. Excavation notes and a rough draft of a fieldwork synopsis were relied upon for this summary. The archeologists also

**Figure 23.** *Photo of soil below the Moore/Kirmse house.*





prepared profile drawings that named many more stratigraphic layers than were used in the 1990s testing. Figure 24 shows profiles of the west and east walls of Units 1 and 2, with their stratigraphic designations preserved. Table 3 shows the equivalent strata designations used in the 1990s work.

Feature I was a trench in **Unit 2 (89N81E)**, encountered a foot below the ground surface. It ran diagonally across the unit and dominated the east wall profile (figure 24, “17 Trench”). All soil in the trench was designated as “fill.” At the base of Feature I, about three feet below the ground surface, was a solid wooden beam that ran from 85N on the west to 89N on the east side of the unit (figure 25)<sup>5</sup>. It continued into the southeast corner of Unit 1 (94N81E). Because of the depth of the undisturbed layers of soil on top of Feature I (strata 1-5), it is believed to predate 1940. Its purpose was not determined during the 1988 excavations. However, during construction monitoring in 1995, a long section of 1" water pipe, underneath a wooden beam, was found in this area. It is believed to have been the original water line put into this house, possibly when the Moore family did their home remodeling ca. 1900-1901.

Three different builders' trenches were found in **Unit 1 (94N81E)**, next to the south wall of the house, covered by stratum 1. Builder's Trench 1 (BT1) was

the most recent, and probably postdated the 1940s foundation work (figure 24) because it is narrower and shallower than the foundation trench found in other excavation units. BT3 is probably the 1940s foundation work (stratum 12), and it was designated Feature II. At the base of the feature, excavators found decomposed nails and windowpanes that “differentiated this layer from the yellowish sand and sterile layers 13-14 abutting to the south” (DePuydt 1988). Pristine areas were limited to the central portion of the west half of the trench (strata 2-9). Artifacts in this unit from Feature II and soil strata 1-4 were placed into the database for the 1940s builder's trench based on emerald green paint splashed onto artifacts from those strata.

### South Side

Two units were excavated on the south side, **92N/95N45E**, and **90N58E**. Unit 92N/95N45E was three feet wide and six feet long, located two feet east of the southwest corner of the Moore House (figure 15). In figure 26, these units are the farthest from the camera. The 1940s builder's trench (Feature 14) dominated the northern half of the unit, and roots

<sup>5</sup> In the photo, the wooden beam and trench are named “Feature 2”; however, in later notes it was designated “Feature I.”

**Table 3 - Stratigraphy of 1988 Test Units**

1988 Strat No.	Soil Description	1998 Strat No.
1	Sod overburden, very dark brown to dark grayish brown, post-1940	1
2-7	Silt and sand layers, fine sand, colors range from yellow brown to dark grayish brown. Strata 2-5, post-1917; strata 6-7, possibly pre-1917	2; 4
8-11	Clay/silt/sand mixture with sand becoming increasingly coarse as depth increases. Here, artifacts in soil may be result of intrusive builder's trenches in area. (Stratum 5, the thin layer of very fine, almost white sand, may have been present at the top of layer 10 in Unit 1 [94N81E].)	6
12-14	Coarse brown sand mixed with rocks and cobbles	7

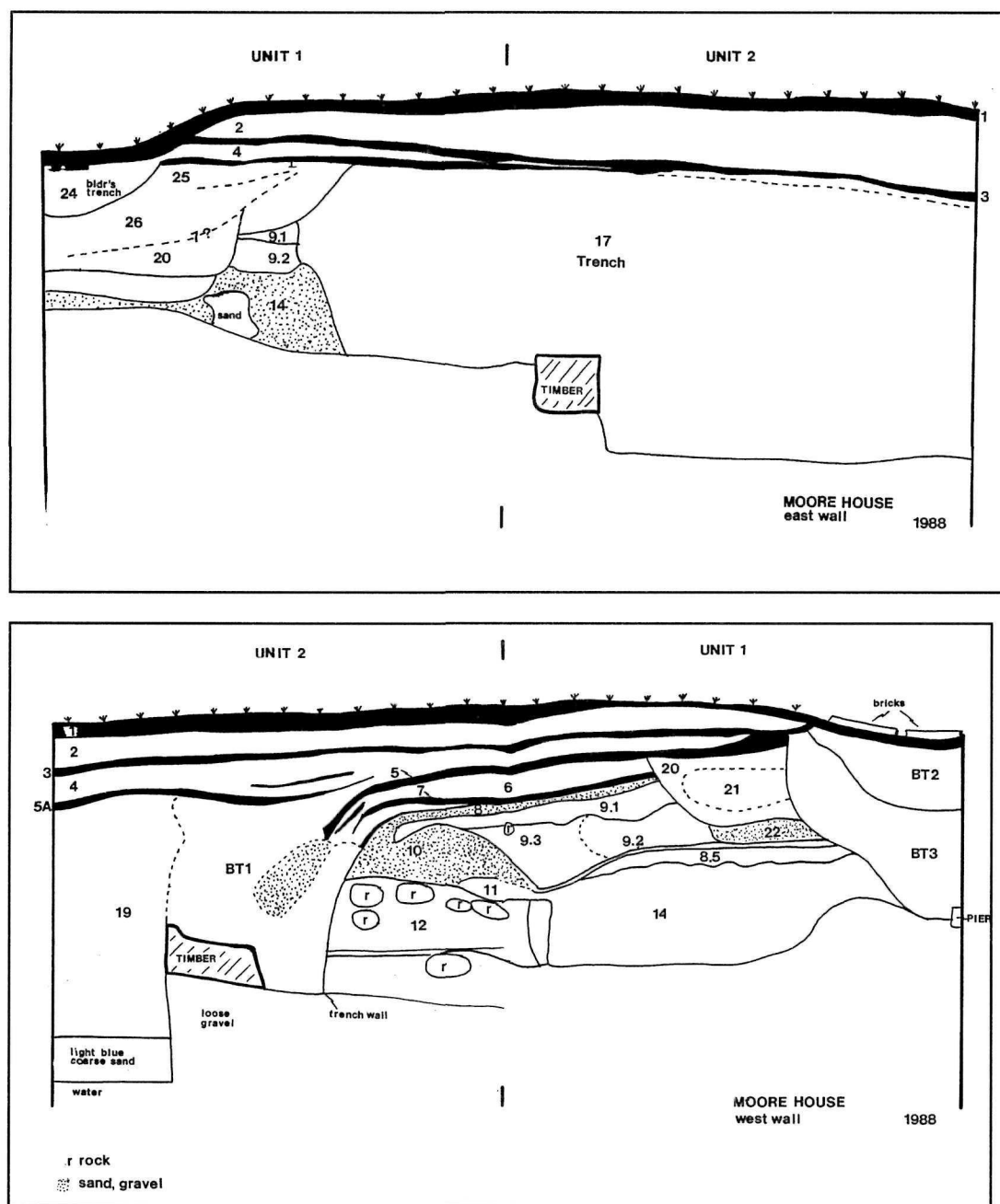
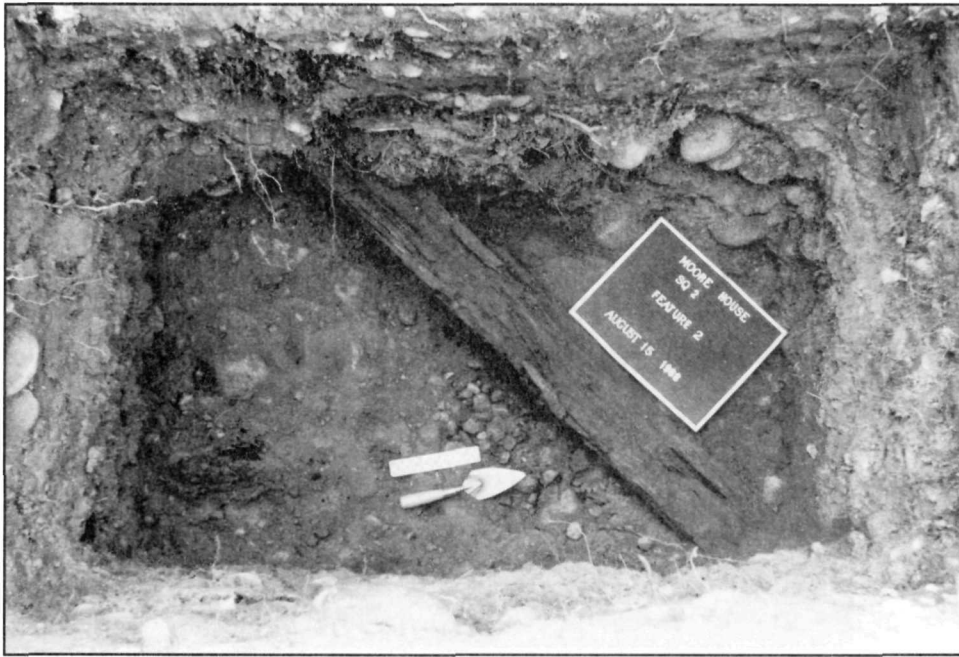


Figure 24. Soil profile drawing, east and west walls, 1988 excavation unit.

from a large tree disturbed the soil in the southwest quadrant. No intact structural remains were found, and artifacts recovered from 92N45E were gradually discarded over the lifespan of the house. Artifacts from stratum 1 of both units were placed in the post-1940 database, and artifacts from strata 2-3 of 92N45E were placed in the pre-1940 database. At the base of Feature 14, next to the house, was a thick layer of red asphalt siding. Artifact deposition outside the feature was almost the same as that in the

builder's trench: red and green asphalt siding fragments, wire nails, window glass fragments, and pieces of brick. Except in stratum 1, all artifacts from 95N45E were placed in the 1940s builder's trench database.

Unit **90N58E** was a 5' x 5' unit placed directly south of the front porch of the house (figure 26, unit closest to the camera). Figure 27 is the soil profile for the east wall. Stratum 1 was mixed with sod, roots, and



**Figure 25.**

*Photo of 1988 excavation unit, wooden cribbing at base of unit.*

iris bulbs from a recent flower garden that ran the 17' length of the front porch. Similar to Feature 14, there is a large asphalt deposit almost at the base of the 1940s builder's trench (Feature 15/stratum 12). This must mean that the asphalt siding was placed onto the house when the Kirmse family did the work on their foundation. Stratum 1 postdates stratum 12, the builder's trench, and those artifacts were added to the post-1940 database. Because artifacts from the 1940s builder's trench were not separated from those found in the rest of the unit, artifacts from all strata, except stratum 1, were placed into the 1940s builder's trench database for analysis.

The most interesting feature (but not assigned a feature number) was a single row of large cobbles in the gray-black stringer, about half a foot below ground surface (figure 28). They were deliberately placed and extended from the southeast corner until interrupted by stratum 12. It is very probable that this feature can be traced back to the cobble tree borders seen in figure 9 taken in 1904. This was at the height of the Moore family's remodeling and landscaping efforts to their homestead. It provides a visual confirmation of the location of some of the Moore family's landscaping.

## West Side

Units **123N37E** and **123N40E** were the only units dug on the west side of the house. They formed a three-foot-wide by six-foot-long test trench, near the northwest corner of the Moore House (figure 15). Unit 123N40E was dominated by stratum 12 (Feature 21), the 1940s builder's trench. At this point, it was approximately 2'-3' wide and about 1' deep. Except for stratum 1 that lay over the top of stratum 12, the artifacts were all placed in the 1940s trench database. Farther away from the house, a layer of dark gray sandy fill with many pebbles and cobbles was found directly below a very thin stratum 1. Conversations with NPS staff confirmed that this was intrusive fill, brought here during the 1980s from either the historic railroad depot building or from work on the Moore Cabin. Excavation Level 3 contained stratum 3, the gold rush original ground surface, at least half a foot below the ground surface. Found below stratum 3, in stratum 4, was a black rubber button decorated with a raised-weave pattern. The back of the button had an embossed mark of "D H Co" with an incised date of 1875. A few other artifacts were also recovered from this area, and all were placed in the database connected to the use of the property by the Moore family ("MOORE").

**Figure 26.**

*Photo of 1993 excavations on south side of Moore/Kirmse house.*



### East Side

Units **125N86E** and **125N91E** were adjacent to the northeast side of the house (figure 15). This was the area where an 1897-98 lean-to addition to the log cabin is clearly seen in early photos (figures 3-5). Beyond possible remains from this building, excavators anticipated possibly seeing remains from the 1900 construction activities, when the northeast bedroom and second-story addition were built. It was found that this area had been very disturbed over the years, and various builders' trenches were visible. Many artifacts were recovered from this small area, most within five feet of the house. No features could definitively be connected with the Moore family, although many artifacts do date from that time period. Figure 28 is the combined soil profile for the north and south walls of both units. A bird's eye view of these units can be seen in figure 29.

Features 7 and 9 seem to be remnants of the fences that once enclosed the east yard. The first was a split rail fence erected in July 1897 (Blee 1988:13, Fig. 3). A picket fence enclosed the area from 1898 until at least 1910 (figures 4-10). Feature 7 was a rough-hewn circular piece of wood, lying flat on the ground next to the east wall of the unit. It measured roughly .25' to .30' in diameter, and 4.7' long. It could have been one of the split rails or from the backing for the picket fence. A 6" piece of trim was also found with the fence, but may be from debris associated

with the 1900 house remodeling projects. Feature 9, only visible in figure 29, is believed to have been a posthole stain. It was a round/oval area, .6' in diameter, filled with grayish brown coarse sand.

In 125N86E, the 1940s builder's trench (stratum 12) was visible and was excavated as Level 3. In figure 28, it is clearly defined beneath the soil of the upper levels and is no wider than two feet. Feature 8, a square to rectangular-shaped area of mottled dark brown silt and gray coarse sand, was the natural soil of stratum 2. Builder's Trench 2 is only visible in the soil profile of the north wall. Its fill was a coarse brown sand with cobbles, similar to stratum 12. Between the 1940s trench and Builder's Trench 2 are intact alluvial soil layers (stratum 4) designated as Feature 10, which meandered in a zigzag from the north to the south walls of Feature 8 (stratum 2). Excavation stopped at the base of Level 4, approximately 1.8' below ground surface.

Unit **125N91E** was composed of natural soil strata 2, 4, and 6 disturbed by a modern sewer line (Feature 12) running diagonally through the center of the unit. A section underneath the pipe was excavated, and it quickly devolved into the sterile alluvial soils found in the adjoining portions of the unit. It is possible that two trenches were dug: one for the original installation of the sewer pipe (possibly in 1962, according to Jack Kirmse, who submitted answers to Blee's written questions), and then another, later

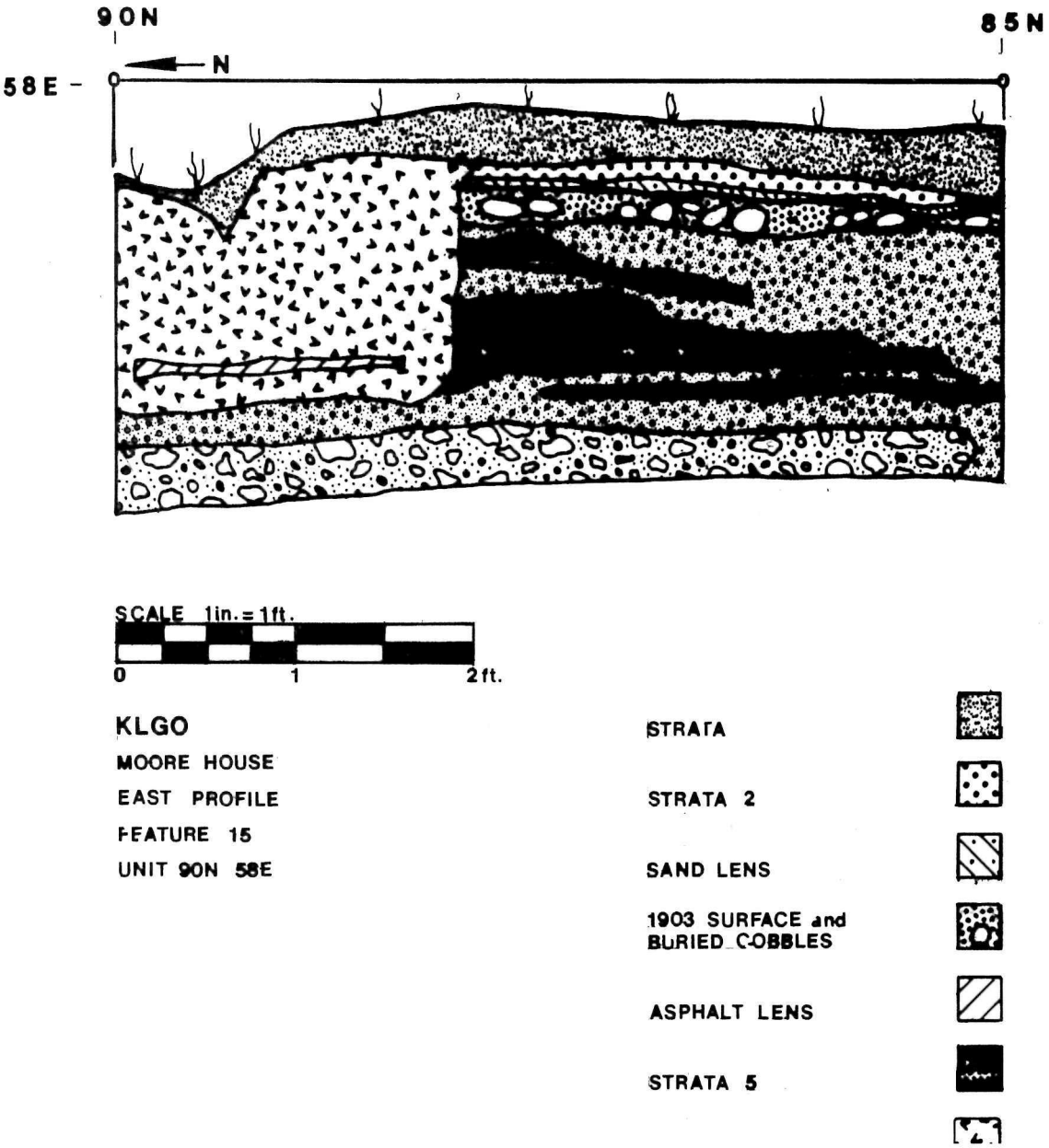


Figure 27. Soil profile drawing, east wall, unit 90N58E.



trench, for insertion of protective modern Styrofoam insulation. Feature 13 was another fence rail, at the same elevation and parallel to Feature 7, but five feet farther east. It consisted of the wooden rail and two postholes with *in situ*, but decomposed, wood. Artifacts recovered from Feature 13, including a small ceramic teacup, were really from the stain surrounding the wood.

### North Side

Unit **131N74E** was a 5' x 5' test unit placed along the northeast wall of the Moore House (figure 15). Crew members hoped to discover remnants of the log cabin's drainage trench encountered by Blee during her Operation 17 excavations (Blee 1988:53). Later, it was discovered that Blee had the cabin incorrectly placed, and this unit would have been on the northeast corner of the cabin, below the ca. 1898-1900 lean-to addition on the cabin's east side. The stratigraphy was very complex due to many construction activities that took place in this area. In undisturbed areas, artifacts were recovered that undoubtedly date to the early use of the house and cabin by the Moore family. Eight features were identified: 16, 17, 18, 18N, 18S, 19, 20, and 22. The upper soil layers were disturbed: the north side by root activity from a nearby tree, and the south side by builders' trenches.

Here, the 1940s builder's trench that encircled the house was later disturbed when a trench was dug to place a 6" ceramic sewer pipe during the 1960s (Blee 1988:59). It is undoubtedly connected with Feature 12, the pipe found in unit 125N91E (figure 29). It was further disturbed when Styrofoam insulation was installed on top of the pipe. In figure 30, the 6" sewer pipe and covering insulation is visible on the right-hand side of the photo. During excavation, Feature 16 was only designated in the immediate area of the sewer pipe, so the artifacts in the larger trench were mixed in with excavation Levels 3-6.

Builder's Trench 2 was the ground disturbance caused during the installation of a 2" metal water pipe. It contained Feature 19 (a culturally sterile, circular area of ground disturbance remaining from the installation of a pipe) and Feature 20 (the 2" pipe and its wood covering). In figure 30, Feature 19 is the light-colored soil on the left side, and Feature 20

is the pipe and wood lying at the base of the east wall. The angle of the pipe and the way the pipe is fitted show that this pipe was a water drain, possibly from the kitchen, probably draining into the relic streambed north of the house. Although it obviously predates 1940, it had few associated artifacts, and the pipe had no identifying marks. It is believed this drainage pipe was installed sometime after the Moore family installed their kitchen in 1898 and may be connected to their home remodeling projects of 1900-1901. It may have only been used until 1914-1917. Directly north of this unit, a walled dump (Feature 32) was found (figure 29), and a broken end of a pipe believed to be part of this same drainage pipe was found at its base. A fuller discussion of the ending date for Feature 20 can be found on page 59. Stratum 11 (Feature 17/Builder's Trench 3), in the northeast corner of this unit, dates to the 1985 utility line work (Blee 1988:287). It disappeared about a foot and a half from the northeast corner.

Given the extent of past ground-disturbing activities, it is amazing that there were any undisturbed areas found in this unit. Yet an intact deposit was found around Feature 18, in the northwest quadrant of the excavation. Feature 18 was a half-foot-wide by four-foot-long wooden board with a single break. This board was approximately .8' south of the northwest corner of the unit and extended east from the west wall. Based on current research, this should have been near the rear wall of the original log cabin (figure 29). The soil found around Feature 18 is stratum 4 (mottled fine alluvial sand), typical of the soil described by Blee in the drainage trench located along the original north wall of the cabin (Blee 1988:53).

Areas immediately north and south of this feature were designated 18N and 18S. The few artifacts recovered from Feature 18 included nail, glass fragments, and a small red asphalt shingle fragment from the 1940s construction. Feature 18N contained artifacts that showed the intrusion from the 1985 utility line work, and tree root disturbance. Feature 18S had a cluster of artifacts that was later designated Feature 22 (figure 29). These included one complete shoe sole and part of another, a nearly intact tin can, a wire bucket or pail handle, and milled wood fragments (figure 31). These artifacts are believed to have been on the floor of the lean-to addition on the east side of the log cabin, and are

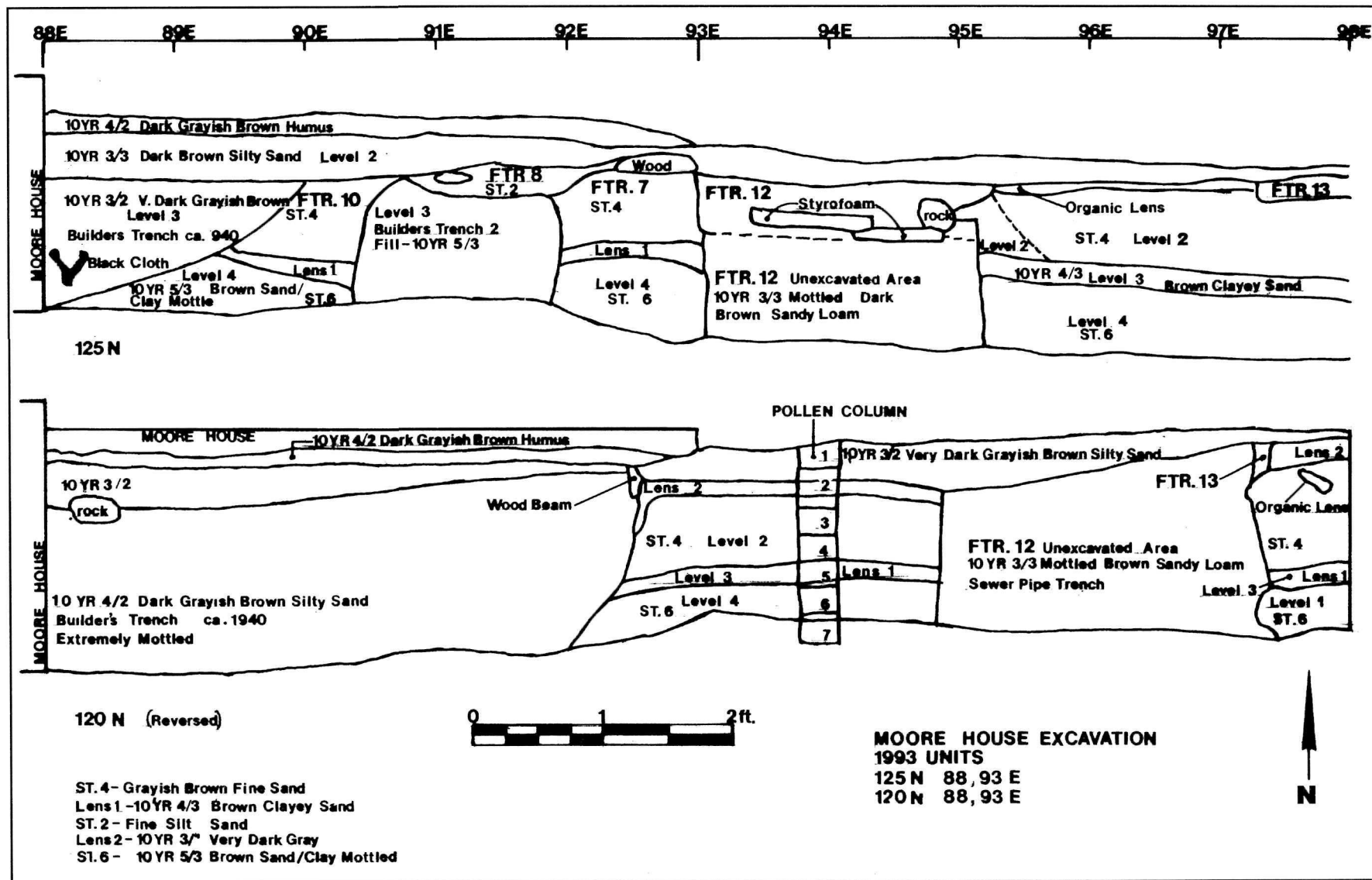
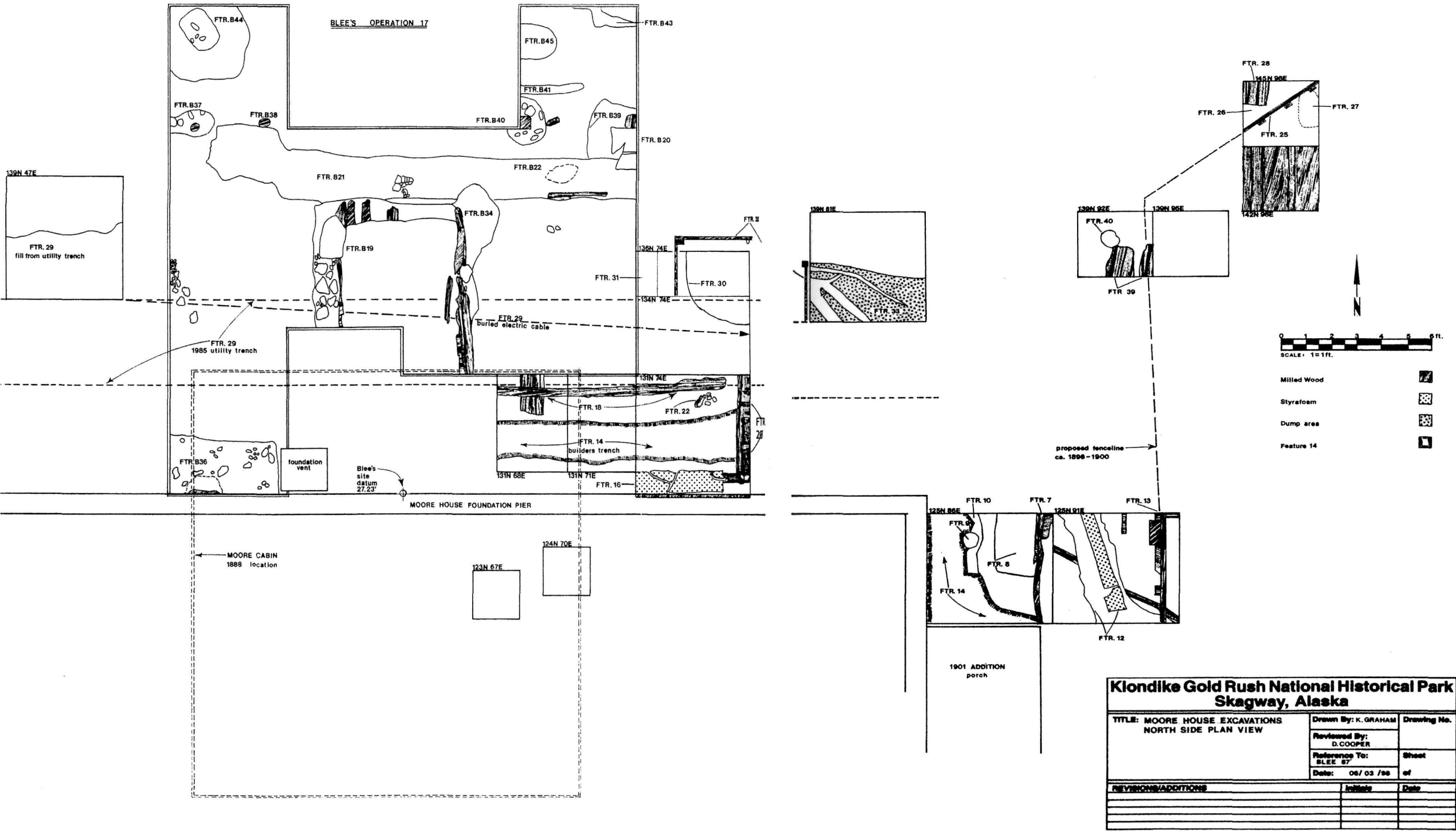


Figure 28. Soil profile drawings, north and south walls, 125 North units.



believed to date from the 1897-1900 use of the area. These artifacts were added to the Moore database for analysis.

Directly west of unit 131N74E, units **131N68E** to **131N71E** also contained the log remnants of the site's original buildings (figure 29). Stratum 12 was again encountered in these units. In these units, just like in 131N74E, there was later disturbance to the 1940s trench for the sewer line. Once stratum 12 was identified, no further excavations took place in that area. Feature 18 was encountered about a half foot below the ground surface, in the same location as in 131N74E. In 131N68E, there was a flat piece of wood, perpendicular to Feature 18, that lay over the wood of Feature 18. It may not be a part of the log cabin. Because of the disturbance both north and south of Feature 18, no artifacts other than the log itself could be linked to the original cabin usage. Artifacts ranged from the gold rush era to post-World War II synthetic, petroleum-based plastics. The artifacts were a mixture of structural and household goods — nails, window glass, asphalt roof tile fragments, bottle glass, a painted metal whistle, a .22 cartridge, ceramic fragments, and spalls. Feature 18 was dug for only one level, and the base was about .6' below the ground surface.

## North of the House

Four test units (139N47E, 134N74E, 136N74E and 139N81E) were dug north of the Moore House, outside the Operation 17 area tested by Blee (figure 29). Combined soil profiles for these units are displayed in figure 32. The area was excavated to detect the extent of the disturbance that took place when the 1985 utility line corridor (stratum 11/ Feature 29) was dug and to learn if any other remnants of the 1887 cabin remained. Unit 139N47E was dominated by stratum 11, and no other features or significant remains were identified. Unit 134N74E had some puzzling soil deposition and artifacts. Extended north (136N74E), and east (139N81E), a previously unobserved wooden structure, enclosing a previously unsuspected dump site, containing many burned artifacts and alternating ash layers, was found. This dump site was connected to the early years of the Kirmse family on the property.

## Kirmse Dump #2

Unit 134N74E was excavated to determine how far north the disturbance from the 1985 utility line extended. While the unit was dominated by that disturbance, at the northern edge intact soil layers emerged that hinted at a possible dump site. The differing soil layers are shown at 74E and 79E in figure 32. Soil disturbance extended through Level 5, where a 1980 penny was found.

In unit 136N74E, two distinct soil areas emerged, divided between the eastern and western halves of the unit. **Feature 30** was located in the eastern half of the unit and was later designated stratum 13: two alternating layers of soil, a dark gray/black sandy soil mixed with ash, burned rocks, and molten glass; and a gray/brown fine, loamy sand mixed with ash and more burned rock. By the base of the excavation (Level 6), Feature 30 extended almost all the way across the unit, about 3.2' below the ground surface (figure 33). Not only household refuse, but some odd artifacts, such as a dry cell battery, were found in Feature 30.

In the west side, a very fine sandy soil (pre-1940 stratum 4) was marked **Feature 31** (figure 32, 74E). The most noticeable aspect of Feature 31 was its curve, which made it look like a berm piled up against something (figure 33). Part of it was seen by Paul Gleeson when he monitored the 1985 construction, and can be seen in his profile drawing of that trench (Blee 1988:287). It could not be determined why this feature was so distinct from the dump to the east, but became apparent midway through Level 2 of Feature 31 (about 2' below ground surface) when structural wood was exposed, which ran north/south and divided Features 30 and 31 (figure 29). The soil "rounding" must be due to deposition from the placement of this wall.

The wood was designated **Feature 32** and led to a hollow space in the north wall that exposed a very deteriorated and soft wooden pier or fence post (figures 29 and 33). It definitely cornered at the wooden post, and from there a 2" x 4" board ran east. Some large nails remained in the wood. When the north wall of the unit was removed, all associated artifacts were provenienced with Feature 32. The structural wood of Feature 32 continued to the base of the unit, about 3.1' below ground surface.



**Figure 30.** Photo of east wall, 131N74E unit.



**Figure 31.** Photo of Feature 22, artifact cluster in unit 131N74E.



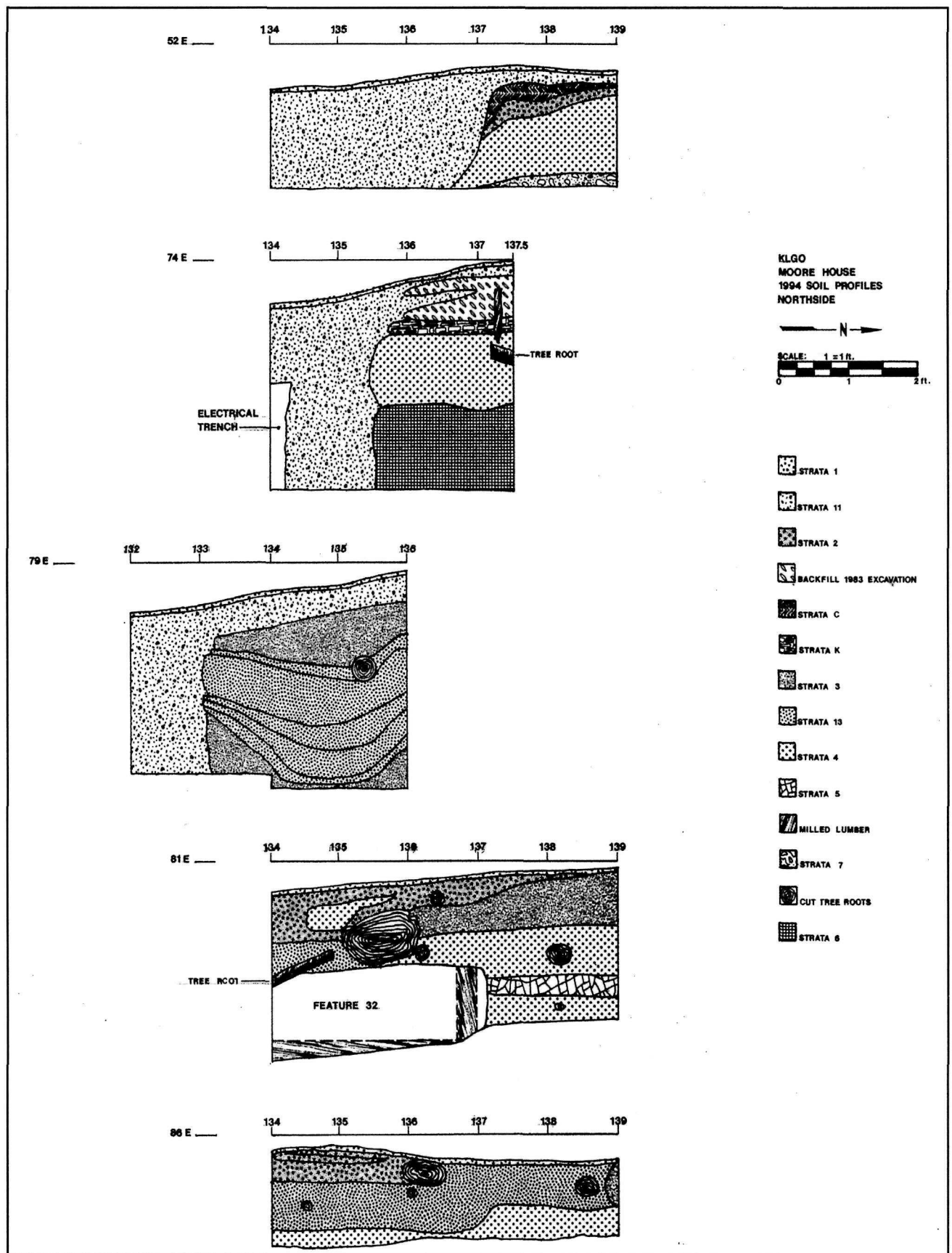


Figure 32. Soil profile drawing, combined excavation areas north of house.

Unit 139N81E was opened to explore the limits and purpose of Feature 30 further. Soil profiles can be seen in figure 32, 81E and 86E. Spared any impact from the 1985 utility line, roots from a large, 30-year-old cottonwood tree in the southern half of the unit created their own disturbance (figure 29). Feature 33 contained a sudden explosion of artifacts: various styles of ceramic fragments, all badly spalled; a whole amber vial and a colorless pipette; a metal wine/champagne bottle seal; a white porcelain teardrop bead, and a small blue seed bead; a .38-.55 caliber center-fire cartridge; leather fragments; and some structural artifacts — nails, copper wire, wood fragments, and a large piece of asbestos tile. Its dark ash-filled layers alternated with lighter colored sand. Most artifacts were found in the ash layers of the feature. Directly north of Feature 33 was a dense scatter of bottle glass, at least five vessels. Because it is so much shallower than that seen in 136N74E, it is believed to only be the spillover of the main dump, which is almost three feet deep. In the southwest corner of the unit was a hollow pocket that contained the eastern edge of Feature 32, the wood enclosure (figure 32, 81E). This means that Feature 32 was approximately five feet wide, but its length could not be calculated because of the disturbance from the 1985 utility line trench.

## MOORE/KIRMSE HOUSEHOLD DUMP

Late in the field season of 1993, the area north of Shed 1 was excavated (figure 34). This was the area where Mill Creek had originally run by the property. The stream can be clearly seen in figure 5 and was probably used by the Moore family to obtain water for their animals, and perhaps themselves. Catherine Blee, in her 1983 excavations at the Moore House, also encountered a corner of the stream bed (Blee 1988:50-53). Archeologists knew that the gradual slope north of Shed 1 was part of this former streambed, and that it might be a culturally sensitive area because much dumping was done in the streambed, north of the Moore property (DePuydt et al. 1997; Rhodes 1988). When the yard was fenced, an odd jog had the fenceline jutting out into the stream itself. The exact shape of this “jog” is in question. In a drawing for Moore’s 1904 survey, it was pointed. This shape can also be seen in figure 5 of Blee’s report (two 1898 photos; Blee 1988:15). Later photographs, however, show it as more three-sided (figures 5 [1898-1899], and 7 [1901-1902]). By 1914, deed transactions showed that the fence ran in a straight line north of the shed. One reason we excavated north of the shed was to see if there were any intact remains from this fenceline “jog,” and to



**Figure 33.** Photo of Features 30, 31, and 32 in unit 136N74E.

try to learn its purpose. Looking at the historic photographs, the stream seems to have been filled by 1900.

Several units were placed (figures 29 and 35), all located north of Shed 1. The first two (142N98E and 145N98E) found the Moores' dump site and the ca. 1898-1900 fenceline. Units to the west (139N92E and 139N95E) and east (140N103E and 140N110E) were later excavated to determine the limits of the dump and also to find where the original fence came out of its "jog" and reconnected with the fence along the north property boundary. Some features found during this work related to the continuing use as a special area for discarding household trash, possibly through the 1930s. Modifications made by the Moore and later Kirmse families included rock and wood walkways to the dump, and at least one wood-lined floor for the disposal site. There was a very dense artifact deposit. Generally, household debris predominated, but wood remnants and discarded nails from the construction work done by the Moore family were also present in the dump's lowest levels. Based on soil stratification and datable artifacts, dividing the early discards of the Moore family from the later ones of the Kirmse family was possible. All the area north of Shed 1 was disturbed when the new foundation was built. Excavation was the best way to

mitigate the negative effects from the construction activities that took place.

### Units 142N98E and 145N98E

These two units (a 6' x 3' test trench, divided into two 3' x 3' excavation units) were placed several feet north, and about a foot east of the northwest corner of Shed 1 (figure 34). The unit closest to Shed 1, **142N98E**, was excavated first. Although stratum 1 contained the usual roots and recent artifacts, the high density of artifacts was unexpected. Many artifacts showed evidence of burning. Eventually nine soil strata were identified in the dump site. Levels coincided with stratigraphic layers whenever possible. Figure 36 shows the combined soil profile drawings of the east and west walls from both units. Along the southern wall was an almost continuous row of crushed brick bats that did not extend very far into the excavation unit.

Stratum 15 (Feature 23), a loamy, friable soil, graded in color from olive brown (2.5Y 4/3) to a dark reddish brown (5 YR 3/2), and covered the entire 3' x 3' area of **142N98E**. There were whole or large artifact fragments in a matrix of thousands of pieces of tin cans in varying sizes (figure 37). Although a sample of the soil matrix was retained for research

purposes, only diagnostic can fragments (such as ends or seams) were recovered. Many artifacts showed evidence of burning, but little ash was noted. There were many coal and clinker fragments. At the base of this layer, at .7'-.8' below ground surface, was a continuous layer of horizontal wood planking running in an east-west direction. When Blee was excavating Operation 17, north of the Moore House, she found remnants of a fence placed sometime after 1914 (Blee 1988:56). Its



**Figure 34.** Photo of dump site, north of shed.

location closely matches the northern limits of Feature 23. Based on that information, and dates obtained from artifacts found in Feature 23, it is associated with the use of the property by the Kirmse family.

Below the wood planking of Feature 23, the soil on the east and west sides varied greatly. Two-tenths of a foot below Feature 23 was another layer of wood in the southwest corner, running north-south (along the west unit wall). It did not extend very far into the unit. It may have been an earlier platform for the dump area. On the west wall profile (figure 36), this difference is labeled as **strata 15-1** and **15-2**. Stratum 15-1 was dominated by tin can fragments, while 15-2 contained more sand and grades from a reddish brown to an olive brown. Below the second wood plank was **stratum 15-3**, a grayish brown, sandy loam that continued to contain coal and clinkers, but also contained thousands of eggshell fragments. Artifacts from strata 15-2 and 15-3 were recovered together. Located in the southwestern corner of the unit, in stratum 15-3, was an unnumbered feature of large rocks whose function is unknown (figure 36, "R"). Underneath the rocks another piece of milled wood jutted out from the south wall. This wood was not connected to any feature, had no apparent purpose, and is believed to be there because it was discarded. Datable artifacts from Level 4 ranged from after the 1900 remodeling until circa World War I. This made excavation Level 4 a transition, or interface, between the Moore and Kirmse occupations (strata 15 and 16). For analysis, artifacts recovered from Level 4 were placed with the Kirmse dump artifacts.

Feature 24 is a dump area associated with the time the Moore family lived on the site and is part of stratum 16. Because of its location deeper in the ground than Feature 23, it predated Feature 23. The feature was identified at the base of excavation Level 5 (about 1.1' below the original ground surface). The field notes read: "At the base of this level [5] a sharp division is visible from the continuing trash burned/coal deposit of the north to the fairly sterile, sandy south" (Cooper 1993b, field notes for Level 5). Artifacts continued to be found where the rock feature intruded into the unit. Artifacts from excavation Levels 5-6 were added to those from Feature 24 because they were found at the same elevation.

Stratum 16 was the dark trash/coal deposit found in the northern foot of the unit, divided into strata 16-1 and 16-2. Stratum 16-1 was a very dark grayish brown (10YR 3/2) matrix of coal, clinkers, ash and burned rock that, in the succeeding level, graded to a dark reddish gray (5YR 4/2) because of the increase in the quantity of burned ferrous material. At the lowest excavated level of Feature 24 (a little over two feet below ground surface) stratum 16-2 was identified, a yellowish brown (10YR 5/4) silt/clay/loam soil.

In unit **145N98E**, artifacts typical of the mixed deposit found in 142N98E were encountered in the first level. However, the unit has a different and less complex stratigraphy, is positioned much more directly in the old streambed, and is part of its sloping shore. The northern end of this unit began a foot lower in elevation than the southern wall of unit 142N98E, only six feet to the south (visible in the soil profiles of figure 36). The wood planking that extended over all of 142N98E was not present in this unit.

Stratum 1 (excavation Levels 1-2) was much thicker in this unit and contained heavy deposits of decomposed organic matter and plant and tree roots. Excavation Level 3, a dark brown loam, contained coal and burned rock that correlated with stratum 16-1 of Feature 24 of 142N98E. By excavation Level 4 there were definite differences in the soil between the north and south halves of the unit. Soil in the southern half of the unit mimicked that of 142N98E — it graded to a reddish-brown, the same as stratum 16-1 of Feature 24. In the northern half, the loamy soil contained large amounts of charcoal that turned the soil a very dark grayish brown.

At the base of Level 4, the reason for the soil differences became clear when Features 25 and 26 were identified. Feature 25 was a standing fence and fenceposts, badly decomposed (figure 38). Figure 29, the plan view drawing, shows how Feature 25 divides 145N98E. It is believed this is the fence, seen in historic photos, that jutted into the stream for an unknown purpose. The top of the highest part of the fencepost was about a foot below ground surface, which makes it about two feet below the ground level next to the shed. A one-inch thick fence rail was about a foot and a half below the ground surface. The area north of the fence was named Feature 26 since

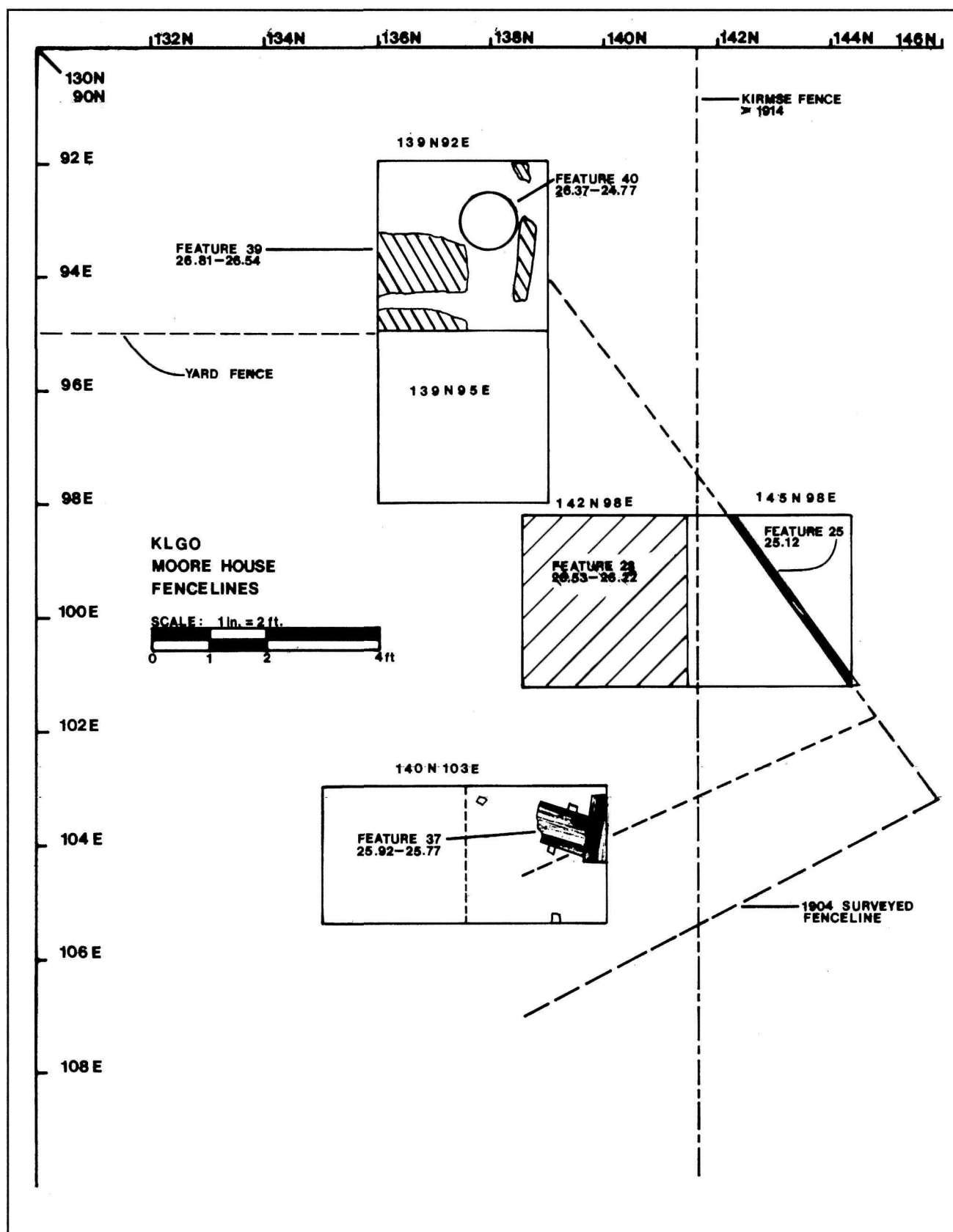


Figure 35. Plan view drawing, dump site units and relic fence line.



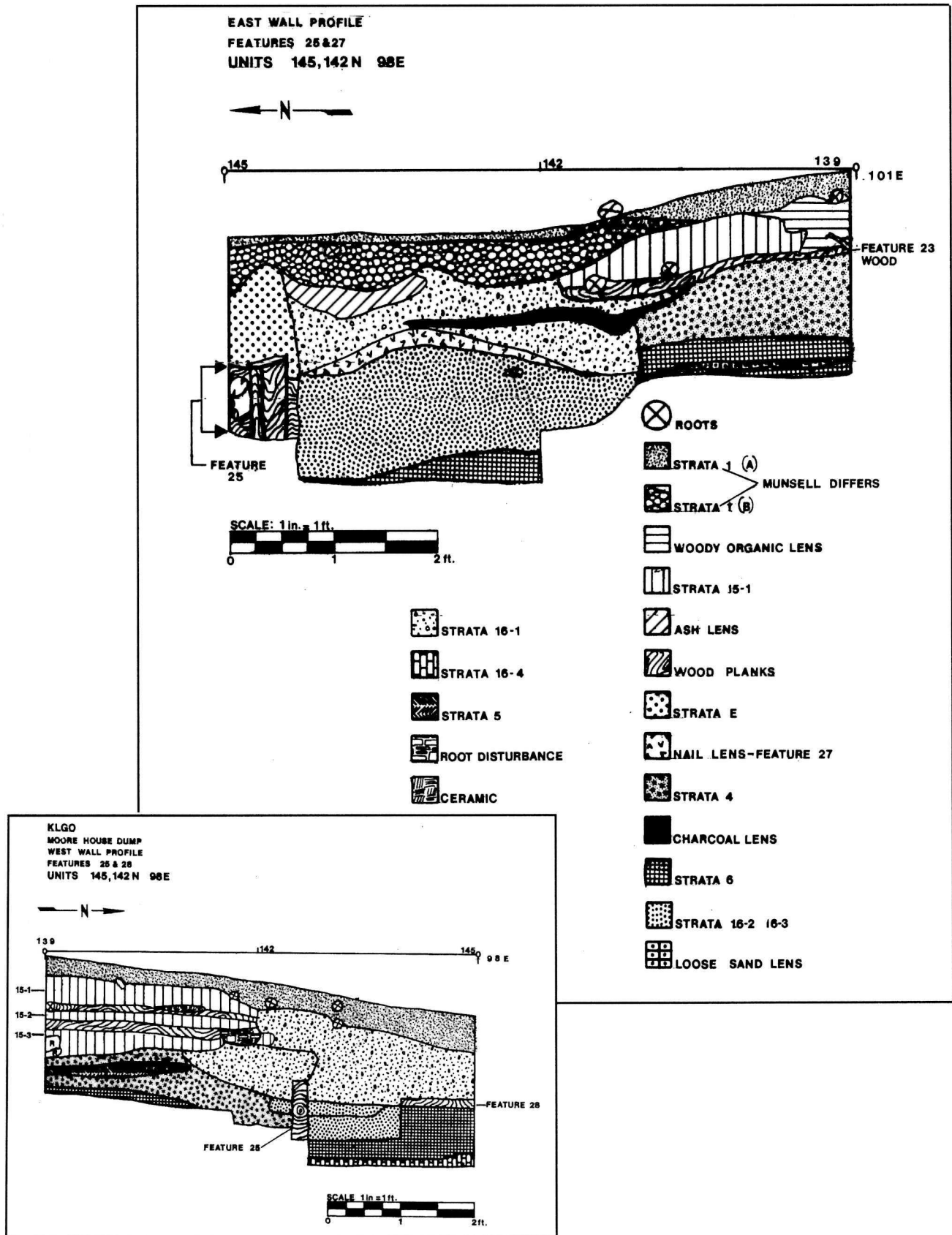


Figure 36. Soil profile drawing, east and west walls, units 142N/145N98E.



Figure 37.

Photo of artifacts in Kirmse dump.

artifacts in this area could have been carried there by Mill Creek. Also, the soil was much blacker than that south of Feature 25. South of the fence line, artifacts would have been deliberately deposited by the Moore or Kirmse families. Figure 38 is a photograph looking down into 145N98E and shows the artifacts in the old stream that washed up against the Feature 25 fence.

While soil close to both sides of the fence showed some spillover of soil, overall the soil of Feature 26 remained distinct from that south of the fence. In the northwest corner of the unit, a foot square area of flat wood planks, Feature 28, was uncovered about 1.7' below the original ground surface (figure 29). These boards were left *in situ* and can also be seen in figure 38. At the base of Feature 26, the soil along the west wall graded to the alluvial deposition of stratum 6, while in the northeast corner the soil was similar to the yellow-brown silt and clay of stratum 16-2.

South of the fence, the soil retained characteristics similar to that seen in Feature 24 of 142N98E. The area was still considered part of stratum 16, but stratum 16-1 began changing into the yellowish-brown soil of stratum 16-2 in excavation Level 5. Identified in that level was Feature 27, a rectangular area of burned nails lying south of the fence, along the east wall of the unit (figures 29 and 38). This was

an extremely high concentration of burned nail conglomerates lying in large clumps in a pinkish soil. Few other artifacts were found in this feature. The pink soil color that made this feature distinctive lensed out in Level 6, although large clumps of burned nails continued to be recovered. At the base of excavation Level 6, the soil became very moist, and, especially along the east side of the unit, graded to stratum 16-3, a very yellow (10YR 7/8) soil with a very high clay content. Charcoal, clinkers, and ash were also present. Excavation was stopped because the soil became too wet and difficult to excavate.

In 1995, Feature 28 was excavated to the same depth as the base of Level 2 of Feature 26, about two and a half feet below the unit datum. Feature 28 was not found to have any structural integrity, and the soil at its base was the same as the rest of Feature 26 — stratum 6. It is believed just to be a board fragment thrown into the streambed. Feature 26 was excavated one level deeper, to a depth of 2.45', and no soil changes were noted. Few artifacts were found, but in the north half of the feature was an orange soil with a heavy seed deposit. A hollowware bowl fragment matched a fragment recovered from Feature 28, and suggested that artifacts could have been deposited simultaneously in both areas. Excavation ended because the soil in Feature 26 was becoming increasingly moist and difficult to screen. The area was

informally probed. Gray, coarse sterile stream sand mixed with stream rock was encountered about two-tenths of a foot lower. Also found were large rusted clumps of disintegrated ferrous metal.

The area south of the fence was dug a little deeper to see if the yellow soil would continue. Erin Oliver's daily log notes (p. 16) showed the soil color in Level 8 was extremely varied: "The [iron oxide] throws an intense orange in. I'm following the burned, chunky stuff around the pit. It has turned into a coarse, gray sand (2.5YR 4/1 DG [Dark Gray]) in the SE corner but remains chunky through NE and center" (Cooper 1995a). The base of excavation Level 9 consisted of two colors, dark gray sand in the south and a black soil containing ash and coal in the rest. Excavation ended in Level 10, about 2.65' below the ground surface because of the wetness of the soil and the diminishing number of artifacts encountered. The gray soil extended throughout the area south of Feature 25, but stratum 16-1 remained prominent near the fence. The base of the fence was not found, and quick probes established that it continued about a foot deeper. Probing below the last excavation level, there was fine gray sand that extended across the unit. It was littered with lumber fragments - sawed siding ends, shingles, odd pieces, and so on. A

complete screwdriver; a wooden, threaded dowel; black cloth; a leather axe sheath; and small leather pieces were also recovered from this wood matrix. It is believed they were from some of the pre-1900 Moore construction episodes and are from the beginning of the use of this streambed as a dump. The gray sand and wood were found to a depth of almost three feet below the ground surface.

### **Original 1897 Fenceline and the Later Kirmse Household Dump**

Besides Feature 23, four units are considered part of the Kirmse era household dump. Two units (139N95E and 139N92E) were excavated to the west of the main dump site to find the western limits of the household dump. Two other units (140N103E and 140N110E), east of the main dump and adjacent to the north wall of Shed 1, were excavated for the same reason. A second objective was to learn exactly where the original property fence began "jogging" out into the streambed. The dump deposit in these areas was very shallow. To the west, it appeared to have been part of a wooden pathway. On the east side, little in the way of structural remains was present. The area does not seem to have received much use. There was evidence, however, of various

flooding episodes. All the datable artifacts showed this area was used from about 1910 until the 1930s, and all artifacts from these units have been included with those from Feature 23 (data-base name, KIRMDUMP).

Unit **139N95E** (3' x 3') was just west and south of 142N98E (figures 29 and 35). Even though it was so close to the dump, no features from the dump or fenceline were present; and the deposit ended less than a foot below the ground surface. Only three soil strata were identified,

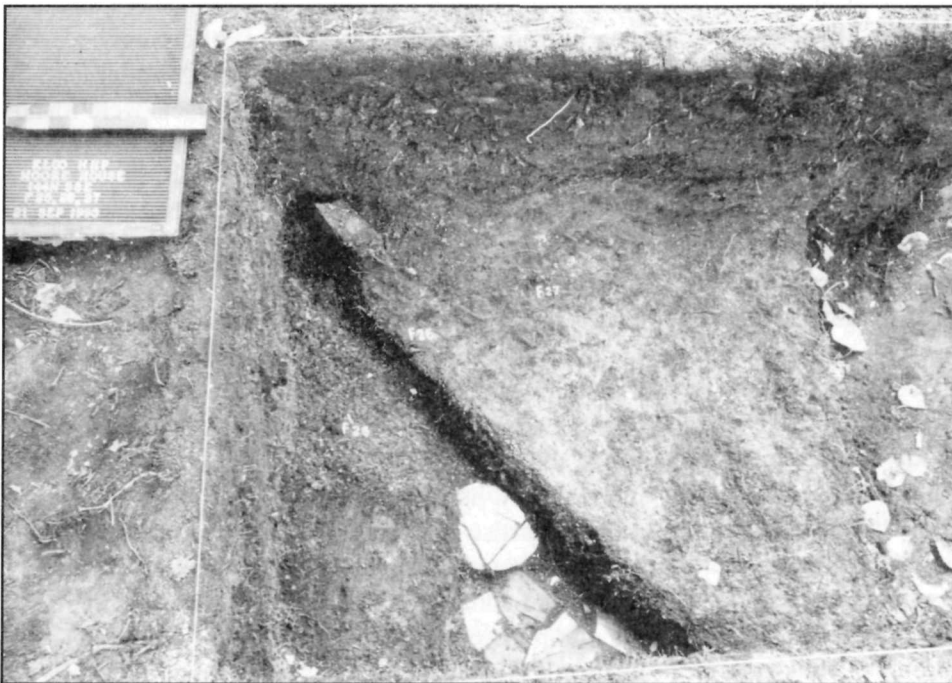


Figure 38. Photo of Features 25 and 26, 145N98E, in the Moore dump.

and they were spread evenly across the unit: stratum 1, followed by a dark grey brown layer (2.5Y/2) that contained burned rock, coal and charcoal (stratum 15-3) and most of the artifact deposit. The tin can matrix of stratum 15-1 was not present. A large cottonwood root dominated the north side of stratum 15-3, and may have been responsible for at least some artifact movement. A blue porcelain teacup saucer fragment cross-mended with sherds from Feature 23 into an almost complete piece.

Since unit 139N95E lacked any structural remnants of the ca. 1897-1900 fenceline, unit **139N92E** (3' x 3') was excavated in July 1995 to determine where the "jogged" section of the fence joined back into the north property fence. Another goal was to try to detect the western boundary of the Kirmse household dump. The stratigraphy was similar to 139N95E, except in areas where features intruded. In stratum 1, a small, gray circular area designated Feature 38 was found in the western half of 139N92E. However, as excavation reached the base of the stratum, it gradually disappeared. No artifacts were found in Feature 38. North of Feature 38, a large, light-colored soil ring became visible in the northwest corner of the unit, but was not given a feature designation.

By the base of excavation Level 2 (in stratum 15-2), flat, wooden planks emerged from the south wall and were designated as Feature 39 (figure 39). They are believed to have been part of a wooden walkway to the dump. They were left in place until the rest of the excavation was completed. Later, the construction crew excavated south of this area; and a similar "boardwalk," continuing at the same heading and the same depth as Feature 39, was revealed. A long strip of decorated linoleum was found below Feature 39. It matched samples already held by the KLGO museum curator.

About half a foot below the ground surface, the .6' in diameter, circular ring of soil in the northwest corner was named Feature 40 (figures 29 and 35). It ended 2.6 feet below the ground surface, while the last excavation level ended only about a foot below the ground surface. Nails, numerous small and large pieces of charcoal, several pieces of ceramic, a brick chip, and small bits of wood were recovered from the feature. Feature 40 is believed to be a postmold from the fence that ran along the north side of the Moore property. In figures 29 and 35, it can be seen that it is

in line with the projected angle of the 1897 fence line, where the "jog" of the fence rejoined the north boundary fence. Although it is in the same area as Features 7 and 13, remnants of the early yard fence, it does not exactly line up. However, Feature 40 could be where the outer yard fence changed direction; and Feature 13 could have joined this outer yard fence at a point other than where Feature 40 is found. Should that ever become an important research question, the area should still be intact enough for future excavation.

The Kirmse dump also extended eastward, north of Shed 1. Two units were excavated to determine the extent of the dump and to locate the east side of the fenceline "jog." Unit **140N110E** was a 5' x 2' excavation area, subdivided into two smaller (2' x 2') units, 140N110E and 137.5N110E. The surface of this area was fairly flat, with a slight depression on the southern side, closest to the shed, where occasional flooding created some soil erosion. At the base of the excavation, the beginning of a gentle sloping into the old stream channel was visible. No fence remnants or significant cultural remains were found, and both sections were only about a foot deep. Artifacts from Level 2 clearly match those from Feature 23, the Kirmse-era dump site identified in 1993: a brown transfer-print plate rim sherd does not cross-mend with a Feature 23 plate rim sherd, but is clearly from the same vessel or set of dinnerware. A couple of small garter fasteners appear similar to others found in Feature 23. More artifacts were found closer to the relic streambed and fenceline than against the wall of Shed 1.

Closer to the dumpsite, the stratigraphy was more complex in unit **140N103E**. Close to the shed, the excavation encountered culturally sterile sand, similar to that found all around the shed, at less than a foot down. Yet, the ground surface three feet north of the shed was much more complex. In the upper strata, there was coarse, pale yellow sand mixed with mortar. Dark humus containing small brick fragments was also mixed in. Together with the mortar-like sand found on the surface, this may be the remains of some kind of brickwork connected with the dump. Brick fragments were also found in Feature 23, just several feet away. Stratum 15-2 contained a high quantity of burned material. After the burned material was removed in Level 2, the differences between the culturally sterile sand in the

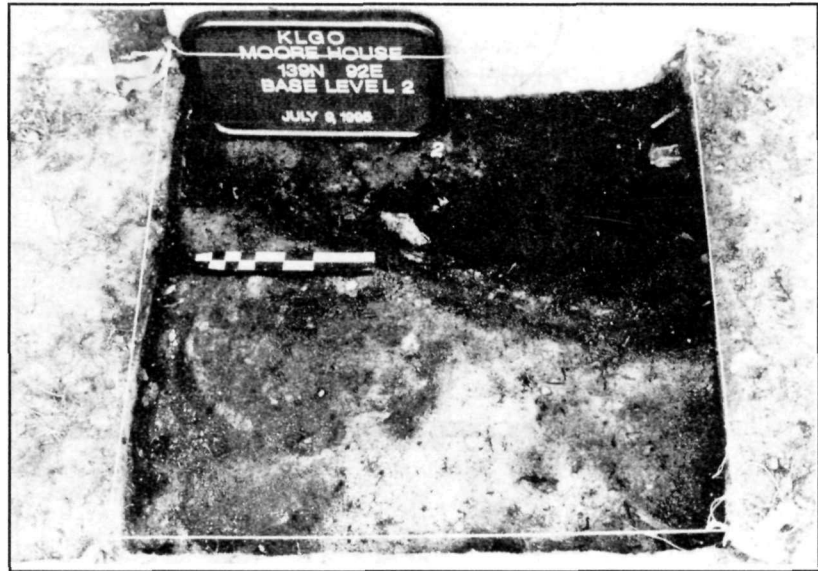


southern half and the more complex soils in the northern half became apparent. The northern portion was divided into two different soils: an olive brown, fine sand, and a darker, siltier, and less-burned soil in the northern foot of the unit.

While excavating Level 4, Feature 37 was identified (figure 35). It consisted of two small, upright pieces of wood in deteriorating condition. A flat piece of wood with a nail in it lies between these two posts. Its purpose is unknown. In 1995, this area was reexamined further to explore the purpose and function of Feature 37. Based on Robert d'Aigle's calculations of the angles and lengths of the sides of the "triangle" that composed the dump area, it was believed that the eastern boundary would be at 138N106E. The renewed excavation around Feature 37 quickly exposed a multicolored, mottled swirl in the sandy soil that eventually spread to the entire floor of the unit. Very small, upright posts were found south and east of the feature (figure 35). The excavation continued to a depth of 1.6' below the unit datum. The entire unit was sterile except for three rust encrusted nails found near the post in the southwest corner.

### **SURFACE SURVEY AND TESTING AT SHED 1**

Testing at Shed 1 (figures 15 and 40) was conducted because it was suspected that the first privy at this site might be underneath. During NPS construction, this building was reconstructed to house the physical plant for the house; and a concrete foundation was added, adversely affecting any cultural resources. A small hinged door on the southeast side of the building has been called the "chicken coop door," but in fact any small animal, such as a dog, could have used it. Once the floorboards were removed, the ground surface lay 3-4 inches lower. The area below the floor was littered with coal fragments and thick coal dust and a soil mixture that can best be described as a "duff" composed of decayed organic material.



*Figure 39. Photo of Features 39 and 40, Unit 139N92E.*

When the wooden floor was removed so that we could begin our survey, it gave us the opportunity to examine the construction of this outbuilding. Since it was built around 1900, we could observe building techniques not always seen at archeological sites that have no standing structures. Large, flat granite rocks were set at each corner of the shed, at several points along the sides and in several places under the floor joists (visible in figure 41). These were the building's piers and show that people used local materials. At first, we assumed there originally would have just been a dirt floor - like the dirt floor still present in Shed 2. However, we never found a hard-packed dirt surface inside the shed. For whatever purpose, a floor was installed at the time the shed was built. It was supported by three wide joists that ran east-west, crossed by thinner beams, placed on their side, that ran north-south. These formed the supports for the wooden floor, are diagramed in figure 40, and can be seen in figure 41, the photograph of the inside of Shed 1. There were artifacts underneath the floor, even in the middle of the building. Because the building sat on rock piers, the ground surface around the bottom of the building was nowhere very even. It is possible that when the shed was first built there was even more space between the bottom of the building (resting on rocks) and the ground surface, which might account for some large artifacts found underneath the floor.



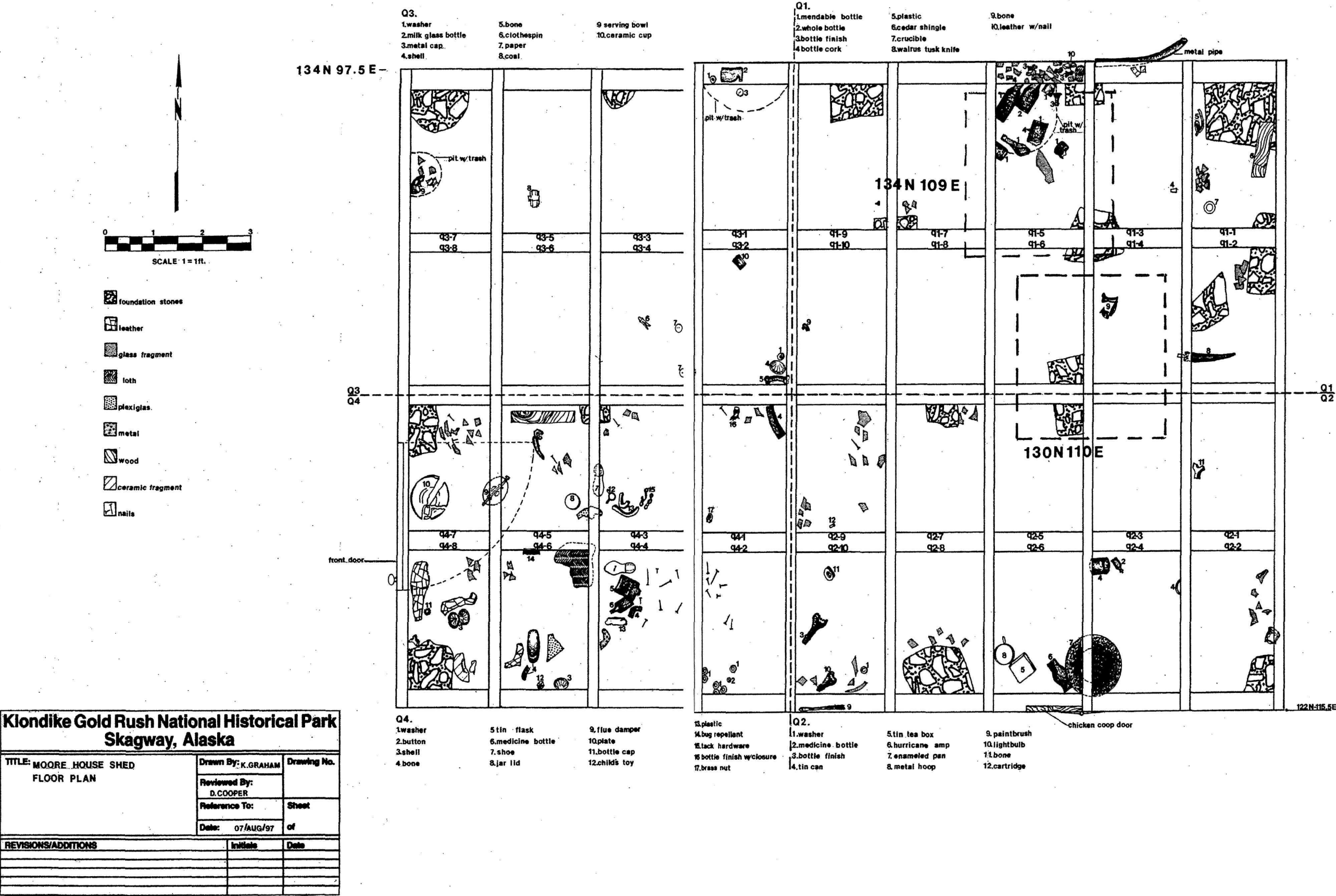


Figure 40. Plan view drawing, surface collection beneath floor of shed.

Figure 41.

*Photo of surface collection, south side of shed.*



Another question to be answered was the purpose of the shed. Because there were large quantities of coal fragments and coal dust, it was at one point used for storing the fuel that heated the house. It was concentrated in the northeast corner of the building. Shed 1 has also loosely been associated with raising poultry, and Bernard Moore wrote information about his geese setting eggs on the walls of his house in 1898. We know the Moore family even kept a pet moose. In early photographs, Moore's property extends well north of the house, and several outbuildings can be seen. This is where they probably housed their larger livestock. When NPS purchased the property from Jack Kirmse, the east half of Shed 1 had been crudely divided in half and looked like a small animal stall. Because the wood was different, and newer, than the rest of the building, it is not associated with the Moore family. It is more likely that this shed was used to house livestock when the Kirmse children were young. There was evidence of some kind of livestock use — a small bit, and possibly a riding boot. Since there is no evidence of any changes in the walls, it would have had to be a small animal, like a pony, to fit through the narrow entrance door. Close to the "chicken coop door," wedged underneath a floor joist, was an enamelware dairy pan, like one used to feed animals, perhaps even chickens (figure 40, Q2-6/4).

### **Shed 1 - Surface Collection**

After the floor was removed, the inside area of the shed was divided into four quadrants. We used the

existing floor joists to subdivide the area into smaller collection sections. Quadrants 1 and 2, on the east side of the shed, were each about 10' x 6'. Quadrants 3 and 4, on the west half, were 8' x 6'. Artifacts and features were mapped in place before the artifacts were surface collected. The layout of the collection grid and many artifacts drawn *in situ* can be seen in figure 40. Two excavation units were placed inside the shed with the intent of finding the privy. The artifacts ranged in date from about 1897 until modern times. The most recent artifacts were close to the walls, where they had blown or washed in, or perhaps were brought there by small rodents. There were no clusters of artifacts from a specific time in any certain area, and all artifacts recovered from Shed 1 were placed in the same database for analysis.

**Quadrant 1**, the northeast corner of the shed, was composed of 10 numbered rectangles, each about 2' x 2' (figure 40, Q1 area). Most artifacts were found within two feet of the wall of the building and could have been deposited there through natural formation processes such as flooding or wind. In Q1-5 there was a round, artifact-filled trough close to the north wall where artifacts such as the five broken, emerald green, ABM crown-top bottles could have washed in. Small artifacts, like the bones found in subquadrants 4 and 10 were probably there when the shed was built. Larger artifacts, like a black lead crucible found in subquadrant 1 and a walrus tusk knife recovered under the floor beam separating subquadrants 2 and 4, would be unlikely objects for discard. Although the walrus tusk knife was the

premier artifact recovered in this collection, not all of the blade was recovered, and what remained was highly corroded and fragmentary. So it is not known if the knife was broken before deposition. The ivory handle is not artistically carved in any way, but does have the word "ALASKA" incised on one side, perhaps by a pocket knife or similar tool. On the other side, the tusk is a much darker color, and has numerous scratches on the surface that could have been made pre- or post-deposition. We found it hard to believe, however, that anyone would deliberately discard such a piece. Even 100 years ago, walrus tusks were valuable, and scrimshaw was a popular tourist trade item. Because this seemed a likely place for the privy to be located, test unit 134N109E was placed here.

Continuing westward, **Quadrant 3** was only composed of eight 2' x 2½' subquadrants and was the northwest portion of the building. Except for pockets of artifacts along the shed walls, most subquadrants had few or none (figure 40). The trash pit along the west wall contained part of a colorless glass bowl clarified with manganese (SCA), ceramic and glass shards, a few nails, a piece of bone, eggshell fragments, a metal handle, many tin can fragments (not necessarily food cans), and a large, flat piece of plastic. Another small trash pocket was found along the north wall, in subquadrant 1. This was where a complete, opaque, undated, white toiletry flask was found. There was a complete small ceramic cream or butter jar in subquadrant 2 that matches jars from excavations in the Kirmse dump.

**Quadrant 2** was in the southeast corner of the shed, and many artifacts were found along the south wall (figures 40 and 41). There was a larger separation between the ground surface and the base of the building along the south side of the building. Artifacts clustered in subquadrants 4, 6, 8, and 10. Again, the interior subquadrants had considerably fewer artifacts. A variety of artifacts was recovered from subquadrants 4, 6, 8 and 10. A large metal-enameled pan, similar to a feed pan, was laying under the joist close to the "chicken coop door" between subquadrants 4 and 6. An enameled metal cup, missing a handle and slightly rusted, a few windowpane fragments and a piece of burlap added to the diversity. In subquadrant 6 was a rusted square tea tin, with the Lipton paper label for Ceylon tea partially preserved. An intact glass lamp chimney

with its metal base (no markings) was located by the metal pan, along the south wall of the building. Lying on the wall base in subquadrant 10 was an elongated paintbrush.

**Quadrant 4** consisted of eight subquadrants and was in the southwest corner of the building. That is also where the shed's door was found. The highest quantity of artifacts was found there; some were of a fairly recent age. This was not true of other sections of the building and may mean that this part of the floor had been removed or repaired at one time. Or, some artifacts may have been moved around by root action of adjacent trees. Several artifacts, including a large, rusted metal pan, were wedged underneath the door in the embrace of the roots of the adjacent ash tree, and were only discovered when the NPS maintenance staff cut down the tree and removed its stump in October 1994. Under subquadrant 5, a large section of cut root was found. It is possible that this tree's predecessor, or the large cottonwood northwest of unit 139N81E (whose roots were found growing south of Shed 1), caused problems with the floor that required repairs or removal of the tree. I believe root growth accounts for the diversity and quantity of artifacts found in this area of the shed. Artifacts were concentrated in subquadrants 3-8. Subquadrants 7 and 8 lay directly under the door and had a very high concentration and variety of structural and food-related artifacts such as a whole plate and a mendable Homer Laughlin *Angeles* saucer. A large piece of root grew through the finish of a medicine bottle, and a very attractive pearl-handled folding knife was corroding and disintegrating. Also, the duff underneath the floor was higher there than anywhere else.

Almost every subquadrant in this area had nails. In subquadrants 1 and 2, besides bent nails of various sizes, a cache of washers and nuts was also recovered. Other structural hardware and materials were also found, including a very long spike, structural wood, a galvanized washer, several screws, and the ubiquitous windowpane fragments. A few pieces of container glass, some bone fragments, a decorated porcelain sherd and a large 2-hole shell button constituted the domestic deposit. A small bridle/bit was found in subquadrant 3. Leather straps in 3 and 5 may have been part of the harness. No dates were discerned on the newspaper fragments found in subquadrant 5, but a porcelain electrical connection bears a patent date of 1929. A 6-inch stove flue lay

astride the floor joist separating subquadrants 5 and 7, while children's small, wooden, painted letter blocks and what looks like part of a wooden tinker toy set were also found there. Part of a rubber shoe made by the Boston Rubber Co. was found in subquadrant 5. In subquadrant 4 there was another shoe found, similar to work boots worn today. It may be an above-the-ankle boot, but for a very small, narrow foot that could only belong to a child. A can of stick bug repellent found in subquadrant 6 shows that people in the past were trying to keep from being bitten as much as we were. This product was manufactured by Union Carbide before the United States changed to using zip codes in 1963.

### Excavation Units

Two 3' x 3' excavation units were placed in the shed (130N110E, 134N109E) after the surface collection was completed to try to find the site's first privy. No privy was found, and the units quickly reached sterile sand. Two features were identified in unit **134N109E**. Feature 35, in the northern section of the unit, consisted of mottled grey sand. It bottomed out at a depth of about .8' below ground surface, but continued as a trough that ran northward. Sixteen-ounce emerald green bottles that post-date Prohibition were found there that match those recovered in the excavation unit and in the surface collection of Quadrant 1. Feature 36 was a shallow, circular depression containing rocks and artifacts in the southern portion of the unit. An Alfred Meakin saucer is similar to other ceramics found in the Kirmse dump. It is apparent from this excavation that artifacts were clearly being moved under this side of the shed during flooding episodes. There were at least two such episodes in this area, the first resulting in Feature 36 and the second resulting in Feature 35. Because of the lack of diversity among the artifacts, these are isolated, rather than yearly, events. Feature 36 is believed to be from one of the flooding episodes at this site, possibly the flood of October 22, 1937, when part of Skagway was inundated by six inches of water. Other major floods occurred in 1943 and 1944 (DePuydt et al. 1997:33; Yehle and Lemke 1972:89).

Unit **130N110E** was south of 134N109E. There was no evidence of periodic flooding in this area. When the thin, covering layer of coal dust was removed, a granite pier was found directly underneath a support

beam. Besides that, not one artifact was found in this roughly foot-and-a-half-deep excavation unit.

### MOORE HOUSE PRIVIES

The earliest privy at this site (ca. 1897-1900) was east of the original house and cabin. This privy sits at an angle different from the house and is visible in figures 4 and 5. Figure 6 was taken in the summer of 1900, after the cabin was moved west of the Moore House, and shows no privy in this location. Archeologists previously working at this site believed a depression in the ground east of Shed 1 was the privy location (Blee 1988:309; DePuydt 1988:18). When NPS decided to turn Shed 1 into the physical plant, it became especially important to determine if an intact privy hole was nearby.

In other areas of the site, there are few visible remnants of structures dismantled almost a hundred years ago. The fact that a depression would remain from that time was puzzling, since other areas of the yard had gradually filled over. It was not until our second year of excavation that we understood we were not dealing with one privy, but two. The pre-1900 privy was found very deep and was in a pocket hollowed out by active, running groundwater. It contained distinct artifacts and "live" night soil deposits. Most of it was not wood-lined. The privy that we had first encountered, in 1993, was a second, larger privy built by the Kirmse family and used from approximately 1910 until possibly 1917. We believe that indoor plumbing was installed around 1914, based on Blee's initial research. Our initial assumption was that the outhouse would have immediately been closed. However, several artifacts postdate 1914, and there is no reason that the outhouse could not have survived the installation of plumbing, possibly as a backup system. The Kirmse privy is visible in figure 10. Based on stratigraphy and datable artifacts, separating the two deposits into the later Kirmse and earlier Moore privies was possible.

Three units were eventually excavated. The first unit was excavated in 1993 and was close to the east side of Shed 1 (figures 15 and 42). Just part of a privy hole was found because the main deposit lay farther east. This privy was designated as Feature 11. In 1994, an excavation unit was placed on the east side





Figure 42. Photo of privy excavation, 130N116E, in 1993.

of the initial unit, so the extent of the privy deposit could be estimated. The 1994 excavation proved that there were definitely two privies in this spot, the earlier privy deeper, and at a different angle, than the later Kirmse privy. It also was named Feature 11. To determine the eastern limit of the privies, a unit was excavated in 1995 several feet east of the 1994 location. One section (containing deposits from both the earlier and later privy) was not excavated and was marked with a permanent cultural resource management marker cap.

### 1993: 130N116E

A 2' wide x 5' long test trench was subdivided into two 2' x 2.5' sections (figure 42). The privy was first recognized by a deposit of charcoal, ash, and pinkish burned rock. This type of deposit has been seen as a fill layer for other privies in Skagway (Cooper 1998:91-101) and is named stratum 17-1. The upper levels, both of stratum 1 and stratum 17-1, contained recent material. All artifacts from these levels were placed into the post-1940 database for analysis. Seven soil strata were defined. Where the soil was

uninterrupted by the privy hole, it consisted of stratum 1 overburden, about .3' thick, followed by level, bedded alluvial layers (stratum 2 graded into stratum 4) (figure 43, west profile). The coal and burned rock of stratum 17-1 were mixed with many artifact fragments, such as pieces of unidentified metal, small sherds of window and curved glass, a few wire nails, the odd piece of plain white ceramic, and a noticeable amount of bone.

Stratum 17-2 was a dark, gray-brown, silty sand that contained a high quantity of artifacts, many unbroken or mendable. It had a pungent odor and an oval shape (figure 44). Glass and metal followed the inside of the dark, gray-brown, silty sand stain. In excavation Level 3, within stratum 17-2, a flat piece of wood was found along the east wall. When it was removed, several artifacts were found, including an intact stoppered perfume bottle, along with night soil deposits containing abundant seeds. It was believed that the base of the privy had been reached. Figure 43 (west profile) shows the base of the hole. The dark stain of stratum 17-2 can be seen in figure 42: the wall of Shed 1 is on the right, and the privy on the left. All the artifacts from the 1993 excavation unit have been placed into the database for the Kirmse privy, the most recent privy on this site.

### 1994: 131N118E and 128.5N118E

A 3' wide by 5' long trench was subdivided into two units, one foot north and two feet east of 130N116E, hopefully more centrally located over the privy deposit. This turned out not to be the case because most of the privy was excavated in unit 128N118E. Both units were dug simultaneously, with identical strata and level designations. The total depth of this excavation was about three and a half feet below ground surface.

The excavation began in the slumped area, but with nothing else visible on the surface to suggest that this was an old privy. Although pieces of badly decayed wood were found throughout, they did not form a structural feature. This privy was simply a hole, or holes, dug in the ground. At the base of Level 1, Feature 11 was identified by the presence of stratum 17-1, the layer of burned rock and coal. At the base of Level 6, a badly decomposed wood plank was exposed that had also been identified at this elevation in 130N116E. Lying directly on the wood, and



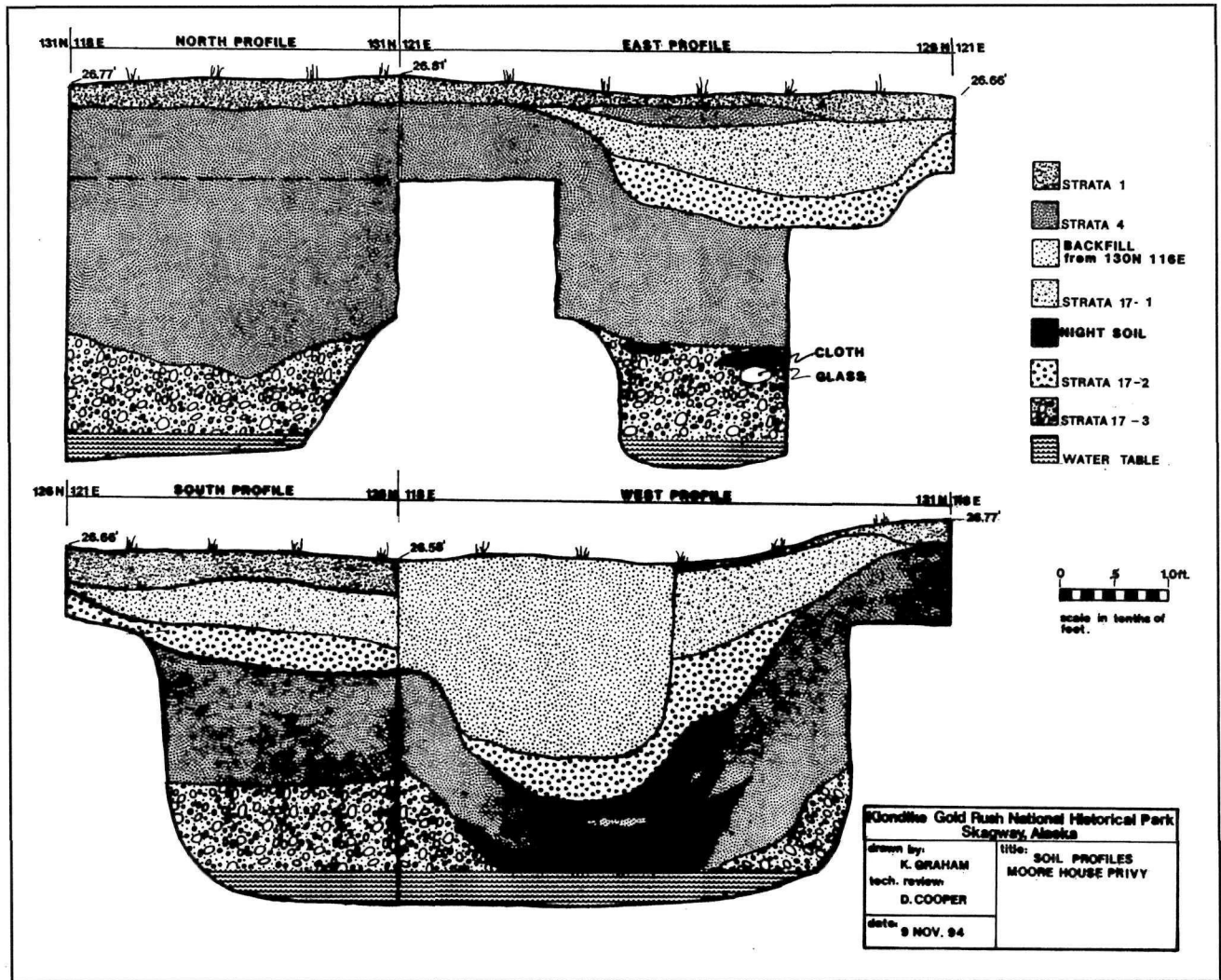


Figure 43. Soil profile drawing, east and west walls, 128N/131N118E, privies.

overlapping northward into the stratum 4 deposit, was a large, intact chamberpot (removed in Level 7) that was fully functional when deposited, and is today only slightly spalled (location can be seen in figure 44). It seems to loudly state the residents' independence from the old outdoor privy. Slightly to the north of the chamberpot in Level 7 were large windowpane fragments. By Level 7, a well-defined oval was visible (figure 44). A ceramic bowl fragment found in excavation Level 7 was manufactured by W.H. Grindley & Co. of Staffordshire, England, a mark used from 1914 until 1925 (Godden 1964:294).

By the base of Level 7, it seemed as though the bottom of the privy had been reached. Level 8 had a darker hue and by the base of the level stratum 17-2 was as large as it had been in Level 6. Large chunks

of milled wood continued to be found. Excavators noted that artifacts were concentrated in the north-west quarter of the deposit, where they had earlier noticed some slumping. Several two-ounce unmarked medicine bottles, manufactured by the Frank E. Reed Co., were found there. By the base of Level 9, the privy area was very ill-defined. There was a thin, dark strip of stratum 17-2 in a roughly oval shape surrounded inside and outside by the alluvial sands of stratum 4. This can be seen in the soil profile drawing of the west wall (figure 43). The number of artifacts continued to decrease, all from the central area of stratum 17-2. There was some burned rock mixed in with the soil (typical of stratum 17-1) in the eastern portion of the unit, outside the privy deposit area.

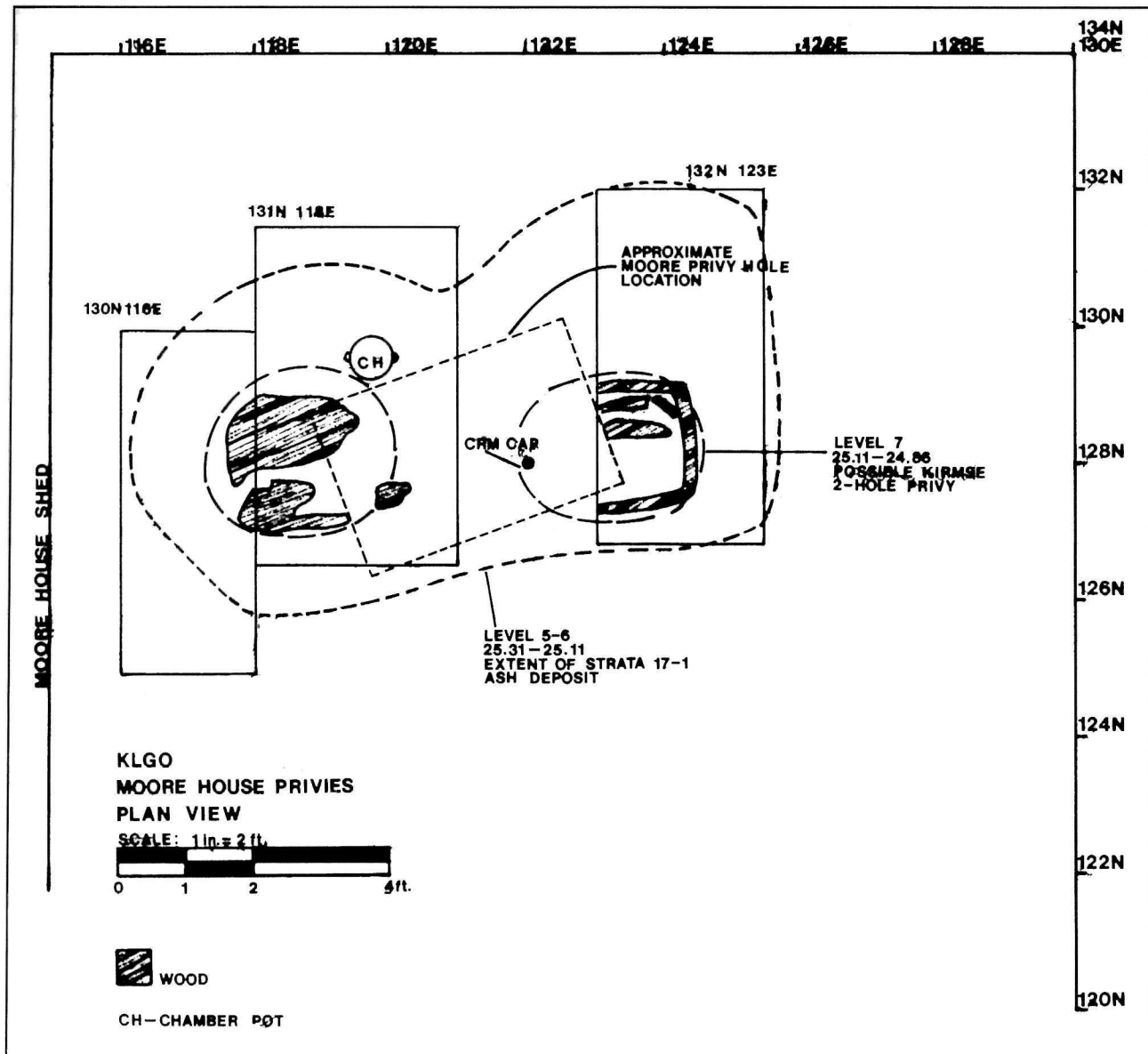


Figure 44. Plan view drawing, privy area.

In Level 10, a heavy concentration of night soil was again encountered, and it spread out to roughly the same dimensions it had occupied at the base of Level 7. The base of the level was about 2.5' below the ground surface. As the excavation continued deeper, however, it was found that the deposit began extending beyond what had been defined as the approximate 1' x 2' privy area. Strips of cloth were found along the east wall; under that cloth was a whole bottle. Other bottles were found about a foot southwest of that point. A soil probe was run down in the deposit, and it was discovered that the deposit continued for at least another half foot. From at least Level 7 there was quite a strong odor coming from

the soil. This smell was stronger as the privy got deeper and smelled much like any outhouse would be expected to smell, making excavation a very unpleasant experience.

Soon after excavation of Level 11 began, a huge bottle dump was found. It was covered by a layer of some kind of heavy cloth, followed by a thick layer of newspapers mixed with roots and a heavy clay night soil deposit with a strong odor. The most striking aspect of this part of the privy (besides never suspecting that it was there) was how it spread out from what we had defined as the boundaries of the privy. Level 11 varied between half a foot to slightly

more than a foot in depth, and its base was over 3'' below the ground surface. Although the base of the deposit may not have been reached, we stopped excavating because of problems with groundwater continuously filling the excavation. A bilge pump was used, but the water immediately rushed back in. Sterile glacial till bordered the privy deposit, and many bottles lined that interface. The deposit reached back into the 1993 test unit (130N116E), and that area was opened and bottles removed. They were assigned a designation of Level 5, unit 130N116E. Many bottles were found along the east side of the unit, and it was suspected that the deposit continued eastward. Hand auger holes were drilled in a line to the east, and night soil was found to continue eastward for at least another four feet. To clarify the number of privy deposits, it was decided to place another excavation unit to the east.

### 1995: 132N123E

The unit was five feet long by two and a half feet wide, and was one-and-a-half feet east and one foot north of the privy excavation units from 1994 (figure 44). Strata designations from the 1994 excavation of the privy were retained, as well as the designation of the privy as Feature 11. Below stratum 1 was stratum 17-1. It was found in the same horizontal stratigraphic position as in 131/128N118E. The beginning of stratum 17-1 is the first level in Feature 11 and continued through the base of Level 3, 1.13' below the ground surface. Before the end of Level 3, a definite dark semi-circular line was seen around the feature area.

In excavation Level 4 lenses of stratum 17-1 were still present, but disappeared before the base of the level was reached. Two new strata were identified: K and L. Stratum K was similar to stratum 4; however, it was a very dark gray-brown and contained more pebbles and smaller rocks in the matrix. It was found only in the feature area. Stratum L was a very bright red-orange layer that was composed almost entirely of burned material — crushed rock and coal. The stratum contained only a few nails and was otherwise devoid of artifacts. Stratum L was at its widest horizontal extent in Level 6 before it disappeared for the last time at that level's base. It was similar to stratum 16-3 in the dump unit 145N98E. Although stratum 17-2 appeared at the base of excavation

Level 5, by Level 6 there were only small pockets present. Most of Levels 6-7 were dominated by stratum K, until glacial till appeared across the unit at the base of Level 7, about two feet below the ground surface. This area is the same location, just farther east, as the privy feature seen in the 1993-1994 excavation units (figure 44).

The glacial fill was believed to have been placed on top of the privy deposit as a cap. No artifacts were found in Level 8, and very few in Level 9, when stratum 17-2 began to reappear at the base of the level. However, it was mostly lining the walls of this bowl-shaped feature, while most of the feature was composed of stratum K. At the base of Level 10 it was readily apparent that the main night soil deposit had been reached, all below, but still within, the rotten wood found in Level 7.

In Level 11, newspaper was concentrated in the northwestern corner of the feature. From the west wall, a foot-long wood post extended into the unit. The rest of the unit was excavated in arbitrary levels through the night soil, which had an unpleasant odor that became more intense with depth. One whole, unmarked mustard jar was found in Level 12. By this level the privy deposit was surrounded by a gray sand (5Y 4/1 dark gray), which in turn was surrounded by glacial deposits that defined the limits of the privy. In Levels 13 and 14, there were a number of milled wood fragments that resembled scraps from construction activity. In Level 14, two wood cut-outs were found. Both cut-outs were slightly oval or egg shaped with a notch on one end that came from a drill. The water table was intersected at 3.55 feet down. The privy deposit ended just below the water table, and Level 14 was the last level excavated in this unit.

## CONCLUSIONS

### HOUSE AND LOG CABIN

The fieldwork phase of our investigation was important to a fuller understanding of the evolution of the site. One of the questions we wanted to answer was whether or not there were still structural remains or artifacts present from when the log cabin was used as living quarters, from 1887 until 1900. Although we

found that the area had been greatly disturbed by later utility line work done by the Moore family (1900-1901 remodeling), the Kirmse family (~1914-1917 plumbing work; the 1940s foundation work), and the National Park Service (1985), we did find several features relating to this early cabin use. The first was a piece of wood, Feature 18, found about five feet north of the present north wall of the house. It was probably from the north wall of the cabin or shed, and most likely was discarded when the Moores began remodeling their house in 1900. Because it straddles the space occupied by the 1887 cabin and 1897 shed (figure 29), it is doubtful it is in its original location. South of this piece of wood was an artifact cluster, Feature 22, that contained several shoe parts and tin cans used by the Moore family. The most outstanding artifact from the pre-1897 era is the log cabin itself, which was moved by Bernard Moore west of the house, where it still sits today. After thorough excavations in the 1980s by Catherine Blee and in the 1990s by our crew, there is no reason to believe that any significant remains still exist below today's ground surface that relate to the old log cabin.

Our explorations underneath the house also helped us to understand early methods of house construction in Skagway. Originally, there was no real foundation excavation done under the house, and the support beams were laid very close to the ground below the 1897 one and one-half story, leaving no viable crawlspace below. One beam still has its original bark, and marks from the hand adze that shaped it, meaning that local wood was used. When, after about 45 years, the house settled unevenly, foundation work had to be done. To get under there to do the work, they had to dig out a workspace and made two wide "paths," or trenches. These ran along the perimeter of the house, but not under either porch. Next to the trenches was the 1897 ground surface, which had been undisturbed. The areas contained almost no artifacts, and very few were found during the foundation construction done by NPS. Before restoration, the original support piers placed by Moore when he built the house were still there, sitting next to the new piers, painted white, added by the Kirmsees. Photos were taken that document these building methods.

## YARD AND OUTBUILDINGS

Historic photos showed that, beginning as early as 1898, the area directly east of the house was fenced. Although the area between the east porch and the shed has been greatly disturbed, we did find a few of the logs from the early fence (Features 7 and 13). We also found that fill has been added to both the east and west sides of the house, probably to make water drain away from the house. This slope can be seen in figure 14, the contour map of the front and east side of the house. When dirt was hauled out during the 1940s when the trenches below the house were excavated, it was placed east and south of the east porch. On the west side, the fill may be from when the Park Service rehabilitated the log cabin and leveled the area with fill from their excavations below other buildings in Skagway. This means that any artifacts found in either area should be viewed cautiously, since they are most likely not in their original place of deposition.

We also had questions about the three outbuildings on the site, all in place by 1900. The search for Shed 3 (figure 15), in the southwest corner of the yard, was only partially successful. Features 2 and 3 do seem to be from the northern side of the shed, and many structural artifacts were recovered; but a definitive footprint for the shed did not emerge. A burned sod layer in the west wall of 81N15E probably means that the shed eventually burned to the ground. Any future construction work in this area should be monitored to see if any other remnants of this old shed emerge.

By removing the floor of Shed 1, we also learned more about how outbuildings in early Skagway were built. Similar to the house, the beams and joists were laid almost directly on the ground. Instead of using wooden foundation piers like they used to support the house, they simply used dressed local granite rocks. Whether this was because there was less weight to support, or because an outbuilding was simply not worth the time and money, is unknown. For the beams and joists, machine-milled boards were used. When Moore laid the original house foundation, it was before the gold rush stampederes arrived; and it was only through great effort, planning, and cost that lumber could be obtained from "down South." By the time the floor of the shed was



laid in 1900, Skagway was receiving regular shipments of durable goods from Washington and Oregon. It no longer made sense to fall one's own timber and shape it by hand. Archeological testing yielded no information on the actual purpose of the small hinged door on the south side of the shed. While it may have been used for ingress and egress of poultry raised by the Moore family, there has been no evidence recovered to defend that supposition. There were no eggshell fragments or feathers recovered in this area (many eggshells were found north of the shed, in the household dump), but that does not mean that poultry was not in the building. It could have also been used by cats, dogs, or even rodents. We know that Shed 1 was also used to store the coal that heated the house. Later it was modified to hold a small animal, probably a pony for the Kirmse children.

Artifacts from beneath the floor of Shed 1 were a mixture of types and were deposited at various times from 1897 until at least the 1950s (figure 40). It was impossible to separate them into any neat chronological divisions. Flooding was a factor in the deposition of artifacts along the north wall of the shed. Artifacts washed under the north wall were deposited there during the same period that artifacts were being placed into the "Kirmse dump." Based on evidence from the excavation units, the "high water marks" of the occasional fall flooding episodes lies north of about 132 on our site grid. The work also confirmed that there was NOT much movement of artifacts underneath this building, and artifacts found underneath the floor are the result of water, wind, or animal action at the margins of the building. We also learned that there is little likelihood that the original privy for the Moore House sat beneath this building, and once beneath the coal layer there were few artifacts or cultural remains.

Time did not permit us to explore Shed 2 in any detail. We know that it was used as an auto garage at various times over the years (G. Kirmse 1993; Sanborn 1914). Robert d'Aigle studied historic photos and concluded that Shed 2 was in fact the 1897 addition to the east side of the log cabin that had been simply moved to the east side of the yard when the 1900 remodeling took place. We do know that it has been modified over the years and that it has been lengthened by about seven feet. From

historic photos, we know that originally it was inside the east yard fence. Today, if that fence were reconstructed, it would run right through Shed 2, so its location has changed somewhat through time. Because there is some preliminary evidence that it is one of the oldest buildings on this site, it has been added to NPS' List of Classified Structures. The building should be protected, and if funds become available, more research should be conducted on its origins and function in the cultural landscape.

### **SPECIALIZED DUMP**

North of the house and the 1985 utility line, a burned area containing layers of ash, charcoal and artifacts was found inside wooden cribbing (Features 30-33). Some important questions to answer from this set of excavations concern the time period and function of this dump. Feature 32 ended far below the present ground surface, and its wood was very deteriorated. Thus, it was believed to be connected to the site's early years, perhaps one of the 1897 buildings. However, some artifacts postdate 1897. Also found against the back wall of Feature 32 was a broken section of 2" water pipe, believed to be part of Feature 20, the water drainage pipe installed around 1900-1901 by the Moore family. Fragments of a souvenir teacup with a Chilkat blanket design were found at the base of Feature 30 (about 3 feet below the ground surface) and also with Feature 32. These fragments cross-mended with fragments excavated by Blee in Operation 17 excavations. Her fragments were recovered from Features 16 and 18, a fill directly over the wood covering the 1914-17 cess-pool, about ten feet west of the current excavation (Blee 1988:88). This places the date of deposition for artifacts recovered from stratum 13, the dump area (Features 30/32/33), roughly between 1900 and 1917 (the ca. 1900-1901 remodeling of the house by Bernard Moore and the ca. 1914-1917 remodeling by the Kirmse family), dates that are consistent with the date range found for artifacts connected to this dump (Kirmse Dump #2, 1903-1925). Although initially it was thought that the wood of Feature 32 might have been from the north boundary fence, finding the other corner in unit 139N81E meant that this was definitely an enclosed space. The soil layering seen in Feature 30 was very distinct and probably was from cleaning the household's wood/coal stoves. This would account for the extensive



burning experienced by many, but not all, of the artifacts from this area. The wooden box could have been to hasten the further decomposition of the refuse, or for sanitary reasons. It was very puzzling to have this dumpsite found not 10 feet west of a major household dump (see discussion, below), with many artifacts dating to the same time period. However, the household dump has many more artifacts than this dump. The presence of specialized artifacts like the souvenir teacup and the dry cell battery, make it seem likely that this dump was used especially for the Kirmse jewelry-making and souvenir business.

## HOUSEHOLD DUMP

The excavations successfully found household dump areas associated specifically with the Moore and Kirmse families. The dump used by the Moore family is directly north of Shed 1, where a stream once ran north of the cabin. In 1897, this area was fenced and “jogged” into the stream, the area of excavation units 142/145N98E (figure 29). Because the Kirmse family modified the dump by adding a wooden floor (Feature 23), dividing the deposits into those associated with both families was possible. We also found that where the dump expanded both east and west of the original site, all the artifacts were associated with the Kirmse family. Many household artifacts were recovered from the dump area, but the greatest quantity was from the Kirmse family’s refuse. This should allow researchers to make comparisons between this post-gold rush dump and one created during the gold rush (DePuydt et al. 1997; Rhodes 1988).

The 1897 fence that ran along the north side of the property was also found (Feature 25). Attempts to find the location where the “jogged” portion of the fence rejoined the straight fence were based on archeological excavation, a review of historic photographs, and an examination of the 1904 quit-claim deed by Bernard Moore to his wife and children. Possible fenceline reconstructions based on the deed and on where archeological features were found can be seen in figure 35. Feature 40, a postmold, is clearly the western junction of the “jog.” Feature 37 may or may not be the eastern junction of the “jog,” since the 1904 survey line falls east of this area. It also may not have been *in situ* — It looks like it

could have been part of a fallen fencepost. Another possibility is that the fence was altered — from a triangle in 1898, to a 3-sided area in 1899. The historic photographs seem to show a change (figures 4 and 7). The possibilities are shown in figure 35.

## PRIVIES

Three archeological units were excavated (130N116E, 128-131N118E, and 132N123E); and two privies were found, one right on top of the other. The deepest deposit is believed to be from the privy used by the Moore family from 1897 until around 1900. Figures 4 and 5 are photographs that show the privy at a different angle from the house. The later privy, connected with the Kirmse family, can be glimpsed in figure 10. Our excavations showed that the later privy was much larger and was possibly a “2-seater” (figure 44). For each excavation, these later holes ended at the same elevation, 25.5' AMSL, and contained similar artifacts. Ceramic artifacts manufactured by the W.H. Grindley company dated from 1914-1925 and were found in the Kirmse deposits of all three excavation units. Artifacts found in the privy were a mixture of structural and household items. The privy may have been used from 1910 until about 1917, and the alcoholic beverage bottles found there may have been placed there when Prohibition was enacted in Skagway. This was true in the privy belonging to Kirmse’s next-door-neighbor, Father Philibert Turnell (Spude et al. 1993).

The early privy used by the Moore family was not lined with wood, but was capped. In 132N123E, a cap of glacial fill had been placed over the deeper area. In 128N118E, there was a layer of fine sand and cloth that sat over a deposit that also expanded to the east. The artifacts from this early privy were dominated by a collection of mainly unmarked, generic medicine bottles and flasks. Elevations for this deposit were also very close — 24.81'-23.22' AMSL in 128N118E, 24.56'-23.31' in 132N123E. Most of the bottles there looked like they were thrown in together, probably at once, and then covered with newspaper and a large tarp.

There are a few problems with equating the bottle dump found in 128N118E and the artifacts found at the base of 132N123E with the 1897-1900 location for the privy. First, it would have been a very large

hole — 4-5 feet. There were far fewer artifacts found in 132N123E than in the bottle dump of 128N118E. Also, the stratigraphy in both units is a bit different — more night soil in 128N118E, and more of a burned layer in 132N123E. Even so, tying both these deeper deposits with the Moore family, and the 1897-1900 privy, is still the most logical choice. There was absolutely no evidence that the original privy was to the north, south, east, or west of this location. Soil probes and excavation in other areas revealed no privy deposits anywhere else. Reexamination of historic photographs showed that the excavation area should have been close to the location shown in the photographs. The east soil profile for 131N/128N118E (figure 43) shows the unbroken bedded alluvial layers of stratum 4 sitting over the deeper privy deposit.

It is possible that the area left unexcavated will hold some answers. However, there is no point in undertaking any excavation in this area in the near future. We know that there are abundant botanical remains there and at least some artifacts. Techniques used by archeologists in the future will undoubtedly be more sophisticated than those we are now using. They could probably get better answers to better questions, and this area is worthy of preservation. Because of the escalation in home and business construction in Skagway, and the installation of increased utility line connections, fewer and fewer of these old privy holes remain. This site contains remains that date from the beginning of the gold rush, a very rare thing in present-day Skagway. To aid the cultural resource managers at KLGO, a permanent cap was placed on the unexcavated area and was given the designation SKG-001.

---

## CHAPTER 5 - ARTIFACT DESCRIPTION

### METHODS

Processing, classification, and assigning artifact dates followed procedures set out in the *KLGO Laboratory Manual* (Cooper and Sanders 1994). Artifact information was entered into a dBase III data entry program compiled by the Alaska Regional Office (ARO) that was compatible with NPS's national curatorial program, Automated National Catalog System (ANCS). This saved the KLGO museum staff thousands of hours of cataloging time.

Artifacts were cleaned and processed in the KLGO archeological laboratory. For analysis, artifacts were separated into material categories (glass, ceramic, bone, metal, and so on) and then further separated into functional categories. This functional classification system has been used, and described, in previous KLGO archeological reports (Blee 1988:28-35; Cooper 1998:103-105; DePuydt et al. 1997:62-63; Rhodes 1988:147-149; Spude et al. 1993:20). Although this system differs slightly from other classification systems, those who want to use this data to answer comparative research questions should be able to easily transform our categories into other systems.

Almost all artifacts were weighed. Nails were first separated from other metal artifacts, such as screws, tacks, or can fragments. Because different sizes and types of nails are used for different building activities, nails were further identified by "pennyweight" size (2D-60D) as well as recording their actual length, although pennyweight size is used for this report. Other attributes such as type of manufacture (wrought, cut, or wire) and nail type (common, box, finishing, and so on) were also recorded when possible.

Various specialized analyses were provided through contracts: faunal analysis by David Huelsbeck, Ph.D., Pacific Lutheran University, Tacoma, Washington; macrofloral analysis of botanical remains by Steve L. Martin and Virginia S. Popper, Ph.D., University of California, Los Angeles; microscopic analysis for pollen, phytolith and parasite remains by

Linda Scott Cummings and Thomas E. Moutoux, Paleo Research of Golden, Colorado; and Karl Reinhard, Ph.D., University of Nebraska. All reports are included as appendixes.

Artifacts are divided into five basic categories: structural, food-related, personal, specialized activities, and functional unknowns. A full description of each artifact category, the rationale for the classification, and examples of artifacts for each category, are set out in the laboratory manual used at KLGO (Cooper and Sanders 1994:27-33). The following table illustrates the divisions and subdivisions in this system. Each artifact may have only one assigned function although there are times they could fit more than one category. The rationale is to assign a function that most closely fits the context from which the artifact was recovered.

Various artifacts were further subdivided for classification and description. Flat glass fragments that were used for windowpanes were separated from hollowware. A minimum number count for windowpanes was ascertained by counting corner and edge pieces, as well as differentiating by thickness and color. Other types of glass — those for holding beverages, food or condiments, medicine, glass used in lighting, or decorative glass containers — were also grouped into categories. Glass was first sorted into groups by color, and then diagnostic elements such as rims or bases were cataloged separately. Some UV fluorescence was also used for obtaining minimum number counts on colorless glass. Cross-mending of vessels was attempted when possible, or where it could answer a research question such as the horizontal displacement of artifacts on the site. Similar to glass, ceramics were first sorted by paste type (whiteware, stoneware, ironstone/ graniteware, or porcelain), and then by decoration style. Unless cross-mending into a whole or incomplete vessel was possible, diagnostic vessel elements were cataloged separately. Any manufacturer or patent information was also recorded and, where appropriate, researched for dates and locations of manufacture.

**Table 4 - KLGO Function Codes**Structural (001)

001	Window Materials
002	Nails
003	Structural Hardware
004	Materials
005	Utilities
999	Unknown

Domestic Food/Drink (002)

001	Food Storage
002	Food Preparation
003	Food Serving
004	Food Remains
005	Beverage Container
999	Unknown

Domestic Other Household Activities (003)

001	Pharmaceutical
002	Furnishing
003	Housekeeping
004	Personal
005	Grooming/ Hygiene
006	Leisure
007	Children
008	Female
009	Male
010	Lighting, internal
011	Heating/cooking
012	Clothing
999	Unknown

Specialized Activities (004)

001	Hunting/Fishing
002	Public Services
003	Communications
004	Office Supplies
005	Transportation
006	Bulk Storage
007	Military
008	Religious
009	Entertainment
010	Sexual Commerce
011	Economic Exchange
012	Construction (tools)
013	Farming/Ranching
999	Other/Unknown

Unclassified (005)

001	Whatsits
002	Unknown
003	Functionally Unclassifiable

Samples (006)

## ARTIFACT DATING

No artifacts were recovered that could be attributed to the former use of this land by the Tlingit. Beginning with the erection of Moore's log cabin in 1887, the families occupying the site disturbed the natural soil for various activities many times. Various soil strata were identified and discussed in chapter 4. Some dates for the soil strata were known from the time the ground disturbing work occurred. More often, artifacts were used to date the soil strata. Only certain artifacts were datable. The most common methods used to date the artifacts were: (1) glass manufacturing techniques (use of manganese [pre-1918] or selenium [1911-1930] to clarify colorless glass, a method for finishing bottles); (2) dates found on artifacts (coins, patent dates, and so on); or (3) information about a manufacturer that was identifiable through a mark made when the artifact was manufactured. A list of manufacturer marks found on artifacts from this site can be found in appendix 2.

The 1985 utility line area contained artifacts dating from the gold rush to the present and was too disturbed to be useful for analysis. The 1940 construction trench around the house contained artifacts from a wide range of periods and is also of little use for analysis. Three databases are based on specific land use — the southwest yard area, the boardwalk/east yard area, and the floor below Shed 1. All contained mixed deposits. Three deposits have a positive correlation with the Kirmse family: the Kirmse privy and both Kirmse dumpsites. Three other deposits were positively identified with the Moore family: the Moore privy, the Moore dump, and the Moore soil strata. Other deposits contained a mix of artifacts from both families, although obviously the much longer occupation of the site by the Kirmse family means that a far greater number of artifacts will be associated with them.

"Artifact dates" for table 5 were calculated by getting the median date for each datable artifact, adding all median dates for each database, and then dividing by the number of datable artifacts in that database. The date range was computed by calculating the standard deviation of the median artifact dates for each database. The standard deviation was then rounded to whole numbers. Areas that were disturbed, where artifacts from various periods were found together, have the greatest date range, and are the least useful for meaningful artifact comparisons.

Another aspect of this comparative data is how the artifact databases compare in terms of artifact density. Table 6 summarizes information about the amount of soil excavated and the number of artifacts recovered in each area. This table should be kept in mind when considering artifact comparisons. Were more artifacts found in a deposit because that area received more excavation than any other, or is there some other reason for a high or low artifact quantity, or for certain artifacts appearing in certain locations? Here, the area that had the highest amount of soil excavated, the area in the 1985 utility line disturbance, contained very few artifacts. This is because much of the deposit consisted of sterile fill. On the other hand, the excavations in the Kirmse dump account for only 7% of the total amount of soil excavated, but the highest quantity (27%) of artifacts were found there, meaning that it was a very dense deposit. In fact, artifact density was highest in both the Moore and Kirmse dumpsite excavations. The last column of the table shows artifact density — the amount of artifacts per cubic foot excavated. The average artifact density for the entire site was 40 artifacts for each cubic foot of soil excavated.

Artifacts were generally divided into structural and non-structural categories. Comparing them quantitatively is not really a useful endeavor. However, it does give a general idea of what activities might have been more frequent at a given site. In this case, the fragment counts are more useful than the MNI (minimum number of individual) figures, since, for instance, each nail is counted individually even though there may have been 3-4 on each board. The following table makes this comparison.

Based on the fragment count, discards or losses from construction/remodeling work on the house are fairly well balanced with discards or losses from domestic activities, such as eating, drinking, leisure endeavors, and clothing oneself. The difference is that artifacts from construction or remodeling are deposited mostly at one time, during new construction or remodeling work, while discards from other activities build up much more slowly through time. So the processes that created these two different types are different and should not be compared further.



**Table 5 - Analytical Database Description**

<b>Database Name</b>	<b>Description</b>	<b>Artifact Date</b>
1985DIST	Areas to the north and east of the house disturbed by utility line work by NPS in the 1980s (stratum 11).	1939 $\pm$ 30 (1909-1969)
POST1940	Deposits around the house and yard site mostly from stratum 1, but some from stratum 2, that are the result of gradual artifact accumulation, with most of the artifacts found in the layer post-dating World War II, characterized by the presence of modern synthetic plastics.	1939.1 $\pm$ 30 (1909-1969)
PRE1940	Deposits around the house and yard site from strata 2-4 that are the result of gradual artifact accumulation, with most of the artifacts found in the layer pre-dating World War II, characterized by the lack of modern synthetic plastics and the presence of manganese or selenium-clarified colorless glass.	1912 $\pm$ 16 (1896-1928)
TREN1940	Deposits around the perimeter of the house (stratum 12) that were disturbed when foundation work was done in the 1940s, with most of the artifacts pre-dating World War II.	1922 $\pm$ 22 (1900-1944)
PRE40TREN	Deposits from the southeast, east and north sides of the house that were disturbed when utility line work was done ca. 1917-1930s (stratum 14).	No datable artifacts
KIRMDUMP	Deposits from a distinct dump area and spillover, all located northeast of the house (north and west of existing Shed #2). Actual dump characterized by a wooden floor and thousands of tin can fragments (stratum 15); dump believed to be closed by 1930s.	1912 $\pm$ 10 (1902-1922)
KIRMDMP2	Deposits from a dump area directly north of the house (stratum 13) characterized by alternating layers of black coal and ash with artifacts exhibiting a high degree of burning; artifact cross-mending with Blee's Op. 17, Features 16/18.	1914 $\pm$ 11 (1903-1925) TAQ: 1912
KIRMPRIV	Deposits from a privy characterized by the presence of night soil (stratum 17); believed to be in use from ca. 1908-1917.	1914 $\pm$ 10 (1904-1924)
MHSHED	Deposits from below the floor of existing shed (erected ca. 1900) characterized by presence of high amount of coal and dust; water intrusion for occasional flooding episodes on the north side of the shed, and animal burrowing on the south side of the	1918 $\pm$ 20 (1898-1938)

Database Name	Description	Artifact Date
	shed brought more recent artifacts into the deposit; artifacts are also from four small excavation units below the floor and on the south side of the shed.	
MOORDUMP	Deposits from below the "Kirmse dump" located north of Shed #2 characterized by wet soil that was originally in the streambed (stratum 16).	1902 $\pm$ 4 (1898-1906) TAQ: 1890
MOORPRIV	Deposits from below the "Kirmse privy" characterized by high deposits of night soil, no wood lining, and contact with the water table (stratum 18).	1907 $\pm$ 3 (1904-1910) TAQ: 1905
MOORE	Deposits in sandy soil located next to original remnants of the Moore cabin or from the pre-gold rush section of stratum 4.	1902 $\pm$ 8 (1894-1910)
SWYARD	Deposits from the southwest section of the yard in strata 1-3, near where a shed was erected ca. 1898.	1913 $\pm$ 16 (1897-1929)
BDWALK	Deposits from east of the house in or around the area where a wooden walkway had been placed sometime after 1914.	1948 $\pm$ 26 (1922-1974)

**Table 6 - Excavation Volume Comparison**

<b>Database Name</b>	<b>Cubic Ft. Excavated</b>	<b>% of Total</b>	<b>Total Artifact Fragments</b>	<b>% of Total</b>	<b>Artifact Density</b>
1985 Dist.	76	16%	709	4%	9
1940 Trench	65	14%	1,938	10%	30
Kirmse Privy	55	12%	2,959	15%	54
Kirmse Dump 2	54	11%	796	4%	15
Post-1940	42	9%	2,360	12%	56
Kirmse Dump	36	7%	5,228	27%	145
Southwest Yard	33	7%	613	3%	19
Pre-1940	31	6%	945	5%	30
MH Shed	30	6%	1,531	8%	51
Boardwalk	22	5%	281	1%	13
Moore Privy	12	2%	545	3%	45
Moore Dump	10	2%	1,130	6%	113
Moore Deposits	7	2%	133	1%	19
Pre1940 Trench	2	0%	41	0%	21
<b><i>Total</i></b>	<b>475</b>		<b>19,209</b>		<b>40</b>

## STRUCTURAL ARTIFACTS

Structural artifacts mainly consist of windowpane fragments, nails, and other fasteners (tacks, screws, bolts, and so on). Other artifacts that fall into this category are materials (brick, concrete, milled wood, roofing, siding, or paint), hardware (for doors or windows), and utility fixtures (plumbing hardware or electrical insulators or connections — not lighting devices). Most of the structural artifacts found at the Moore House are from the various construction and remodeling episodes that occurred there through the years.

Appendix 3 contains a summary of all the structural artifacts recovered from the Moore House site, both by fragment and MNI counts. Most of the structural artifacts were nails (53% by fragment count and 77% by MNI count). They were generally found either close to the house, in the 1940s builder's trench, or in the post-1940 strata. The Kirmse privy also contained a large quantity of structural artifacts.

### Windows

Table 8 summarizes the windowpane fragments found around the Moore House. The glass has been divided based on thickness,  $\frac{1}{64}$ ". Windowpane analysis is difficult because the panes are typically very fragmented and are too difficult and time consuming to attempt cross-mending to get accurate minimum number figures. It is doubtful that 587 windowpanes were broken around this one house, although the site is more than 90 years old (that would mean that roughly 15 windows were being replaced every year). Dividing the windowpane fragments based on thickness is also misleading. We have measured many of the windowpanes on Skagway's historic buildings and have found that one

pane can vary as much as  $\frac{1}{64}$ - $\frac{2}{64}$ " in thickness, especially the older windowpane fragments.

What we learn from table 8 is not unexpected. Most of the windowpane fragments are found in deposits containing artifacts from the 1920s to the present (the post-1940 deposits and the 1940 foundation trench). This long time frame spans several of the remodeling episodes that we know took place in the house. The very early deposits related to the Moore family show little window breakage or replacement. Most of their broken window glass seems to have been deposited into the streambed dump, along with other construction remnants.

A few interesting trends emerge when looking at the extreme end of the windowpane thickness distribution. The thinnest glass ( $\frac{3}{64}$ ") is concentrated in the two privy deposits, 43% in the Kirmse privy and 10% in the Moore privy. Although the sample size is small (49 fragments, 30 MNI), it is similar to what was found in the Skagway Block 39 excavations — a higher percentage of thin, single-strength windowpane was found in their privy deposits than from other, general sites in Skagway. The distribution of other glass thicknesses is also similar to other Skagway sites (Cooper 1998:228-230). Only nine fragments of "plate glass" ( $\frac{9}{64}$ " or thicker) were found here, and none from the earliest deposits. Since plate glass is found on automobiles or in more recent houses, this is also not surprising. Some of the plate glass fragments were found at the front of the house. They are believed to be from a plate glass window installed by Jack Kirmse in the 1960s (G. Kirmse 1993, pers. comm.). Others were found north of the house, near the second Kirmse dumpsite that was disturbed in the 1980s.

**Table 7 - Structural vs. Non-Structural Artifacts**

	<b>Frag Ct</b>	<b>MNI Ct</b>	<b>Frag %</b>	<b>MNI %</b>
Structural	9,144	6,019	48	75
Non-Structural	10,065	1,979	52	25
<b>Total</b>	19,209	7,998	100	100

Table 8 - Windowpane by Thickness

FRAGMENT COUNT									
DATABASE	3/64	4/64	5/64	6/64	7/64	8/64	>9/64	TOTALS	% TOTALS
1940 Trench	0	89	275	148	9	2	2	532	27%
Post-1940	11	154	166	104	12	8	1	477	24%
Kirmse Dump	4	37	96	79	17	2	0	236	12%
MH Shed	0	27	75	45	11	9	1	170	9%
Kirmse Privy	22	8	15	52	4	5	1	118	6%
1985 Dist.	3	20	33	36	11	5	3	111	6%
Moore Dump	0	12	20	20	12	2	0	66	3%
SW Yard	0	3	22	17	21	0	0	63	3%
Bdwalk	0	3	12	28	5	3	0	51	3%
Kirmse Dump 2	4	8	17	79	5	0	1	114	6%
Pre-1940 Trench	0	2	14	2	0	0	0	18	1%
Moore Privy	5	0	0	0	0	0	0	5	0%
Moore strata	0	0	2	1	1	0	0	4	0%
<b>TOTALS</b>	49	363	747	611	108	36	9	1,965	
<b>% TOTALS</b>	3%	19%	38%	31%	6%	2%	0%		



(continued) **Table 8 - Windowpane by Thickness**

<b>MNI COUNT</b>										
<b>DATABASE</b>	<b>3/64</b>	<b>4/64</b>	<b>5/64</b>	<b>6/64</b>	<b>7/64</b>	<b>8/64</b>	<b>&gt;9/64</b>	<b>TOTALS</b>	<b>% TOTALS</b>	
1940 Trench	0	20	35	25	7	2	2	95	16%	
Post-1940	4	19	31	25	7	3	1	95	16%	
Kirmse Dump	3	27	14	12	10	2	0	69	12%	
MH Shed	0	16	21	21	5	5	1	72	12%	
Kirmse Privy	13	5	10	30	1	2	1	63	11%	
1985 Dist	3	10	23	19	10	5	3	73	12%	
Moore Dump	0	4	10	6	4	2	0	26	4%	
SW Yard	0	3	8	9	7	0	0	27	5%	
Bdwalk	0	2	8	6	1	2	0	19	3%	
Kirmse Dump 2	4	6	8	8	3	0	1	30	5%	
Pre-1940 Trench	0	2	7	2	0	0	0	11	2%	
Moore Privy	3	0	0	0	0	0	0	3	1%	
Moore strata	0	0	2	1	1	0	0	4	1%	
<b>TOTALS</b>	30	114	177	164	56	23	9	587		
<b>% TOTALS</b>	5%	19%	30%	28%	10%	4%	2%			

## Nails

As with most historical archeological projects, nails were the most common artifacts found. There were a total of 3,080 nails and 1,804 nail fragments recovered. Some of the nails were in very poor condition, and not much information could be recorded. Only two nails were handmade, or wrought. Both were a large, odd size and were found fairly close together - one in the Kirmse privy, and the other beneath the floor of Shed 1. While 4,556 were "wire" nails, only 54 were "cut," and they constituted only 1.2% of the total identifiable nails. This is similar to the low percentage found at other Skagway sites. This is because the wire nail industry dominated the nail market by 1900 (Cooper 1998:231-232). The cut nails were found in varied deposits: the post-1940 deposit, the Kirmse and Moore dump area, and the area where the 1887 log cabin stood. In the 1980s, Blee found 108 cut nails in her excavations north of the Moore House. They comprised a much higher percentage of her nail deposit, although her number of total nails was much less than the excavations in 1993-1995. She did find cut nails in all her time periods, from 1888 into the modern era, and that was also true of these excavations. Our percentage of cut nails is probably lower because the current investigations took place over a much larger area, and were not concentrated in the area where the 1887 cabin stood. Cut nails are still used for special purposes, such as for masonry work.

Table 9 summarizes the types of nails found in each deposit. The highest percentage of nails from one location (17%) came from the Kirmse privy, the last privy on the site. Most of the common and finish nails also came from the Kirmse privy. Almost all the spikes were found there, and others were found close by underneath the floor of Shed 1. These boat and barge spikes are used for special purposes, such as framing (American Institute of Architects 1981:284). It does not seem likely that all the nails would have come from the destruction of the privy, and the deposit post-dates the construction of Shed 1 by at least 10 years. The large deposit of nails may be from a deliberate discard of construction debris from the remodeling work done between 1914-1917 by the Kirmse family to fill up the old, and now unneeded, privy hole.

Many nails were found either close to the house (the 1940 trench) or in the topmost soil level (Post-1940). The number of fine or finish nails could be underidentified since corrosion can obscure their very small heads, and they would be counted as fragments. Finish nails are usually used for molding, siding, and trim work. Since 31% were found within two feet of the house, they were probably used when the red asphalt siding was put over the house's original wood siding, sometime after 1940. Galvanized roofing nails were most common in the recent deposits, but two were also found in earlier strata. They undoubtedly reflect the various new shingled-roofs that had to be installed on the house and outbuildings through the years.

Common nails were the most popular type of nail being used at the site. Since it is such an all-purpose nail, and is used for so many carpenter activities, that is not a surprise. Only 14% of the nails could be identified with the construction activities of the Moore family. Most were from Feature 27, the large burned nail deposit, which is probably related to the house additions of 1900-1901. To differentiate nail use in the gold rush era from that in later times, the deposits connected with the Kirmse and Moore families could be used. A total of 1,379 identifiable nails were found in the Kirmse dump and privy, while only 559 were found in the Moore dump and privy. The percentages of nail types were similar, however: common nails constituted 85% of the gold rush era nails and 78% of the Kirmse nails; box nails constituted 13% of the gold rush era nails, and 11% of the later nails. Almost no specialized nails were found in the gold rush deposits, a time when people might have made do with whatever type nails were available.

Table 10 summarizes the nails by deposit and size. The total number of nails that could be sized was 3,080, more than 1,000 less than could be identified as to type. That is because corrosion eats away at the nail shafts, while leaving the head in an identifiable condition. The most common nail size was 8D (22%). The small 2D nails often deteriorated into unidentifiable fragments, and may be underrepresented in the sample. The Kirmse privy continued to have a great variety of nails. It contained the highest percentage of 2D-3D and 7D nails and also had the most spikes.

Table 11 compares the nails found in the gold rush era Moore dump and privy with the later deposits by the Kirmse family in their dump and privy. Definite differences do emerge. While both deposits contained high percentages of nails used for finish carpentry projects, the gold rush deposits show a definite bias toward new construction projects. This is an expected result and reflects the extensive building and remodeling work done by the Moore family from 1896, when they moved permanently to the property, until they completed their home remodeling in 1901.

Table 12 identifies the types of nails by size and type. The total number of nails is even less than that in table 11 since an even smaller number of nails could be identified to both size and nail type. Looking at the "size by type" table, the 2D size nail had the smallest percentage of common nails. Other nail sizes are dominated by common nails, especially the 9D and 12D. In the "type by size" table, the majority of box and common nails (61% and 58%, respectively) were 6-9D in size. Roofing nails generally ranged from 2-5D, as expected.

**Table 9 - Identifiable Nails by Type**

	Box	Common	Roofing	Fine/ Finish	Masonry	Double	Spike	Totals
1985 DIST	39	180	8	9	3	2	0	241
POST-1940	252	290	29	49	4	5	1	630
1940 TREN	162	279	13	96	2	0	0	552
PRE-1940	42	150	20	0	18	1	0	231
PRE40 TRN	0	0	0	0	0	0	0	0
KIRM DUMP	68	337	6	25	4	0	4	444
KIRM DMP2	5	202	4	14	0	0	1	226
KIRM PRIVY	75	543	4	72	0	0	15	709
MH SHED	115	237	12	29	1	0	7	401
MOOR PRIVY	3	4	0	0	0	0	0	7
MOOR DUMP	71	471	2	8	0	0	0	552
MOORE STR	4	44	0	2	0	0	0	50
SW YARD	7	45	0	2	0	0	0	54
BDWALK	17	58	3	4	0	1	0	83
<b>TOTALS</b>	860	2,840	101	310	32	9	28	4,180
<b>TOTALS (%)</b>	21%	68%	2%	7%	1%	0%	1%	

(continued) Table 9 - Identifiable Nails by Type

	Box	Common	Roofing	Fine/ Finish	Masonry	Double	Spike	Totals
1985 DIST	5%	6%	8%	3%	9%	22%	0%	6%
POST-1940	29%	10%	29%	16%	13%	56%	4%	15%
1940 TREN	19%	10%	13%	31%	6%	0%	0%	13%
PRE-1940	5%	5%	20%	0%	56%	11%	0%	6%
PRE40TRN	0%	0%	0%	0%	0%	0%	0%	0%
KIRM DUMP	8%	12%	6%	8%	13%	0%	14%	11%
KIRM DMP2	1%	7%	4%	4%	0%	0%	4%	5%
KIRM PRIVY	9%	19%	4%	23%	0%	0%	53%	17%
MH SHED	13%	8%	12%	9%	3%	0%	25%	10%
MOOR PRIVY	0%	0%	0%	0%	0%	0%	0%	0%
MOOR DUMP	8%	17%	2%	3%	0%	0%	0%	13%
MOORE STR	0%	2%	0%	1%	0%	0%	0%	1%
SW YARD	1%	2%	0%	1%	0%	0%	0%	1%
BDWALK	2%	2%	3%	1%	0%	11%	0%	2%
<b>TOTALS</b>	100%	100%	100%	101%	100%	100%	101%	100%

Table 10 - Identifiable Nails by Nail Size

	2D	3D	4D	5D	6D	7D	8D	9D	10D	12D	16D	>20D	SPIKE	TOTALS
1985 DIST	7	11	9	11	20	4	30	14	21	10	15	12	0	164
POST-1940	9	29	40	21	102	20	83	32	17	8	5	49	1	416
1940 TREN	10	13	34	18	54	25	88	19	24	4	4	9	2	304
PRE-1940	2	3	21	17	34	12	37	19	12	5	1	10	0	173
PRE40TRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KIRM DUMP	11	28	28	40	68	30	75	51	7	18	2	24	3	385
KIRM DMP2	1	3	6	3	19	11	25	7	17	1	1	6	0	100
KIRM PRIVY	21	55	33	30	91	49	118	93	19	8	2	66	20	605
MH SHED	6	13	28	18	76	10	78	25	21	5	0	23	7	310
MOOR PRIVY	0	0	0	0	2	0	2	0	0	1	0	1	0	6
MOOR DUMP	1	3	13	28	25	17	125	122	17	29	3	88	0	471
MOORE STR	1	1	3	2	4	2	3	1	4	3	0	7	0	31
SW YARD	0	0	0	0	0	0	18	3	22	4	0	2	0	49
BDWALK	4	2	2	1	13	4	9	7	7	3	12	2	0	66
TOTALS	73	161	217	189	508	184	691	393	188	99	45	298	34	3,080
	2%	5%	7%	6%	16%	6%	22%	13%	6%	3%	1%	10%	1%	



(continued) Table 10 - Identifiable Nails by Nail Size

	2D	3D	4D	5D	6D	7D	8D	9D	10D	12D	16D	>20D	SPIKE	TOTALS
1985 DIST	10%	7%	4%	6%	4%	2%	4%	4%	11%	10%	33%	4%	0%	5%
POST-1940	12%	18%	18%	11%	20%	11%	12%	8%	9%	8%	11%	16%	3%	14%
1940 TREN	14%	8%	16%	10%	11%	14%	13%	5%	13%	4%	9%	3%	6%	10%
PRE-1940	3%	2%	10%	9%	7%	7%	5%	5%	6%	5%	2%	3%	0%	6%
PRE40TRN	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
KIRM DUMP	15%	17%	13%	21%	13%	16%	11%	13%	4%	18%	4%	8%	9%	13%
KIRM DMP2	1%	2%	3%	2%	4%	6%	4%	2%	9%	1%	2%	2%	0%	3%
KIRM PRIVY	29%	34%	15%	16%	18%	27%	17%	24%	10%	8%	4%	22%	59%	20%
MH SHED	8%	8%	13%	10%	15%	5%	11%	6%	11%	5%	0%	8%	21%	10%
MOOR PRIVY	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
MOOR DUMP	1%	2%	6%	15%	5%	9%	18%	31%	9%	29%	7%	29%	3%	15%
MOORE STR	1%	1%	1%	1%	1%	1%	0%	0%	2%	3%	0%	2%	0%	1%
SW YARD	0%	0%	0%	0%	0%	0%	3%	1%	12%	4%	0%	1%	0%	2%
BDWALK	5%	1%	1%	1%	3%	2%	1%	2%	4%	3%	27%	1%	0%	2%

**Table 11 - Identifiable Nails, Gold Rush and Post-Gold Rush Eras**

<b>Nail Function</b>	<b>Gold rush</b>	<b>Post-gold rush</b>
Non-structural (2-5D)	45	518
Finish carpentry (6-9D)	293	637
Framing, stud walls (10-16D)	50	75
Heavy framing (>20D)	89	119
Totals	477	1,349
Non-structural (2-5D)	9%	38%
Finish carpentry (6-9D)	61%	47%
Framing, stud walls (10-16D)	11%	6%
Heavy framing (>20D)	19%	9%

**Table 12 - Identifiable Nails by Size and Type**

	2D	3D	4D	5D	6D	7D	8D	9D	10D	12D	16D	>=20D	TOTALS
Box	11	51	67	68	167	47	117	21	14	4	4	12	583
Common	28	83	96	86	253	113	503	353	160	88	38	283	2,084
Brad/Casing	0	0	0	1	1	0	0	0	1	0	0	0	3
Fine/Finish	2	7	1	11	80	18	59	9	5	3	0	0	195
Masonry	0	0	1	1	0	2	2	1	2	0	0	0	9
Roofing	26	18	26	21	1	1	1	0	1	0	0	0	95
<b>TOTALS</b>	67	159	191	188	502	181	682	384	183	95	42	295	2,969
<b>Percentage of Size by Type</b>													
Box	16%	32%	35%	36%	33%	26%	17%	5%	8%	4%	10%	4%	
Common	42%	52%	50%	46%	50%	62%	74%	92%	87%	93%	90%	96%	
Brad/Casing	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	
Fine/Finish	3%	4%	1%	6%	16%	10%	9%	2%	3%	3%	0%	0%	
Masonry	0%	0%	1%	1%	0%	1%	0%	0%	1%	0%	0%	0%	
Roofing	39%	11%	14%	11%	0%	1%	0%	0%	1%	0%	0%	0%	
<b>Percentage of Type by Size</b>													
Box	2%	9%	11%	12%	29%	8%	20%	4%	2%	1%	1%	2%	
Common	1%	4%	5%	4%	12%	5%	24%	17%	8%	4%	2%	14%	
Brad/Casing	0%	0%	0%	33%	33%	0%	0%	0%	33%	0%	0%	0%	
Fine/Finish	1%	4%	1%	6%	41%	9%	30%	5%	3%	2%	0%	0%	
Masonry	0%	0%	11%	11%	0%	22%	22%	11%	22%	0%	0%	0%	
Roofing	27%	19%	27%	22%	1%	1%	1%	0%	1%	0%	0%	0%	

## Hardware

Hardware includes various kinds of fasteners, as well as structural hardware for doors or windows. Brackets or bracing that was functional and not decorative was also included. Stanchions and rebar were included together since they were so similar. All dowels were wood, but two were just fragments. No hardware was recovered from the pre-1940 utility line trenches, or from the ca. 1897-1900 privy.

The post-1940 strata and southwest yard had the highest quantities of hardware and fasteners. Of the 67 screws recovered in the excavations, 48 (72%) were flat-headed, slotted wood screws. Seven had domed heads, and four were eye screws. None was a Phillips screw that would have post-dated 1938. Three were brass screws, two with round heads. Screws were the most numerous type of fastener found. Most were found in the southwest yard, the 1940s builder's trench, the Kirmse dump, and the post-1940 strata. The staples found were extremely varied in size and thickness. Five were less than an inch long, several of which were found in unit 125N86E and may have been from the 1898 fence that used to be in that area. Eight were between one and two inches long; five were found in the Kirmse dump area in units 139N92E and 139N95E. Almost all the tacks were found around the perimeter of the house, in units on the south, east, and west sides.

Bolts were also found in almost every deposit. Machine bolts were identified in the post-1940 strata, the Southwest yard and the 1985 disturbed area. Carriage bolts were also found in the Southwest yard, the pre-1940 strata, and in the second Kirmse dump, in the same area as the 1985 disturbance. Eyebolts were recovered from the 1940s builder's trench, and in the pre-1940 strata. The highest quantities of bolts were found in the post-1940 strata and the Kirmse privy. Washers, sometimes associated with the bolts, were mostly found in the post-1940 strata and the southwest yard, although some were also found in the Kirmse dump.

Tables 13 and 14 have numbers as abbreviations for the database names so that the tables will fit on one page. They are arranged in order similar to the previous artifact tables.

1	=	1985 Disturbance
2	=	Post-1940
3	=	Trench 1940
4	=	Pre-40 Trench
5	=	Pre-1940
6	=	Kirmse dump
7	=	Kirmse dump #2
8	=	Kirmse privy
9	=	Moore dump
10	=	Moore privy
11	=	Moore strata
12	=	Moore House Shed
13	=	Southwest yard
14	=	Boardwalk

Little in the way of hardware was recovered. Most were found in the post-1940 strata, the Kirmse privy, or Shed 1. Two rectangular brackets, 10" x 5" x 1/4", from Shed 1 had holes drilled in each side, but looked unused. None of the recovered hardware was decorative, like the original door and window hardware still used inside the Moore House. One piece of door hardware, from the Kirmse privy, was simply a hand-made handle made out of heavy-gauge (3 ga.) wire bent into loops. One lock-plate did have an elongated keyhole in the center. A decorative external door hinge found in the upper levels of the Kirmse privy had a finial style end and was identified in the 1897 Sears, Roebuck catalog (1968:91) as a "door butt" and sold for 3-9 cents per pair.

A padlock was found south of Shed 1, in Level 1 of 122N110E. It was a large, cast iron padlock with a spring hasp and spring drop over the front keyhole. The lock was heavily corroded, and no manufacturer marks were seen. One large ceiling hook was found (not included in table 13); it was in the Kirmse dump and had a threaded point.

Table 13 - Hardware (in minimum number)

MATERIAL	1	2	3	5	6	7	8	9	11	12	13	14
<b>FASTENER</b> (n=180)												
bolt	2	7	2	2	1	1	6	1	0	3	2	0
dowel	0	1	0	0	0	0	0	2	0	1	0	0
nailcap	0	1	0	0	0	0	0	1	0	1	0	0
nut	0	3	1	3	0	0	0	0	0	4	0	2
rebar/ stanchion	1	0	0	0	0	0	1	0	1	0	0	0
screw	2	9	10	5	9	2	7	4	1	13	0	4
staple	0	1	2	0	7	1	4	0	0	0	0	0
tack	0	2	6	1	1	0	0	0	1	0	0	0
washer	0	17	1	0	2	0	0	0	0	13	3	0
Subtotals	5	41	22	11	20	4	18	8	3	35	5	6
Subtotals (%)	3	23	12	6	11	2	10	4	2	20	3	4
<b>HARDWARE</b> (n=16)												
bracket	0	1	0	0	0	1	1	0	0	2	0	0
door hardware	0	1	0	0	0	0	1	0	0	1	0	0
hinge	0	2	0	0	0	0	3	0	0	0	0	0
hook	0	0	0	0	1	0	0	0	0	0	0	0
latch	0	0	0	0	0	0	0	0	0	1	0	0
padlock	0	1	0	0	0	0	0	0	0	0	0	0
Subtotals	0	5	0	0	1	1	5	0	0	4	0	0
Subtotals (%)	0	31	0	0	6	6	31	0	0	25	0	0
<b>TOTALS</b>	5	46	22	11	21	5	23	8	3	39	5	6
<b>TOTALS (%)</b>	3	24	11	6	11	3	12	4	2	20	3	3



## Materials

Structural materials recovered from the excavations included wood, brick/mortar/concrete, asbestos, asphalt siding/shingles, tar paper, flashing, insulation, paint chips and linoleum. Asbestos is found as tiles and in wallcoverings in every excavation conducted thus far in Skagway, an evidence to the popularity of this fire-retardant material before its life-threatening properties were realized. Most was recovered from the area south of Kirmse dump #2, where the 1985 utility line disturbed Feature 32. The most common building materials present were small, brick fragments, mostly from common red bricks, and lumber of one kind or another. The area of the former shed in the southwest yard contained a significant amount of common brick, cement, and mortar. There was no evidence in any photo or Sanborn map that this building contained any brick, although it is possible that a brick floor might have been laid at one time. The two standing sheds, however, both have wood or dirt floors. A more likely possibility is that the bricks and concrete are from the destruction of the Roman Catholic manse that stood about 20 feet west of the site or from fill brought in to level the yard.

The majority of the non-wood materials were found close to the house, where most of the Kirmse remodeling work took place. Thousands of small fragments of the red asphalt siding were found there. The siding covered the house from about 1940 until 1981 (Blee et al. 1983:285-286). Tar paper and shingle fragments were also abundant close to the buildings.

Linoleum fragments were often large and had patterns that are still identifiable. They matched patterns already curated by the park, one of which was used as a model for the floorcovering in the reconstructed kitchen. Most of the linoleum was found in both the Kirmse-era dumpsites and are probable leftovers from their remodeling efforts in the early 1900s. Linoleum was invented by Frederick Walton of England, where he applied for a patent for his process that exposed linseed oil to air and hardened it (Edwards 1996:155). By the first half of the twentieth century, linoleum dominated the

floorcovering industry, and its appearance here should not be surprising. By 1910, linoleum was commonly used in halls, landings, and kitchens (Edwards 1996:168).

In table 14, the wood that was identifiable is classified into type. The wood weight rather than the number of fragments is used because building materials tend to be so fragmented. Many wood fragments could be identified no further than “handcut” or “milled.” Some of the figures for wood are somewhat misleading, since not all wooden features (such as Feature 23 in the Kirmse dump) were recovered and taken to the lab, and thus are not a part of the analytical databases. It was assumed that the handcut wood would have been in the earlier deposits, but 15% was in the post-1940 era and may have represented occasional patching and repairs to the house. Some of the wooden walkway (Feature 34) was recovered and comprised the highest quantity of the wood taken to the laboratory. Other areas where substantial wood was recovered was from both privy deposits — the early Moore privy and the later Kirmse privy. Because 70% of the handcut wood was found in the 1985 utility line work, it must have disturbed part of one of the early wooden features, possibly the missing southern half of Feature 32. The high amounts of brick and wood, and various kinds of nails, from the Kirmse privy make this a likely site for not only the dismantling of the privy superstructure, but also some other building construction episode of the Kirmse family. Often, the wood that was collected was extremely deteriorated, and little could be discerned about its function.

Wood was used in so many building activities: the house itself, sheds, fences, boardwalks, and many miscellaneous accoutrements, such as animal houses. It should be no surprise that we find wood well-represented across the property, except for the 1940 builder’s trench and the Kirmse dump (although Feature 23 was a wooden floor, little of that wood was saved). Wood shingles were only found in the Moore privy deposits.

**Table 14 - Types of Wood Recovered (in grams)**

MATERIAL	1	2	3	5	6	7	8	9	10	11	12	13	14
handcut	57	13	0	0	0	7	5	0	0	0	0	0	0
milled	775	47	47	135	9	220	292	3	708	14	0	66	4
milled, w/paint	23	0	0	0	0	31	14	0	0	0	0	0	0
trim, w/paint	7	1	0	55	0	2	2	0	0	0	4	0	1
trim	280	13	0	18	2	4	10	93	243	215	10	0	0
siding	.3	0	0	0	0	0	821	0	0	0	0	0	0
veneer	0	0	0	0	0	0	0	0	0	0	39	0	0
post	0	0	0	0	0		54	158	0	0	0	0	0
fencepost	0	0	0	55	0	0	0	0	0	0	0	5	0
walkway	0	0	0	0	0	0	0	0	0	0	0	0	1558
Totals	1142	74	47	263	11	264	1198	254	951	229	53	71	1563
Totals (%)	19	1	--	4	--	4	20	4	16	4	1	1	26

## Utilities

At the Moore/Kirmse house site, there was abundant evidence of present and past utility lines for water intake and disposal and disposal of sewage waste into both an on-site cesspool and, later, into the public sewer system. In our analytical databases, however, this information does not always appear. The pre-1940s water line trenches found north and south of the house were wood-staved channels that contained water pipes. These, however, were left in the ground and do not appear as part of our databases. Nor did we remove any of the larger sewer and water pipes installed later. Thus, the databases often underrepresent the evidence of plumbing lines that did exist on the site.

Even so, the most abundant class of utility artifacts were those related to plumbing (n=20). The only areas that lacked any plumbing remains were those in the southwest yard, the west yard between the house and the cabin, or below the floor of Shed 1. In the

Kirmse privy were a female galvanized pipe fitting (130N116E, Level 3) and a galvanized, 15" long, 1" diameter water pipe (128N118E, Level 6). There was no apparent damage to either part.

Three .6-.9 cm diameter metal tubes (one a copper alloy metal) appeared to possibly have been from a propane line. Two were found north of Shed 1, both close to the surface (140N110E, Level 2, 141N98E, Level 1). The non-ferrous metal tube also had a domed cap and was found just to the east of the house, in Level 2 of 125N86E. It could possibly be part of the electric line box put there by the electric company.

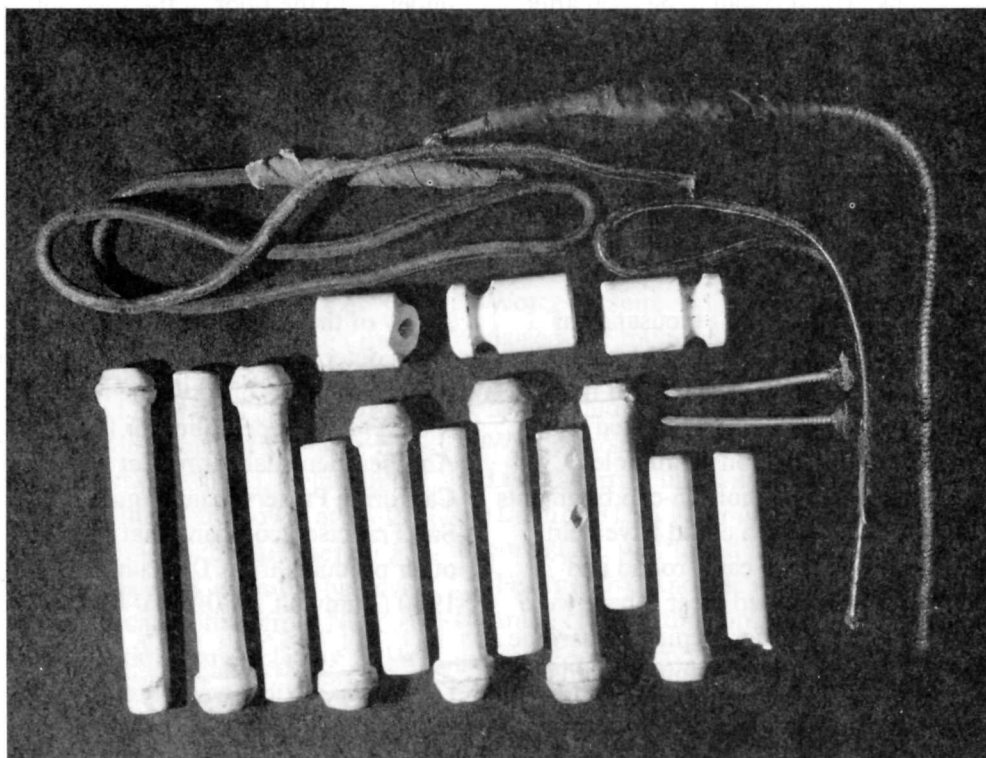
Most of the evidence for the use of electricity was in various gauges and types of wire from exterior electric lines and the insulating material (usually rubber) put over these wires and cables (total n=36). A few, small porcelain insulator and tube fragments were also recovered, but many more remained on the

were also recovered, but many more remained on the interior walls of the house. Figure 45 illustrates some of the connectors that were removed from the house walls when restoration work began. Twelve whole or fragmented "standard porcelain" wiring insulators were identified. They were found all over the site, but the majority was found beneath the floor of Shed 1. Four were porcelain insulator tubes, while others were the small, round porcelain cleats or knobs. Ceramic insulator or knob fragments found near the shed in the southwest yard (81N15E, Feature 2 and Level 3) and in the Moore dump confirm that the Moore House had electrical connections from an early date. Photographs from inside the house ca.1904 show electric light bulbs in a parlor light fixture. Few identifying marks were found on any of the porcelain connectors. One porcelain tube, the only one found in the Kirmse privy, was incised with an E, and could be from the East Liverpool (Ohio) Electrical Porcelain Company. Another fragment, from Shed 1, was designated "3 amp". One split knob connector, found in subquadrant Q4-5 of Shed

1, close to the door, had manufacturer and patent information on it: PAT FEB 1920. The manufacturer was Brunt Porcelain Company of East Liverpool, Ohio, taken over by the G.E. Company in 1930 (Lehner 1988:60, 582). According to the patent, its purpose was to support the base of the "new code" spit knob porcelain fixture.

## FOOD-RELATED ARTIFACTS

Food-related artifacts consist of five identifiable classes, plus a category for artifacts that could be identified as food-related, but not identifiable for a specific function. The category is designed for the identification of food and beverages prepared and consumed at the household level, in a non-business setting. The classes are: food storage, food preparation, food serving, food remains, beverage containers, and unidentifiable. Appendixes 4 and 5 contain a summary of food-related artifact distribution, by fragment count and by minimum number count.



**Figure 45.** *Photo of electrical connectors from the Moore/Kirmse house.*

## Food Storage

Food storage artifacts at this site generally consisted of tin cans, a few whole but mostly fragments; food wrappers; storage crocks, whole and fragmented; and parts of canning equipment — lids, gaskets, and jars. The 3,191 fragments represented a minimum of 249 vessels. The change in the food industry to different packaging methods can be seen in the post-1940 deposit where various kinds of synthetic food wrappers are predominant. Few cans could be identified beyond basic information, although an attempt was made to determine the volume and standard size of tin cans to ascertain the type of contents. An argument could also be made that most tin cans represent food remains, and should be placed in that category. But it would be difficult to estimate the volume of food consumed in tinned containers when so much of the sample is in tiny fragments. It should be kept in mind, however, that although these cans stored food, most were deposited on this site after they had been opened and the contents consumed.

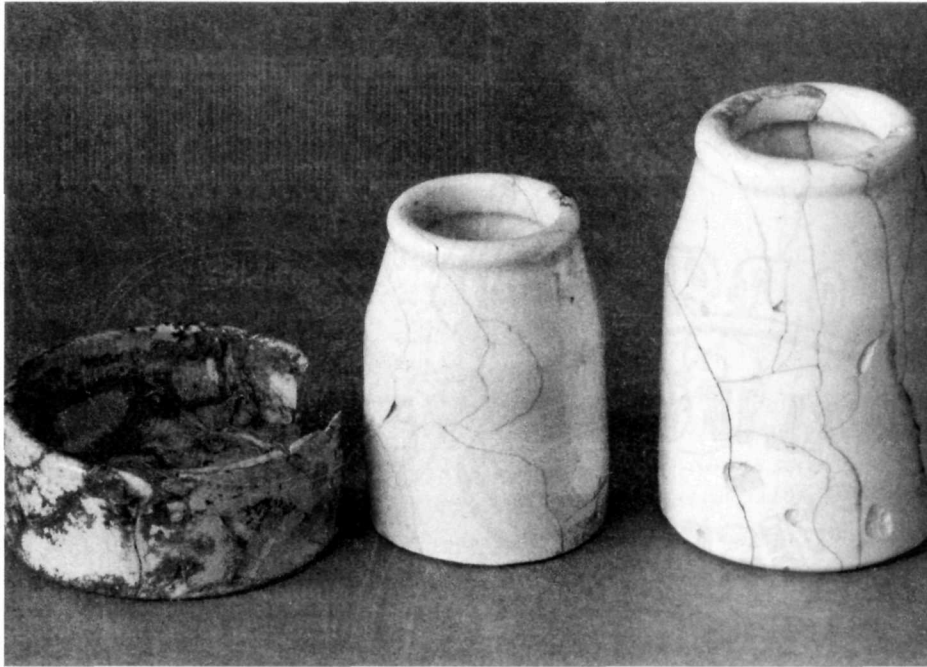
Most of the food storage artifacts came from the Kirmse dump, specifically from Feature 23. Its longevity is indicated by the switch from hole-in-cap cans to sanitary cans, which began to be used after 1906. The use of hole-in-cap cans declined rapidly during the 'teens, but some hole-in-cap cans continued to be manufactured through the 1920s. Also interesting is the second Kirmse dump — very little in the way of food remains seems to have been discarded there, reinforcing the idea that it is more of a special purpose dump.

Feature 23 consisted of a matrix of thousands of small, broken, unidentifiable tin can fragments, none of them whole cans. The 2,000 unidentified fragments in appendix 4 are merely an estimated count. Several cans held liquid, based on small holes punched in the can lid. Fifteen hole-in-cap fragments were "matchstick fillers," which could have held evaporated milk. At least three cans, round and oblong, held some kind of potted meat. There were also at least six cans of small fish, typical of sardine cans. Only one roll-key opener was found in this dump.

Several glass food storage jars, and accouterments, were also found in the Kirmse dump. One milkglass liner was marked with the [GENUIN]E BOYD mark, two others were unmarked. Colorless glass canning jar fragments from several different vessels were clarified with manganese or selenium. Other selenium-clarified canning jar fragments were found in stratum 1, the post-1940 deposits, in various locations near the dump. A 32-ounce jar had embossing on several fragments — MA.../LIN/...SE/NEW ... / QUART 32 OZ. — that could not be further identified. When we removed the floor of the shed, we found complete or nearly complete canning jars below. One finish had a lightning-style closure, while another aqua jar had a tooled finish and was similar to a ca. 1903-1904 Economy or Everlasting non-threaded jar (Creswick 1987:50, 52). Canning jar fragments found in the Moore privy differed from those found elsewhere. One fragment was from a green, frosted jar embossed with ...T//ET/[embossed oval]. Another glass jar had a screw top with a ground lip.

Ceramic food-storage containers were found in both the Moore and Kirmse dump strata, as well as underneath the floor of the shed south of the dump. These were small crocks, in several sizes (ca. 1-3 oz.), that can be seen on the right side of figure 46. We saw no markings besides numbers pressed into the bases of the crocks. It is believed these small crocks contained some kind of dairy product, such as butter or cream, and may have been sealed with a cork stopper.

A few of the artifacts found below the floor of Shed 1 had deteriorated less than those outside, and more information was observable. A rectangular can still had a yellow paper label for Lipton's Ceylon Tea. Another identifiable product was part of a Long's California Preserves jar (figure 47). Long's was a San Francisco company that marketed preserves and other products from 1896 until it changed names in 1930 (Zumwalt 1980:282).



**Figure 46.** *Photo of small ceramic crocks from dumpsite.*

## Food Preparation

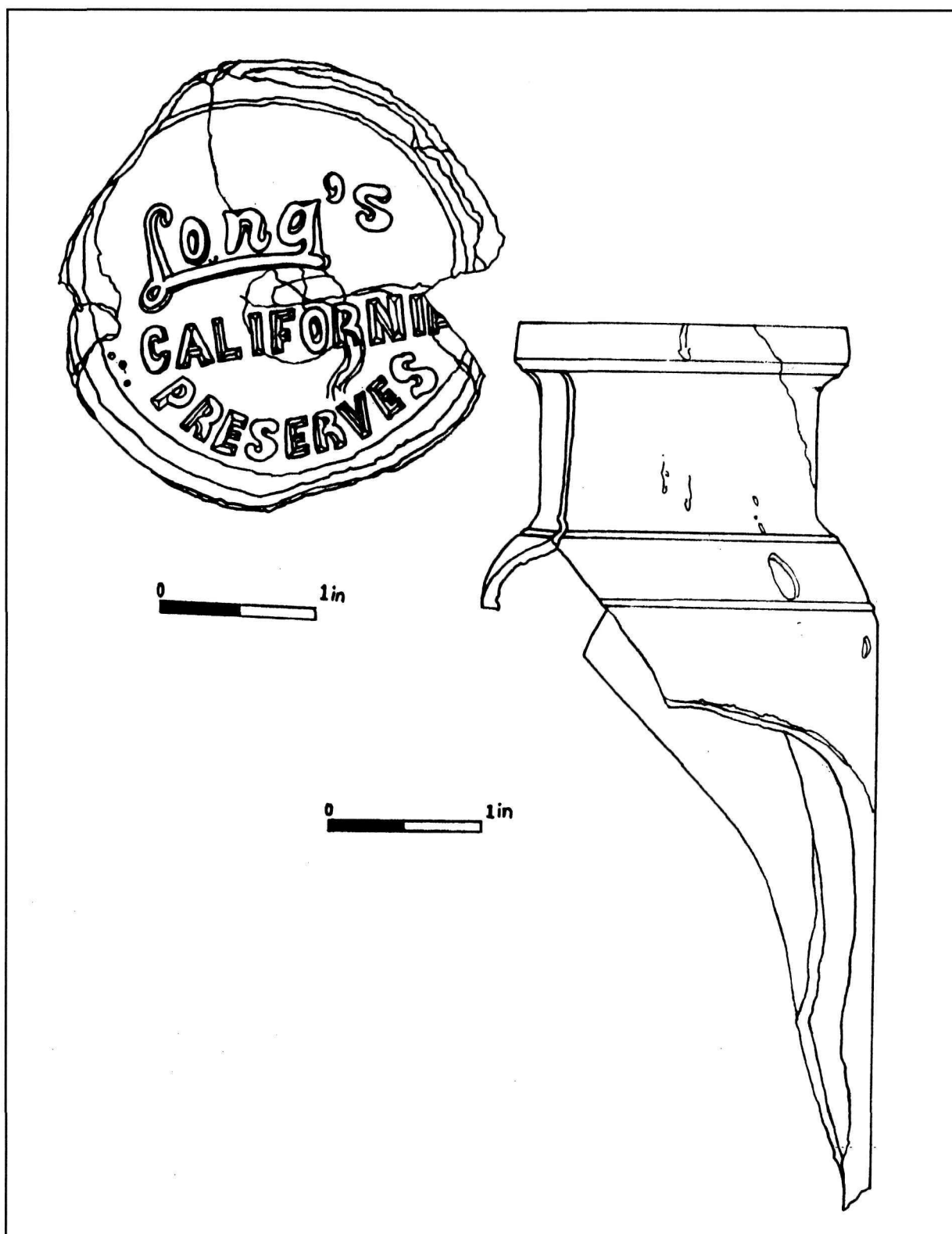
Food preparation artifacts mainly consisted of pots and pans, utility bowls, and the many condiments used to enhance food. Only 80 fragments could be classified in this category, and they represented a minimum of 37 vessels. Again, most of these artifacts (27%) came from the large Kirmse dump that seems to have been the main area for kitchen refuse. Condiment bottles (35%), bottle caps (22%), and utility crockery bowls (14%) made up the bulk of the deposit.

Most of the crockery was broken fragments of yellowware bowls. There were never enough fragments to attempt a cross-mend. These molded bowls were of various sizes, had a clear alkaline glaze, and several were decorated with white slip annular rings. No manufacturer's marks were found. Ketchum (1983:218) notes that "yellowware bowls are seldom marked, and it is usually impossible to determine the maker of an individual piece." Generally, however, they were made by American potters from New England to the Mid-Atlantic from the 1840s to the 1940s. In 1896, the Syracuse (New York) Stoneware Company advertised yellowware bowls in sizes from  $\frac{1}{2}$  pint to three gallons, and prices ranged from 40¢-\$3/dozen (Ketchum 1983:217).

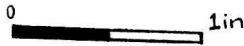
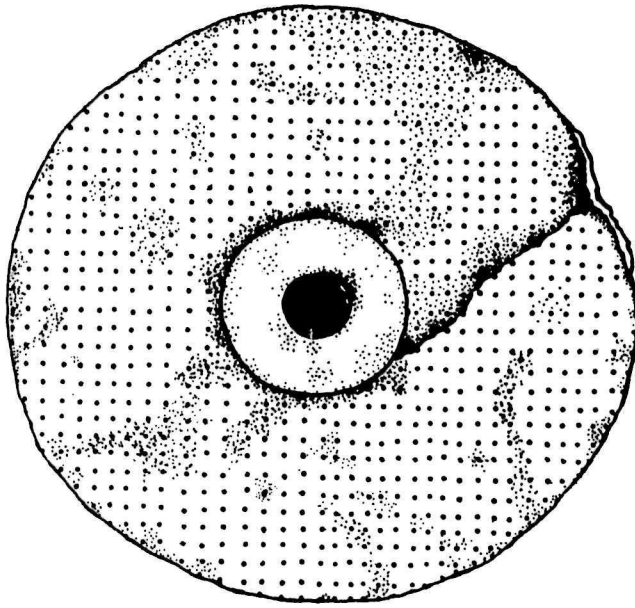
Also found in Shed 1's mixed deposits were some of the very few cast iron pot fragments recovered from this site, although the type of pot was not identifiable. A copper alloy coffeepot filter was found close to the shed, in the Kirmse privy (figure 48). Only one real "tool" was found — the handle for a cheese cutter was found in the general "dump" area (139N95E); but it was found in Level 1, placing it in the post-1940 date range.

Bottles or jars that once held condiments such as Worcestershire sauce, mustard, ketchup, and mayonnaise were found in the dumps, the privy, and the shed. Several Worcestershire bottle or bottle parts were found in Feature 23. One was an aqua glass Worcestershire "club sauce" bottle stopper made by Lea & Perrins that was manufactured ca.1888-1929 (Lunn 1981:3). A similar stopper, but with an intact cork shaft, was found in the earlier Moore dump (Feature 26). Another was found in general pre-1940 strata, close to the Kirmse dump. In the base of the early Moore privy a complete mustard barrel jar, made of colorless SCA glass, had no identifying markings. The mustard barrel jar is most closely associated with Charles Gulden, of New York, but by the turn of the century a plethora of manufacturers





**Figure 47.** Drawing of Long's California Preserves glass jar. Catalog No. 36475 (MH Shed, Q3-01). Drawing by April Hayes.



**Figure 48.** Drawing of copper coffee filter from Kirmse privy. Catalog No. 33535 (130N116E, Level 3). Drawing by April Hayes.

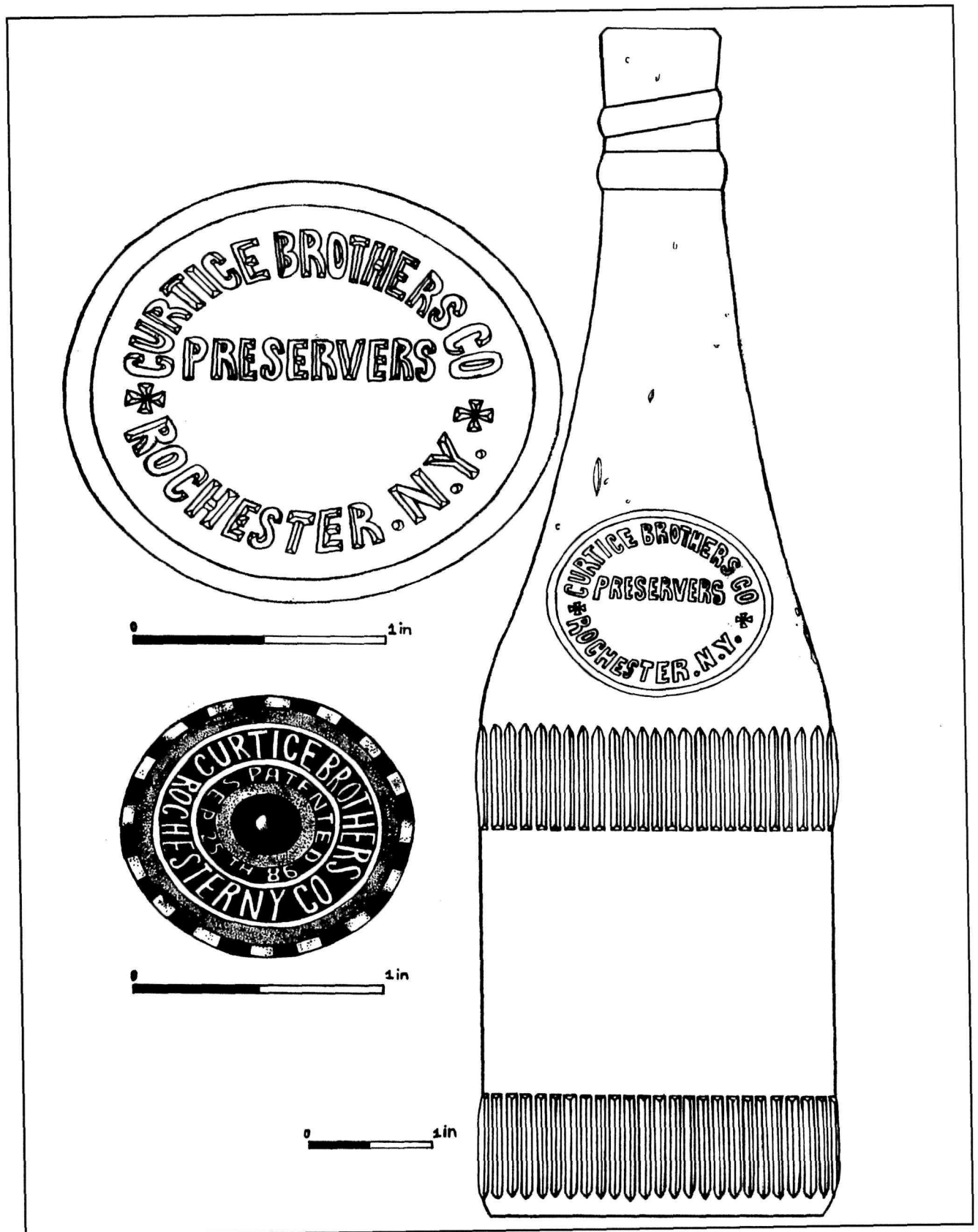
were producing this type of jar (Zumwalt 1980:188, 448). A complete ketchup bottle (in Feature 23) was manufactured by Curtice Brothers, of Rochester, New York, and retained its screw top lid (figure 49). The metal lid still bore a patent date of February 25, 1886. Curtice Brothers marketed this bottle for their "Blue Label Tomato Ketchup" from 1888-1929 (Zumwalt 1980:101). The base of a 6-10 oz. colorless glass bottle from the Kirmse Dump #2 had a fluted heel, almost identical to the Curtice Brothers bottle in Feature 23. In the shed was a grey metal bottle seal embossed with: SNIDER'S/HOME-MADE/CATSUP. An incomplete, selenium-clarified colorless, 7-15-ounce bottle had a partial manufacturer's mark on the base (S in a triangle). Manufactured by Ben Schloss Manufacturing Co. of San Francisco (post-1910) (Toulouse 1971:456) for California growers and packers, it also might have held ketchup. A Best Foods Mayonnaise threaded jar lid with wax paper lining was for a 32-ounce jar and probably was a more recent intrusion below the shed's floor.

One complete, five-ounce, cylindrical apple green bottle, and fragments from another, was 6" high, with a 1" wide mouth. It was found in Feature 23

and may have held olives, relish, or a similar product. Apple green is not a usual color for culinary vessels, but they were sometimes used. A few examples can be seen on the dust cover for *Bottles on the Western Frontier* (Wilson 1981). Condiment bottle caps varied from recent, snap-on plastic closures to crown caps that were too small to have been from a beverage bottle.

### Food Serving

Food serving artifacts at the Moore House mostly consist of ceramic serving dishes, glass drinking glasses, and serving flatware. One fairly well-preserved enamelware bowl was found below the floor of Shed 1, probably the only reason it could be identified since most enamelware in Skagway archeological deposits has rusted into unidentifiable fragments. In the more recent deposits, Styrofoam cups and serving ware were also found. Appendixes 4 and 5 summarize those artifacts by fragment and minimum vessel counts. Seventy-eight percent of the identified vessels consisted of ceramic food dishes, 14% was some kind of glassware, and serving flatware comprised 5% of the total vessels.



**Figure 49.**

*Drawing of Curtice Brothers ketchup bottle. Catalog No. 34381 (142N98E, Feature 23). Drawing by April Hayes.*

In terms of where the greatest quantity of fragments was from, 45% of all the food serving artifacts was found in the Kirmse dump and 20% in the Kirmse privy. When minimum number of vessel counts are used, the Kirmse dump (30%) and privy (10%) only account for 40% of the food serving artifacts. Ceramic “dishes” are subdivided into the categories of whiteware, ironstone/graniteware (a highly vitrified whiteware popular in the late nineteenth century), stoneware, and porcelain. They are further subdivided by decorative types. Most of the ceramics were also found in the Kirmse dump (45% frag, 30% MNV) and privy (20% frag, 10% MNV).

Cross-mending of some ceramic vessels was undertaken to determine what, if any, artifact scattering had occurred across the site. There were also some ceramic pattern matches, both across the site and with other ceramics found in Skagway excavations. Most of the cross-mends were found in the Kirmse dump area, and many were from the same level. Others, however, spanned vertical elevations or were from different areas of the Moore House yard. Especially in the dump area, there were many ceramic fragments from the dump mixed into the more recent, post-1940 topsoil layer. Levels 1-3 of 142N98E and Levels 2-4 of 145N98E each had many ceramic cross-mends and pattern matches. In the Moore privy, a ceramic vessel from Level 10 mended with one in Level 11. Ceramics manufactured by W. H. Grindley from 1914 until 1925 were found in several areas of the Kirmse privy. In the other areas of the yard, no cross-mends or pattern matches were found except in the 1988 unit south of the house, where part of a ceramic vessel from the recent strata, levels 3-4 of unit 89N81E, cross-mended.

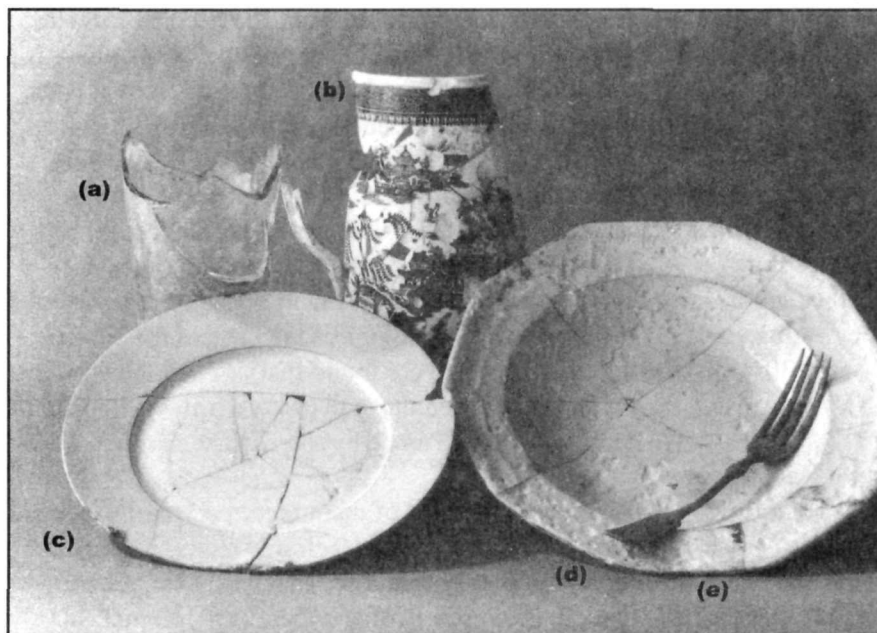
Artifacts along the north wall of Shed 1, such as 140N110E, cross-mended both with artifacts from Feature 23 in the dump area and with ceramics that washed underneath the floor of Shed 1, such as in Feature 35. Adjacent units, such as 125N86E and 125N91E, had many matches and mends. Level 1 of Feature 39 and Level 4, both in unit 139N92E, were found to have contemporaneous ceramics. The most spectacular cross-mend was a quart-size whiteware transferprint pitcher, manufactured by C.T. Maling & Sons (figure 50). Found in hundreds of fragments, its distinctive cobalt “Oriental” pattern was easily identifiable. Although the bulk of the pitcher was

found in unit 142N98E of the Kirmse dump, other fragments were found in units 139N95E, 125N86E, and even south of Shed 1, in the boardwalk area of unit 122N110E. Based on the ceramic cross-mends, it seems that movement of artifacts across the site was fairly restricted to the area of the dump. Since the dump was also located in an area subject to occasional flooding, the occasional movement of ceramic fragments south and southwest does not seem unusual. This movement does not seem to have disturbed the chronological layering of the site since no cross-mends were found that crossed the arbitrary divisions between those deposits made by the Moore family and those made by the Kirmse family.

Appendix 2 is a list of manufacturers’ marks identified for this project. The ceramic manufacturers are those commonly found on Skagway sites, predominated by Johnson Brothers (England), Homer Laughlin, and Knowles, Taylor & Knowles (“KT&K”) (both of East Liverpool, Ohio). The earliest mark, of an unknown manufacturer, was an 1851 English registry mark impressed into the bottom of a large white ironstone soup bowl, found in Feature 23. Although it had a distinctive, 10-sided shape, it lacked any other decoration (figure 50).

Decoration type for the various ceramics was also correlated with the manufacturer information. Transferprint designs were all monochrome, many lacking tight dating provenience. However, a green floral transferprint saucer, manufactured by Homer Laughlin & Co. between 1890-1900, was found in the Moore dump (figure 51). A monochrome green leaf garland plate or saucer fragment recovered from Kirmse Dump #2 was manufactured by Knowles, Taylor & Knowles in 1904. Various vessels with transferprint designs found at the Moore House are illustrated in figure 51.

Many polychrome fragments of porcelain vessels were found in the Kirmse dump and privy, and many of those were gilt edged. Only three porcelain manufacturers were identified: Karlsbad (which really refers to a region in Bohemia rather than a manufacturer), Philip Rosenthal (from Bavaria), and various entities of the Haviland/Limoges porcelain industry of France. An early Limoges manufacturer was Plainemaison (1890-1910), and an almost complete plate was found in the Kirmse dump (figure 50). Unlike most of the porcelain vessels, this plate

**Figure 50.**

*Photo of tableware from Feature 23, Kirmse dump.*

*(a) Large drinking glass;*

*(b) Whiteware transferprint pitcher manufactured by C.T. Maling & Sons, England, 1891-1908;*

*(c) Porcelain dessert plate manufactured by Plainemaison, France, 1890-1910;*

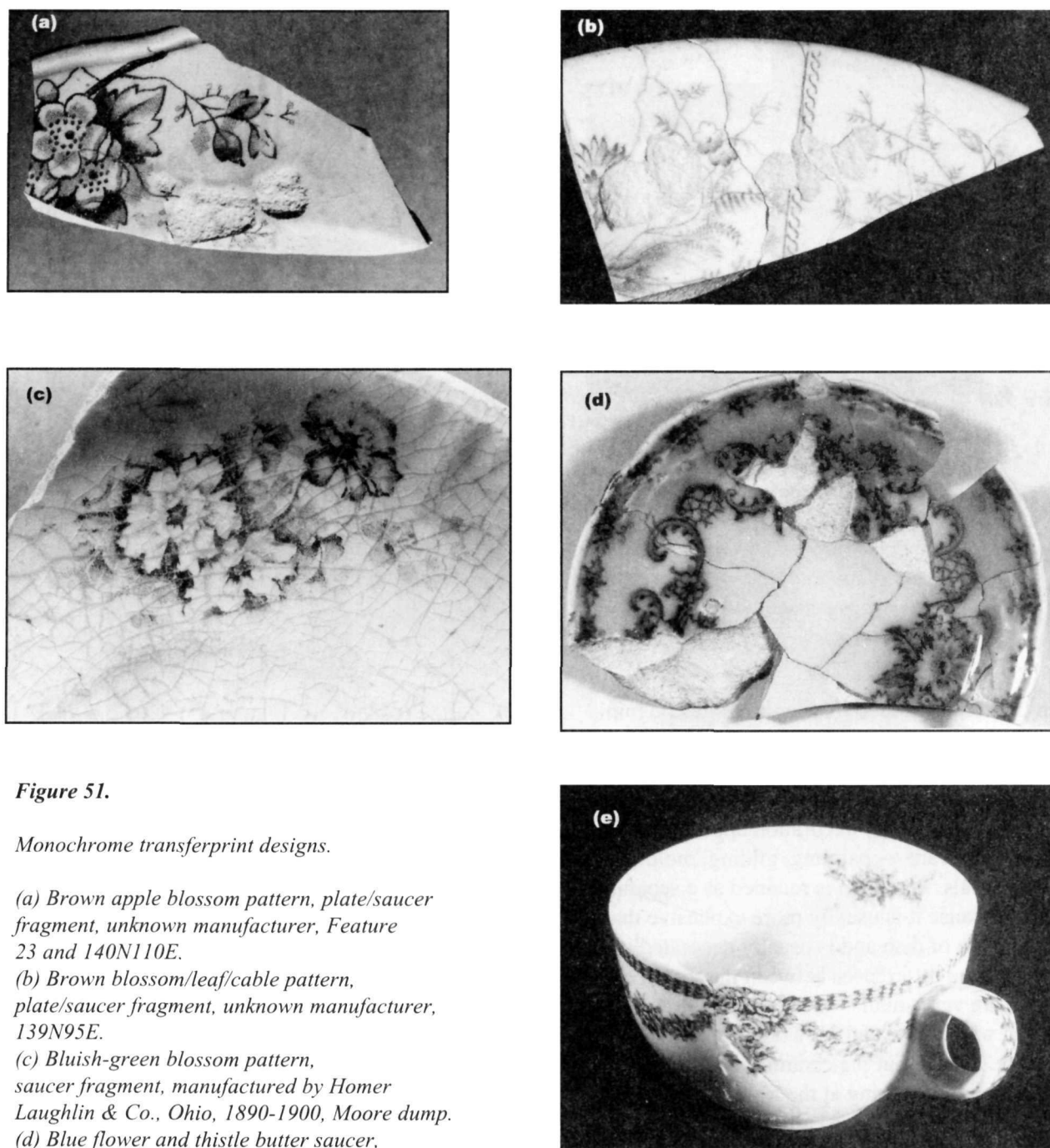
*(d) Ironstone soup bowl, unknown English manufacturer, 1851 registry mark;*

*(e) Fork, manufacturer unknown (Moore dump).*

was very plain — a white base and a wide, pink-glazed rim with gilt edging. Two polychrome, floral-decorated porcelain vessels were manufactured by Haviland & Co. sometime between 1891 and 1930. One was recovered from the Kirmse dump, and the other was found in Kirmse Dump #2. A saucer with a distinctive footring, manufactured by Limoges between 1891 and 1930, was found in the Moore dump deposits. Although it had a gilt rim, other decoration was not seen. The fragmentary Philip Rosenthal saucer is interesting because it contains a second mark — that of the Bazzett Studio of the P.C. China Company in Seattle, Washington, which decorated the piece (figure 53). “Oriental” designs for porcelain teaware became very popular by 1900, as less expensive versions became more widely available. Only two fragments of this style were found here, both in the Kirmse dump (figure 52). One was an almost complete blue and white saucer, and the other was a small fragment with a polychrome landscape that looks Japanese. Other decorated porcelain fragments recovered from these excavations are illustrated in figure 53.

Whiteware, and ironstone/graniteware, with polychrome floral decal decorations, many with scalloped rims and gilt edging, dominate the styles manufactured by Johnson Brothers and Homer Laughlin found in the Kirmse dump and privy. This seems to be a very popular, pre-World War I decorative style, and some of the various vessels and patterns can be seen in figure 54. Vessels found at this site that postdate World War I, but predate World War II, are very plain. Two vessels, one a plate and one an unknown form, were found in the Kirmse dump and privy, and were only decorated by a beaded, scalloped rim. They were both manufactured by Johnson Brothers sometime after 1914. The Depression brought new colors and designs to the ceramic industry. At this site, only one manufacturer could be identified — W. S. George of Canonsburg, Pennsylvania. This saucer fragment had a pale yellow glaze with a red poppy decal and was found in the upper levels of the Kirmse dump.





**Figure 51.**

*Monochrome transferprint designs.*

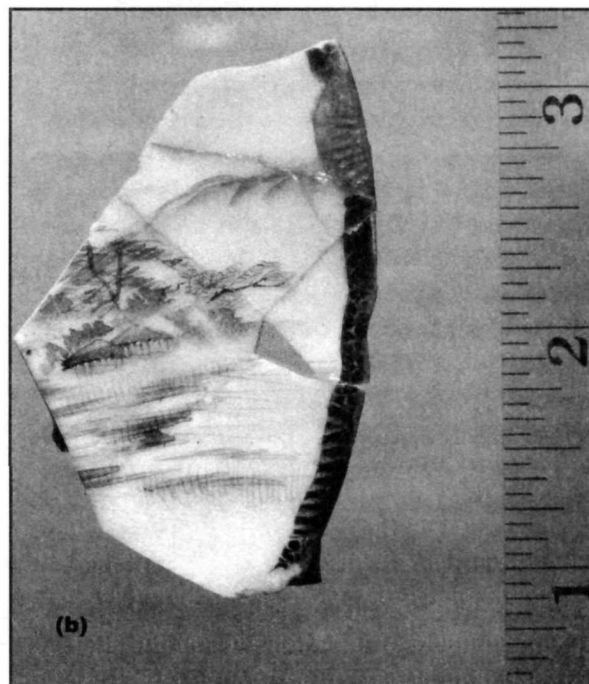
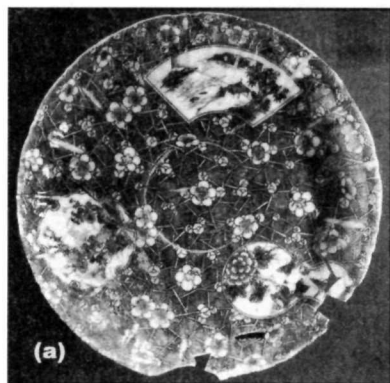
(a) Brown apple blossom pattern, plate/saucer fragment, unknown manufacturer, Feature 23 and 140N110E.

(b) Brown blossom/leaf/cable pattern, plate/saucer fragment, unknown manufacturer, 139N95E.

(c) Bluish-green blossom pattern, saucer fragment, manufactured by Homer Laughlin & Co., Ohio, 1890-1900, Moore dump.

(d) Blue flower and thistle butter saucer, "Mentone" pattern, manufactured by Alfred Meakin, Ltd., England, 1897-1930, Kirmse privy, Moore dump.

(e) Green garland pattern cup, unknown manufacturer, clearance work by DePuydt in 1988 in the southwest yard area.



**Figure 52.** “Oriental” porcelain designs.  
 (a) Dark blue and white lotus blossom pattern, teacup saucer, manufacturer unknown, Kirmse dump;  
 (b) Polychrome Japanese landscape with black, red and gold rim design, manufacturer unknown, Kirmse dump.

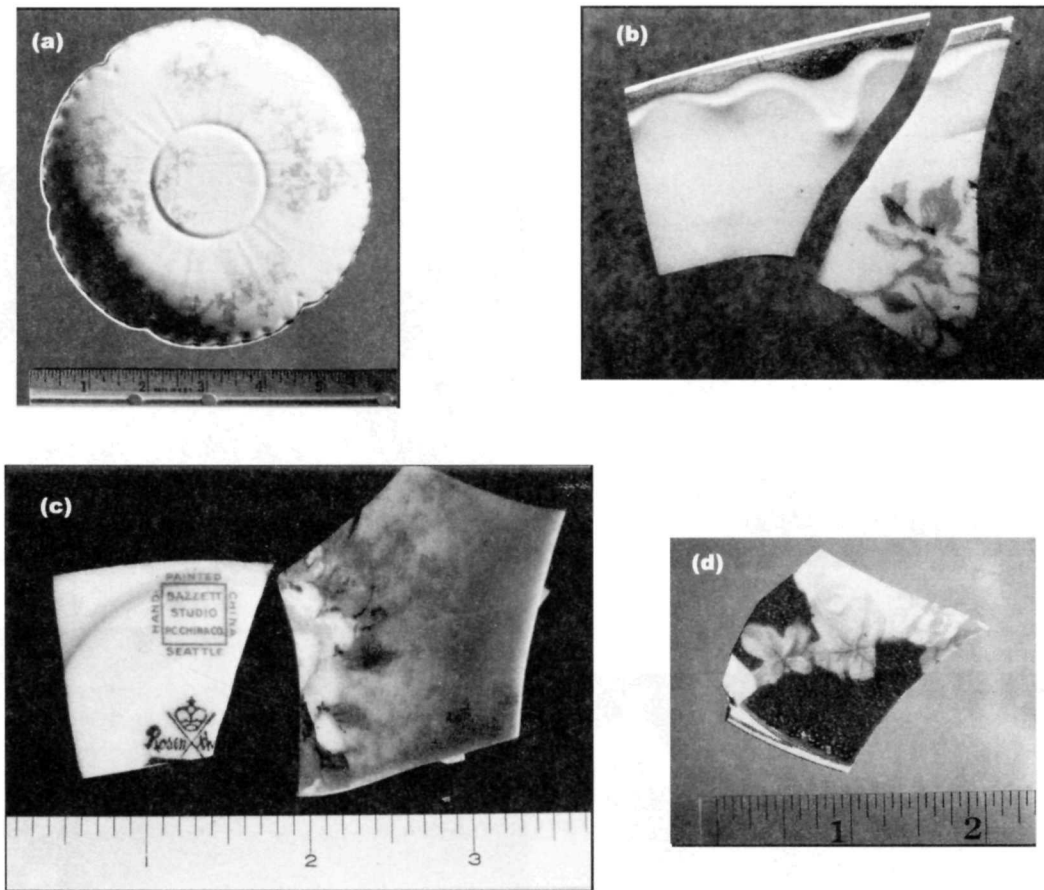
When the ceramic types are identified for the minimum number of ceramic vessels found in all the excavation units, there is more decorated whiteware/ironstone than any other type of ceramic dish. “Decorated” means any decoration applied to ceramic serving ware — painting, gilding, molding, or applying decals. Porcelain is retained as a separate category because it is usually more expensive than any other type of dish and is usually decorated in some way. The differences between the three types, however, are very small — 31% porcelain, 38% decorated whiteware, and 31% undecorated whiteware. Taking out the ceramics from mixed deposits, and just looking at the Moore (gold rush) and Kirmse (post-gold rush) artifacts, there is still more decorated whiteware/ironstone than undecorated whiteware or porcelain (figure 55). The relative differences between the Moore and Kirmse deposits are slight, although there were many more — 106 vessels in the Kirmse deposits, versus 22 in the Moore deposits.

There were definite differences between the types of decoration in the Moore and Kirmse deposits. The only shared pattern that was found was a Johnson Brothers whiteware polychrome floral pattern, possibly a decal, with a molded, scalloped rim found both in the Moore dump and the Kirmse privy (figure

54d). Similarities to other Skagway sites were also noted. The Alfred Meakin “Mentone” pattern (figure 51d) was found on the Block 39 site (Cooper 1998:182), and even today turns up in yards when gardens are turned over. Both the Homer Laughlin “Angelus” and “American Beauty” (figure 54c) patterns have turned up in other Skagway excavations, such as Block 39 (Cooper 1998:179-180). Decorated ceramic fragments from the Peniel Mission excavations are also similar to those found at the Moore/Kirmse house (DePuydt et al. 1997: 87; Rhodes 1988: 313a; 318; 319a; 320d; 322d-e; 324e; and 326d).

Non-ceramic food serving artifacts consisted of glassware and flatware, mostly sterling silver or silverplated spoons. A table knife and a fork were recovered from the Moore dump, but their deteriorated condition prevented manufacturer identification. The fork can be seen in figure 50d. Four teaspoons and four tablespoons were found, almost all from the Kirmse privy or dump #2. Three of the spoons are illustrated in figure 56. The decorative patterns are common and were widely used in 1900.

Fragments from a glass plate and saucer were recovered, but were too small to identify the pattern or manufacturer. Fragments of drinking glasses, plain



**Figure 53.** *Photos of polychrome porcelain designs.*

(a) Upper left, white, pink, and green apple blossom pattern, teacup saucer, manufactured by Haviland & Co., France, 1893-1930, Kirmse privy;

(b) Upper right, pink and green apple blossom pattern, teacup, unknown manufacturer, identical pattern found at various locations in Kirmse dump and periphery;

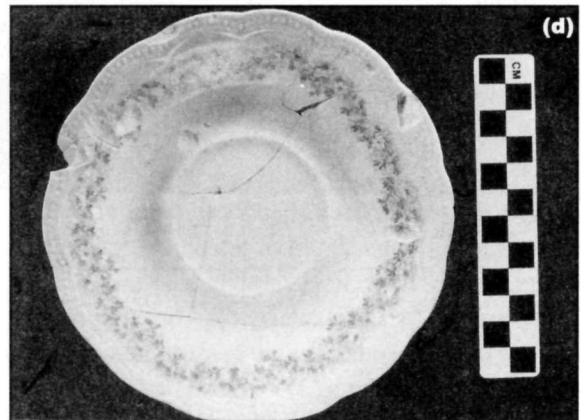
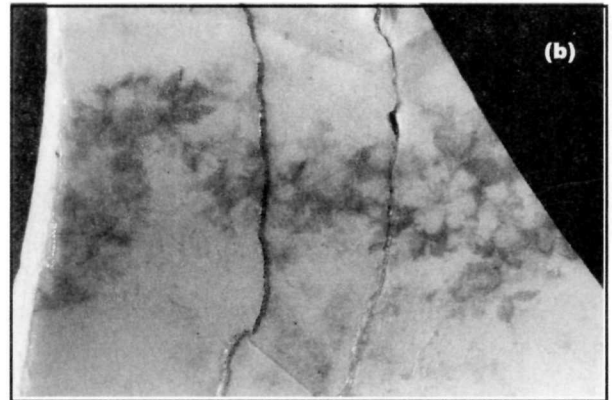
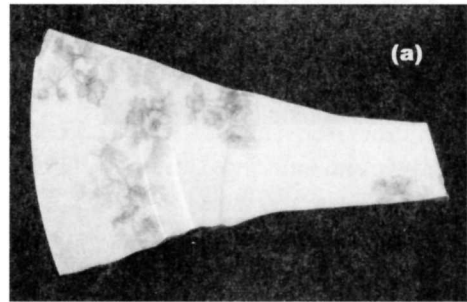
(c) Bottom left, handpainted polychrome blossom-leaf pattern, blue background, saucer, manufactured by Philip Rosenthal & Co., Bavaria, painted by Bazzett Studio, P.C. China Co., Seattle, Washington, 1907-1956, Feature 39, Kirmse dump;

(d) Bottom right, pink blossom, yellow leaf pattern on turquoise gilded rim decoration, plate/saucer, unknown manufacturer, Kirmse privy.

and fluted, were common in all the deposits. One fancy, gilded fragment was found below the floor of the shed. Five stemmed glasses were identified, three from the Kirmse dump, and should be considered when examining beverage consumption habits.

## Food Remains

Food remains consisted of artifacts such as bones and visible seeds, and microscopic “ecofacts,” such as pollen and phytoliths. These specialized analyses



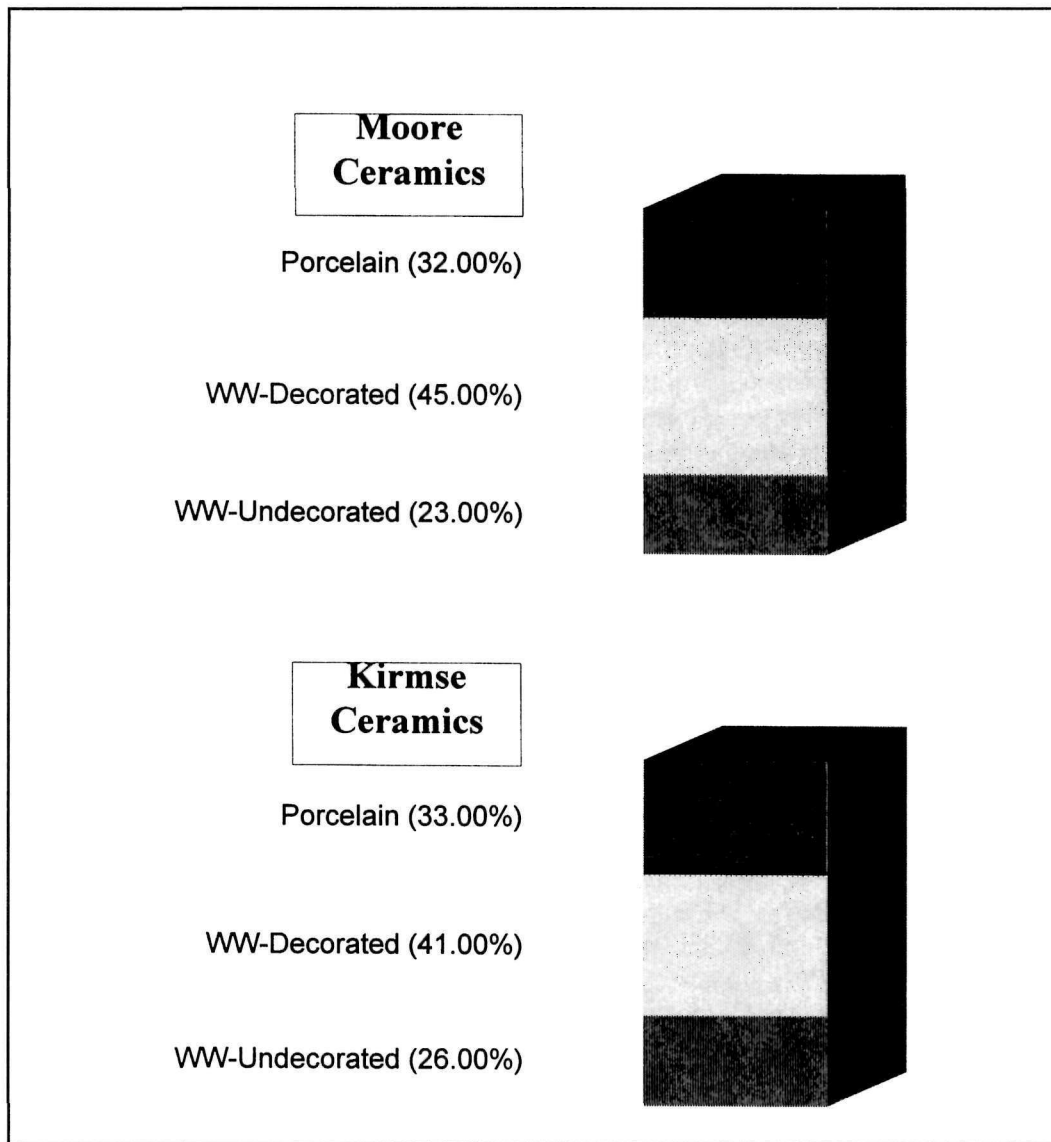
**Figure 54.** Photo of polychrome, pre-World War I whiteware designs.

(a) Top left, pale pink and green apple blossom pattern, plate fragment, unknown manufacturer, Feature 35, MH Shed;

(b) Top right, pale and dark pink and green rose pattern, plate/saucer fragment, manufactured by Johnson Brothers, England, 1900-1913, Kirmse dump;

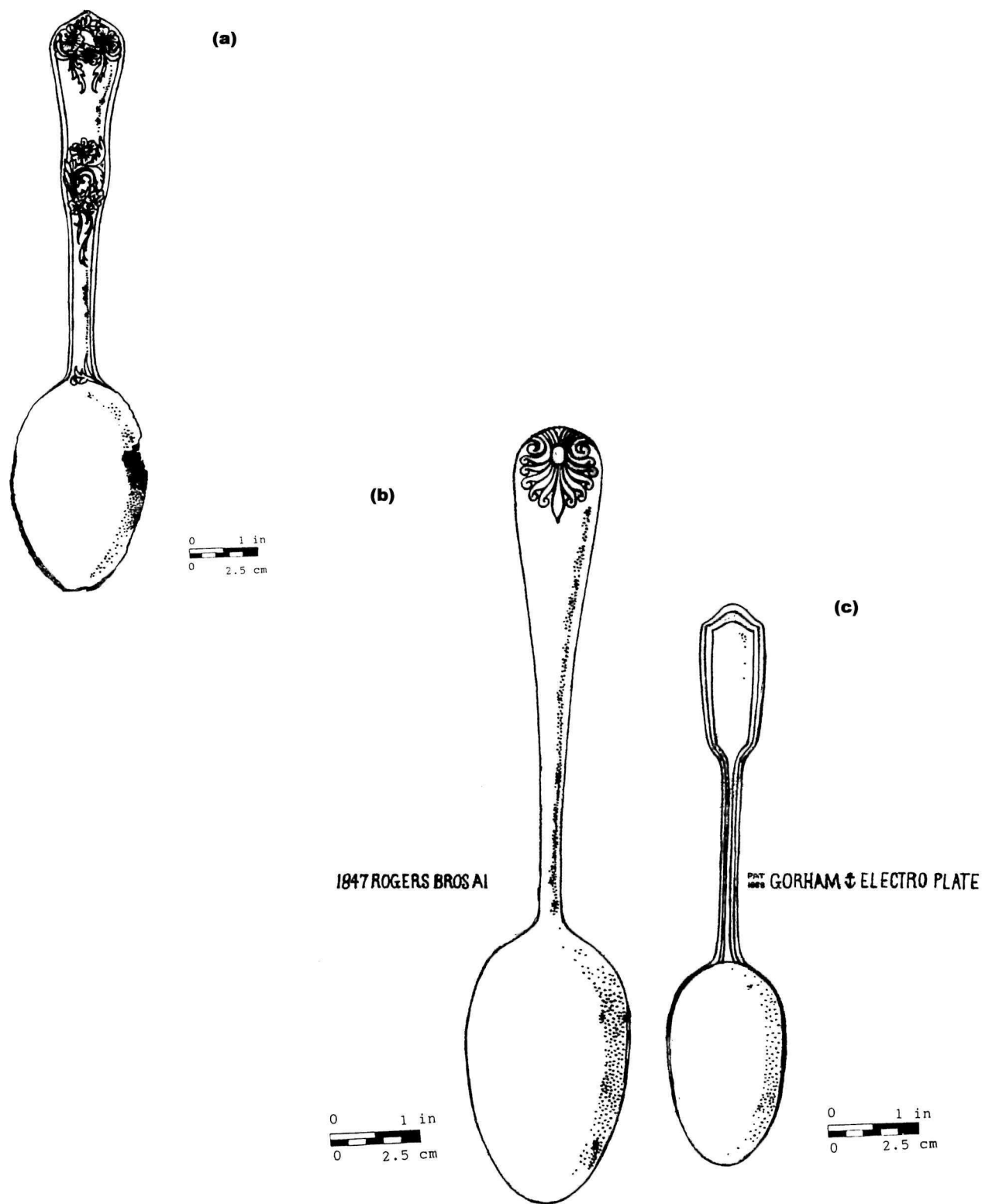
(c) Bottom left, pink, purple, and green thistle decal pattern, "American Beauty" shape/pattern, whole cup, manufactured by Homer Laughlin & Co., Ohio, 1907-1913, Kirmse privy;

(d) Bottom right, white, pink, and green blossom pattern on a blue background, whole saucer, manufactured by Johnson Brothers, England, 1891-1913, Moore dump.



**Figure 55.** Chart showing ceramic decoration type for the Moore and Kirmse deposits.





**Figure 56.**

*Drawing of three spoons found in post-gold rush deposits.*

(a) Tablespoon, Catalog No. 39562, Rogers Bros., Hartford, Ct., 1895-1905, Kirmse Dump #2;

(b) Tablespoon, Catalog No. 33456, Rogers Bros., Hartford, Ct., 1895-1905, Kirmse Privy;

(c) Teaspoon, Catalog No. 39555, Gorham Manufacturing Co., Providence, R.I., 1865-present.

were done by outside firms or persons working on contract, and their full reports are included as appendixes 6 through 9. Visible food-remain artifacts are quantified in appendixes 4 and 5. Other food artifacts such as eggshell fragments were also cataloged, but were not extensively researched. Because Skagway is located on the ocean, one might think that it would be natural to take advantage of some of the resources of this marine environment. A few crab claw and clam shell fragments (mostly butter clam [*Saxidomus giganteus*] and Pacific Littleneck clam [*Protothaca staminea*]) do indicate that was true, but they do not appear in any large quantity. Both types of clam are distributed from the Aleutian Islands down to California and have been found at other Skagway sites (for example, Cooper 1998). They are fairly thick-shelled bivalves found in intertidal zones, in sand and gravel (Foster 1991:107).

A complete discussion of the background of regional meat consumption and production, pricing, individual choice, and an in-depth discussion of the faunal material found at the Moore House site was prepared by David Huelsbeck, and is in appendix 6. Generally, bones were found all over the project, but were concentrated in the areas of the main Kirmse's dump and privy (24% in the dump, 14% in the privy) (appendix 6). Most of the animal bones were purchased from a meat market, rather than people raising their own food. "Butcher waste" bones were found in the Kirmse privy, the dump, and Shed 1. This indicates the occasional home butchering of sheep, pig, and chicken.

About 13% of the collection was burned. Although a large quantity of burned bone was found in the early Moore dump, no burned bone was found in the early Moore privy. Burned bone was found in the later Kirmse privy. Most of the burned bone was calcined, indicating a very high temperature for the fire. This fits well with the burned bone and nails that were also found in this dump area. Dog-gnawed bones were ubiquitous over the site, but the distribution of rodent-gnawed bones was restricted to areas east of the house - the dump, the area between the house and Shed 1, and both privies. Probably the proximity of tantalizing amounts of food trash made this area more attractive to rodents.

One of the most intriguing aspects of a faunal analysis is examining how food preferences change through time. Today, beef is the meat of choice, and lamb or mutton is rarely consumed. That was not the case in pre-World War I Skagway. Based on bone counts alone, it appears that of the bones that could be identified (n=465), 37% were beef, 32% were from either pig or sheep, 7% were positively identified as sheep, and only 2% were identifiable as pig. Fowl, generally chicken, constituted 16%, while small mammals (4%) and fish (3%) made up the remainder of the identifiable bones. Huelsbeck, however, indicates that because of the way meat consumption is calculated, the people living at the Moore/Kirmse House were consuming approximately 22% more lamb, mutton, or pork than beef. This trend was also seen at the Mill Creek dump, north of the Moore/Kirmse house., where Skagway's gold rush inhabitants consumed 16% more lamb than other animals (Rhodes 1988:301). Huelsbeck hypothesizes that this may be a result of a shift in meat-production in the Pacific Northwest, from beef to sheep. While the data from the site do seem to support this shift, it is not as clear as one might like.

We know that the Moore family raised geese, and the Kirmse family raised chickens (G. Kirmse, pers. comm. 1995). Eggshell was found in only three locations on the site — both Kirmse dumps, the Moore dump, and beneath the floor of Shed 1. Also found beneath the floor of Shed 1 was a 2" long, white, chest feather, probably from a goose (C. Rector 1996, pers. comm.). No attempt was made to quantify the eggshell recovered because only samples were taken of the huge quantities present. In the restored Moore House exhibit, eggshell fragments from the dump are mounted on the wall, beneath the goose "egg counts" written on the wall by Ben Moore in 1898, a way for archeology to contribute to the visible interpretation of the gold rush.

Other visible food remains were seeds and shells from fruits and nuts. More than 50% of the visible seeds were found in the Moore privy deposits. The only deposits that contained no visible seeds were the periphery of the east yard, the pre-1940 utility trenches, and the pre-1900 strata. Peach seeds were found in every other deposit and have been found in every Skagway excavation (Blee 1983:134; Blee

1988:87; Cooper 1998:156; DePuydt et al.1997:73; Rhodes 1988:276; Spude et al.1993:48), emphasizing their popularity in Skagway.

A macrobotanical analysis, identification of seeds through stereoscopic magnification, was performed by Steve Martin and Virginia Popper. Their report is reproduced in full as appendix 9. Their analysis supplements information learned from just studying the visible seeds. Analyses of the pollen remains were performed by Linda Scott Cummings and Thomas Montoux, and Karl Reinhard. Their reports and conclusions are reproduced as appendixes 7 and 8. They analyzed samples from the Moore and Kirmse dump and privy deposits. All of the privy samples were from stratum 17-2, what has been called the “night soil” deposits. However, there were differences in this deposit between the upper levels of the Kirmse privy and the lowest, waterlogged deposits in the base of the Moore privy. The upper night soil levels were decomposed and more organic, while the bottom samples were heavily mixed with small bits of newspaper and fecal matter. Other than bits of coal and carbonized wood, the privy samples were not heavily mixed with other minute materials, indicating that the privies were not used as general dumpsites. The pollen counts found in these samples were exceedingly low, and Reinhard found that fungi might have decomposed much of whatever pollen was there originally. None of the samples submitted yielded more than 200 grains, the threshold for statistical analysis. In addition, the only pollen that was present was from tree and weedy shrub families. This is frustrating to the researcher who, in the case of the sample from the privy, could see seeds in the sample. However, pollen can be more susceptible to fungal attacks than the larger, hard-cased visible seeds, and that was certainly the case here. Cummings and Montoux also did a phytolith analysis on three samples: two from the Kirmse dump (one from Feature 23, one from the periphery, unit 139N92E, Level 4) and one from the Moore dump (145N98E, Level 10). Information from their reports that relates to dietary consumption and the cultural landscape is contained in chapter 6.

## Beverage Containers

The “Beverage Containers” category includes more than just bottle fragments. It also includes various

kinds of bottle closures or opening devices — corks, crown caps, pulltabs for aluminum cans, screw tops, and bottle openers. There were also many scraps of foil, often gold-colored on one side, that sealed various liquor (beer, champagne, wine, ale, or distilled liquors) bottles. A few still adhered to the bottle finishes, but most did not. All of these give us a better idea of the kind of beverages being consumed.

The artifacts are listed in appendixes 4 and 5, by both fragment and MNI count. No attempt was made to differentiate the bottles by type of beverage; they are merely summarized by color. The minimum number of individual (vessel) count is not based on the number of bottle bases or finishes, although they are incorporated. Since not all the broken bottles contained base or finish fragments, body fragments of a different color than the bases or finishes were added to the vessel count. Attention was paid to the possible cross-mending of vessels through the excavation levels, so that one bottle was not counted in more than one level.

A total of 2,463 beverage bottle fragments were recovered from all the excavations. Most were recovered from the Kirmse privy (n=1,085; 44%). The Kirmse dump had a significantly smaller number of bottle fragments — 444, or 18%, while 347 (14%) were found below the floor of Shed 1. That changes when using the minimum number count. There were still more bottles recovered from the Kirmse privy than any other location (n=58), but they represented only 23% of the total bottles (n=255). This difference is because the glass bottles in the Kirmse privy were severely fragmented. In the laboratory, bottle glass was weighed and averaged. The average weight of bottle glass in the Kirmse privy was only 3.9 grams, compared to 84.2 grams for the Moore privy (fragment n=12), and 7.1 grams for the Kirmse dump. This was also true for food storage and food serving artifacts. Whether that is due to pre- or post-deposition factors is not known, although it is possible that the many structural materials that were dumped in the top of this deposit caused the bottles below to shatter and break.

More fragments of pale aqua or green bottles were found than any other kind of bottle glass (n=828, 34%). Emerald green and amber bottle fragments

**Table 15 - Results of Bottle Diameter/Volume Study**

<b>BASE DIAMETER</b>	<b>VESSEL VOLUME (OZ.)</b>
< 1"	< 1 oz.
1" - 1.4"	1 - 2 oz.
1.5" - 1.9"	2 - 5 oz.
2" - 2.4"	3 - 12 oz.
2.5" - 2.9"	7 - 16 oz.
> or = 3"	16 - 32 oz.

each represented only 11% of the total fragments recovered. When the minimum number of bottles are considered, both amber and pale green bottles constituted 13% of the total bottle collection. The post-1940 stratum was the only deposit that contained more closures than bottles, mostly crown caps. Very few crown caps are found in the gold rush deposits. Although the crown cap was patented in 1892, its use did not become widespread until the automatic bottling machine, first used in 1904, began to dominate the glass manufacturing industry. What this seems to indicate, preliminarily, is that beverages such as soda, beer or ales, that usually were topped by a crown cap closure, were the most popular beverage consumption item at this site when the Kirmse family lived here.

Few identifiable manufacturer or glasshouse marks were found on the bottles. All marks are summarized in appendix 2. In the deposits disturbed by the 1985 electrical work was a pre-Prohibition, gilded metal band embossed "NM Co." for Newman M. & Co. of San Francisco, in business from 1911-1918 (McGuire 1967:26). Another bottle seal, from the same area (139N81E, Level 3), was marked around its outer edge: BEN B.RK/ BOSTON around a diamond shape in the center. No further identification was made. From the other end of the dump (140N103E, Level 2) was found part of another embossed seal: [CAN]ADIAN R[YE]. Two colorless glass flasks, clarified with selenium and thus post-

dating 1911, were identified as Gordon's Dry Gin from England. In the most recent deposits was a rum bottle cork-lined stopper: LEMON HART/EST 1904/ RUM. Only one post-Prohibition beer bottle (glasshouse: Northwest Glass, Seattle, Washington) was identified, and that was from the Kirmse dump. A milk bottle fragment, also from the Kirmse dump, had an unidentifiable mark: BU....

To understand more about the function of fragmentary bottles, volume capacity was estimated if the basal diameter was available. These figures were based on measurements taken from the archeology lab's bottle type collection. Table 15 shows the volume estimates, based on basal diameter. This study is only true for cylindrical bottles and is not applicable to jars.

Based on these estimates, bottles that had bases were grouped according to vessel volume. Table 16 presents the results of that analysis. All large bottles with non-crown finishes were classified as liquor bottles. Amber bottles with a crown finish were identified as beer bottles, while amber bottles without an identifiable finish were classified under the general liquor category.

No fragments from embossed soda bottles were found, making identification of non-alcoholic beverages difficult. Some fragments of colorless

**Table 16 - Bottles by Volume, Finish and Color<sup>1</sup>**

<i>Bottle Volume/finish</i>	<i>Clear</i>	<i>Clear SCA</i>	<i>Clear Selen</i>	<i>Amber</i>	<i>Aqua</i>	<i>Pale Bl/Gr</i>	<i>Green</i>	<i>Green Emrld</i>	<i>Green Olive</i>	<i>Total</i>
<b>3-12 oz.:</b>										
Unknown finish	1	0	0	1	1	0	0	0	0	3
<b>7-15 oz.:</b>										
Unknown finish	2	3	1	1	3	4	1	2	0	17
Crown	0	1	0	4	1	3	0	13	1	23
<b>Total 7-15 oz.</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>15</b>	<b>1</b>	<b>40</b>
<b>16-32 oz.:</b>										
Unknown finish	7	2	0	10	3	5	0	0	0	27
Brandy	0	1	0	1	0	3	0	0	0	5
Crown	0	1	0	1	1	4	0	0	0	7
Threaded	2	0	0	0	0	0	0	0	0	2
<b>Total 16-32 oz.</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>
<b>Finishes, Size Unknown:</b>										
Bead/Wine	1	0	0	0	1	0	2	0	1	5
Brandy	1	1	0	0	0	0	0	0	0	2
Brandy, Threaded	0	0	0	0	2	0	0	0	1	3
Crown	0	0	0	3	3	5	1	1	0	13
Threaded	1	0	0	0	0	0	0	0	0	1
<b>Total Finishes, Size Unknown</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>24</b>

<sup>1</sup> Does not include flasks.



glass did contain stippling, a technique that became popular by the World War II era and was often used on soda bottles. Colorless, stippled glass bottles were found in varied locations on the site, most in the post-1940 stratum: in the southwest yard, east of the house, in the boardwalk area, and in the 1985 disturbance north of the house. All colorless glass bottles that contained stippling were identified as soda bottles.

The bottles are fairly evenly split between smaller and larger sizes. However, the bottles that had a crown finish constituted the largest category, 39%. Only crown finishes were found on the smaller, 12-16 ounce bottles. After the introduction of the automatic bottling machine, crown finishes became the closure of choice for soda and beer bottles. The larger bottles were more varied. There were an equal number of amber and pale aqua/green bottles, but also quite a few (n=12) large, colorless bottles. Few of these bottles had crown finishes, and the majority more likely contained distilled liquor. The bottles found in the Kirmse privy are quite varied, but seem to mostly be from pre-Prohibition beer and distilled liquor bottles. No beverage bottles were found in the earlier, Moore privy deposits, only a few flasks, which sometimes also held medicine (figure 57).

Small bottles were mostly emerald green, with a crown finish, and were classified as soda bottles. This type of bottle was marketed by the Illinois Glass Company, in its catalogs from 1916-1920, as “Emerald Green Ginger Ales,” and stated: “The Emerald Green Bottle is popular for many beverages, and for certain medicinal waters. The Select Beer ... and the Split ... are available in the approved shade of emerald green” (Illinois Glass Company 1987a [1916-1920]:156). One emerald green beer/ale bottle was found with a foil wrapper. One fragment had embossing: ..ADA ... (136N74E, Level 4), which was cataloged as Canada Dry ginger ale. Emerald green bottles were found all over the areas of the Kirmse dump, below the floor of Shed 1, and between the house and Shed 1. Generally, they were found close to the surface, in levels 1-2, and thus seem to have been deposited in the late 1920s and 1930s, during Prohibition and perhaps beyond. The bottles lacked identifying information, such as embossing or a glasshouse manufacturer’s mark. By estimating the volume for the bottles, it was possible to assign

function for many of the bottles based on size and bottle color. That information is presented in table 17.

The total MNI count was actually a bit more complicated than adding up total numbers, since each color meant that separate bottles of various types were being represented. The liquor bottles do dominate the collection (40%), with beer (10%) and wine (5%) bottles a much smaller part of the sample. Soda bottles made up 17% of the bottle collection.

### **Food-Related Artifacts, Unknown Use**

Almost all of the artifacts that could not be specifically identified were glass body fragments from bottles or food containers. They are identified by fragment and minimum vessel count in appendixes 4 and 5. There were a total of 445 glass fragments and four porcelain fragments from an unidentifiable hollowware vessel. Most fragments (29%) were pale aqua or green, and their curvature indicated they were from cylindrical vessels of an unknown size. This is in line with the fragment count for beverage containers, where the pale aqua/green bottle fragments constituted 34% of the collection. The majority came from the two Kirmse dumpsites, or the Kirmse privy. The minimum vessel count for the unknown artifacts is not extremely reliable, since diagnostic bases or finishes may have been counted with either beverage containers or food preparation artifacts. The largest fragments seem to be from the 1940s builder’s trench, but that is probably a result of the small sample size (n=9).

### **HOUSEHOLD ARTIFACTS**

Artifacts that have something to do with household functions are usually few, and that was true here. But even though their numbers may be low, they are of interest because they can tell us something about how people actually lived — how they maintained the physical appearance of their house and themselves, how they kept warm, and how they lit the long winter darkness. All household artifacts are detailed in appendixes 10 and 11 and summarized in table 18 by both fragment and minimum number counts. These tables have been presented for consistency and to provide researchers with a complete tabulation of results, but they also illustrate the



Figure 57.

Photo of flasks from Moore privy and page from 1904 Whitney Glass Works catalog showing flask styles (Lohmann 1972).

WHITNEY GLASS WORKS

57

FINISHED MOUTH FLASKS AND  
GLASS STOPPERED LIQUOR BOTTLES

FLINT, GREEN AND AMBER



Union Oval

Union Oval, Picnic, Shoo Fly,  
Polo, Dandy  
and Diamond Flasks  
Finished Mouth

Capacity Ounces	SPECIAL DISCOUNT	Per gross
2 . . . . .		\$12 00
3 . . . . .		12 50
4 . . . . .		13 25
5 . . . . .	1 gro. bxs.	15 00
6 . . . . .	"	15 00
7 . . . . .	"	16 00
8 . . . . .	"	17 00
10 . . . . .	"	22 75
12 . . . . .	"	22 75
14 . . . . .	"	23 75
16 . . . . .	"	25 00
20 . . . . .	1/2 "	35 00
22 . . . . .	1/2 "	35 00
24 . . . . .	1/2 "	35 00
26 . . . . .	1/2 "	36 00
28 . . . . .	1/2 "	37 25
30 . . . . .	1/2 "	38 00
32 . . . . .	1/2 "	39 00



Tall Union



Picnic

Glass Stoppered Flasks of all  
Shapes, Ovals and Squares  
Including Stoppers and Shell Corks

Capacity Ounces	SPECIAL DISCOUNT	Per gross
5 . . . . .	1 gro. bxs.	\$ 6 25
6 . . . . .	"	6 50
7 . . . . .	"	6 75
8 . . . . .	"	7 00
10 . . . . .	"	8 50
12 . . . . .	"	8 75
14 . . . . .	"	9 00
16 . . . . .	"	9 50
20 . . . . .	1/2 "	12 00
22 . . . . .	1/2 "	12 25
24 . . . . .	1/2 "	12 75
26 . . . . .	1/2 "	13 25
28 . . . . .	1/2 "	13 25
30 . . . . .	1/2 "	14 00
32 . . . . .	1/2 "	14 00



Shoo Fly or Cognac



Glass Stoppered  
Columbian

We also manufacture Blakes of all shapes fitted for, or complete with glass stoppers and shell corks, for which special prices will be given on inquiry.



Polo

Table 17 - Bottles by Type and Color

<b>BOTTLE TYPE</b>	<b>Clear</b>	<b>Clear SCA</b>	<b>Clear Selen</b>	<b>Amber</b>	<b>Aqua</b>	<b>Pale Bl/Gr</b>	<b>Green</b>	<b>Green Emrld</b>	<b>Grn Olive</b>	<b>Total</b>
<b><i>Bottle MNI<sup>1</sup></i></b>	5	4	0	5	5	4	3	1	0	27
Base	5	4	0	5	5	3	1	1	0	24
Finish	0	2	0	2	4	4	3	0	0	15
<b><i>Beer Bottle MNI</i></b>	0	2	0	8	1	1	0	1	0	13
Whole	0	2	0	1	0	1	0	1	0	5
Base	0	0	0	6	1	0	0	0	0	7
Finish	0	0	0	7	1	0	0	0	0	8
<b><i>Liq. Bottle MNI</i></b>	2	2	0	5	6	14	1	0	3	33
Whole	0	0	0	0	0	2	0	0	1	3
Base	2	2	0	5	2	11	0	0	0	22
Finish	0	2	0	1	6	12	1	0	0	22
Gin <sup>2</sup>	0	0	0	0	0	0	0	0	2	2
<b><i>Liq. Flask MNI</i></b>	4	9	2	0	0	0	0	0	0	15
Whole	2	5	1	0	0	0	0	0	0	8
Base	0	4	0	0	0	0	0	0	0	4
Finish	2	0	1	0	0	0	0	0	0	3
<b><i>Wine/Ale MNI</i></b>	0	0	0	0	0	1	0	0	5	6
Base	0	0	0	0	0	1	0	0	1	2
Finish	0	0	0	0	0	0	0	0	5	5
<b><i>Soda Bottle MNI</i></b>	5	1	0	0	0	2	0	12	0	20
Whole	0	0	0	0	0	0	0	1	0	1
Base	5	1	0	0	0	0	0	7	0	13
Finish	0	1	0	0	0	2	0	11	0	14
<b><i>Milk (Finish)</i></b>	1	1	0	0	0	0	0	0	0	2
<b><i>Demijohn-Finish</i></b>	0	0	0	0	1	0	0	0	0	1
<b><i>TOTAL BOTTLE MNI</i></b>	17	19	2	18	13	22	4	14	8	117
<b><i>TOTAL WHOLE</i></b>	2	7	1	1	0	3	0	2	1	17
<b><i>TOTAL BASES</i></b>	12	11	0	16	8	15	1	8	1	72
<b><i>TOTAL FINISHES</i></b>	3	6	1	10	12	18	4	11	7	72

<sup>1</sup> MNI totals based on number of whole bottles and the number of bases or finishes, whichever is greater.

<sup>2</sup> Body fragments from distinctive tapered gin “case” bottles; no finishes or bases found.

Table 18 - Household Artifacts

	Frag Ct	MNI Ct	Frag %	MNI %
Household hardware	36	32	4	12
Furniture	14	12	1	4
Fixed furnishings	19	7	2	3
Portable furnishings	168	60	18	22
Home maintenance	252	76	27	28
Lighting	343	72	36	26
Heating	117	14	12	5
<i>Totals</i>	949	273	100	100

problems that can arise when only fragment counts are used.

In the fragment count table, the 36 pieces of household hardware only account for 4% of the total household-related artifacts, while they account for 12% of the minimum number total. Most of the differences are from the way a lightbulb can shatter into a hundred small fragments. Another factor was our decision to include the 112 chunks of coal in the fragment table, but to only give them a value of "1" in the minimum number table. Other researchers might not have included coal, used in many Skagway stoves, at all. The artifacts in this section will only be discussed by minimum number counts.

The most common household artifact was related in some way to household maintenance. Fragments of amber Clorox or other caustic agent bottles were found across the site, but not in the privy deposits or areas farther away from the house, such as the southwest or east yards. House painting was a consistent activity through the years. In Kirmse Dump #2, an 8-ounce furniture polish bottle made of colorless SCA glass, with a packer or patent lip finish, was embossed on its base: [LI]QUID [V]ENEER.

Today, the task of getting clothes clean has become so automated that we rarely consider the time that

was spent on this chore years ago. Many clothes were made of wool, rarely if ever washed. Still, these clothes got dirty, and getting them clean presented a challenge. In the Moore Dump, was a fragment of a colorless SCA glass bottle that once held spot remover. It still retained some of its bronze gilt script: DR[Y/ BE]FOR[E]/RUB[B]ING./LET DRY BEFORE USING. Shirts, blouses, and underwear could be washed. Clorox bleach bottles represented one aspect of getting these clothes clean. Clothespins were another. Excerpts from an article published in 1886 (reprinted in Franklin 1992), *Practical House-keeping: A Careful Compilation of Tried and Approved Recipes*, Minneapolis, MN: Buckeye Pub'g Co., 1884, illustrate not only how cumbersome and time-consuming the process was, but also the thought and research that went into it. It also shows the impact it could have on one's social activities, and offers a glimpse into the invisible mindset that is so difficult to understand just from examining physical objects:

When inviting friends to visits of a week or more, try to fix the time for the visit to *begin* the day *after* the ironing is done. The girl feels a weight off her mind, has time to cook the meals better and is a much more willing attendant upon guests.

Do not have beefsteak for dinner on washing or ironing days—arrange to have something roasted in the oven, or else have cold meat also.

Do not have fried or broiled fish. The smell sticks, and the clothes will not be sweet; besides the broiler and frying-pan take longer to clean.

\* \* \*

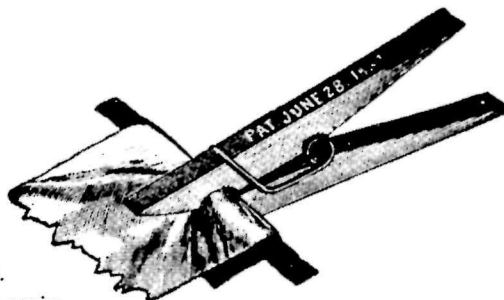
Monday is the washing day with all good housekeepers. The old-fashioned programme for a washing is as follows: Use good soft water if it can be had. If not, soften a barrel-full of well-water by pouring into it water in which half a peck or more of hard wood ashes have been boiled, together with the ashes themselves. ... If milky, more ashes and lye must be added as before, care being taken not to add more than is necessary ... or it will affect the hands unpleasantly. ... Scald all table linen and articles which have coffee, fruit, or other stains which would be “set” by hot suds.... (Dirty clothes should never be put into very hot clear water, as it “sets” the dirt. Hot soap-suds, however, has the opposite effect, the water expanding the fiber of the fabric while the alkali of the soap softens then removes the dirt.) [Extensive instructions on washing and rinsing clothes then follows, but are omitted here.] ... When starched, hang out on the line to dry, first wiping the line with a cloth to remove all dirt and stains.... Every housekeeper ought to provide a pair of mittens for hanging out clothes, to be used for this purpose and no other. Cut them from clean flannel ... and line them with another thickness of flannel.... Shake out each article until it is free from wrinkles, and fasten securely on the line (with the old-fashioned split clothes-pins)....

The line should be stretched in the airiest place in the yard, or in winter a large attic is a better place for the purpose. (Freezing injures starch, and for that reason it is better in winter to hang clothes out unstarched until dry, then taking in, starching and drying indoors.) When dry, remove from line to clothesbasket, place clothes-pins as removed in a basket kept for the purpose, take down and roll up the line, remove basket, line and pins to the house, and put the two latter into their proper places.... [A]lways count clothes-pins when gathering them up. [Franklin 1992:164-166]

No wonder that as families moved up the social and financial ladders, one of the first household chores jettisoned was the family laundry! While it is not known whether either Mrs. Moore or Mrs. Kirmse personally did their family's laundry, the many clothespin springs are certainly evidence of that important household activity. Most were found in the east yard area. This is not surprising since figure 10 clearly shows the Kirmse family's clothesline in this area. The clothespin springs were all similar to the type seen in figure 58a, a design patented in 1887 and manufactured by the United States Clothes Pin Co. of Montpelier, Vermont. Patent designs for clothespins were fairly common in the 1800s, and figure 58b shows some of the many designs patented between 1856 and 1875, including the wooden, non-spring style manufactured from a single piece of wood, actually termed a “clothespeg.” An almost complete “clothespeg” was found in the Moore privy. By 1906, this industry was centered in Vermont, and accounted for the majority of the 900,000,000 “clothespegs” manufactured by the United States yearly. Generally manufactured from birch trees felled from the steep Vermont hillsides, many were exported to England beginning in the 1860s and by 1888 sold there for 1<sup>o</sup>¢ per dozen (Franklin 1992:66, 163). The price in the United States was considerably less: in 1895, you could buy 30 dozen for 32¢ (Montgomery Ward 1969 [1895]:574), and in 1897 they were sold for 15¢ per gross (Sears, Roebuck 1968 [1897]:139). Clothespins similar to the spring type found at this site cost more, 8¢ per dozen (Sears, Roebuck 1968 [1897]:139).



(a)

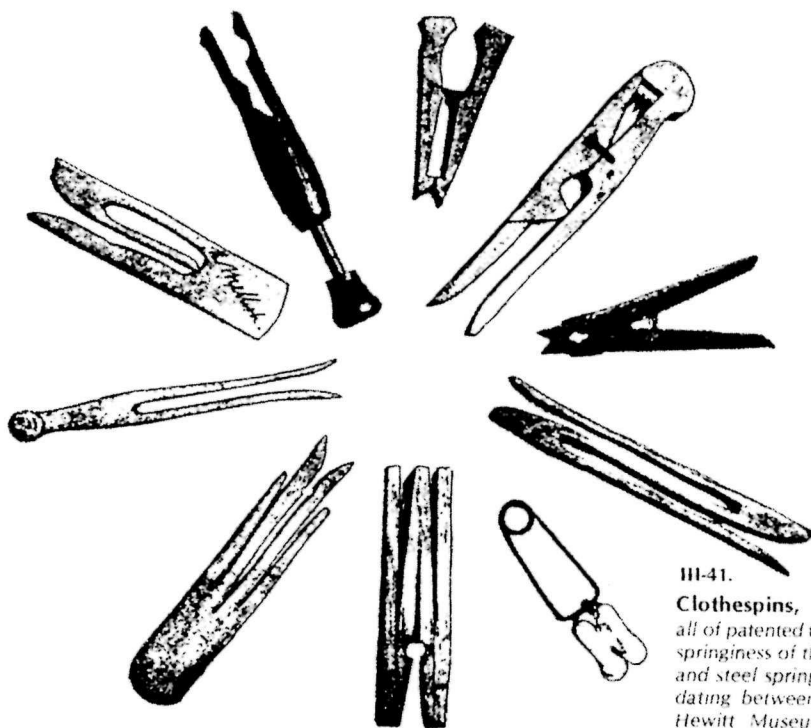


III-45.

**Clothespin.**

"U.S. Spring," mtd. by United States Clothes Pin Co., Montpelier, VT. "Clasps the clothes on the line and holds them until unlocked." Pat'd 6/28/1887, and made until at least 1909. Ad in HFR, 5/1906. A similar ad in Iron Age, 1/7/1909. Date may be stamped along edge. **\$2.00-\$5.00**

(b)



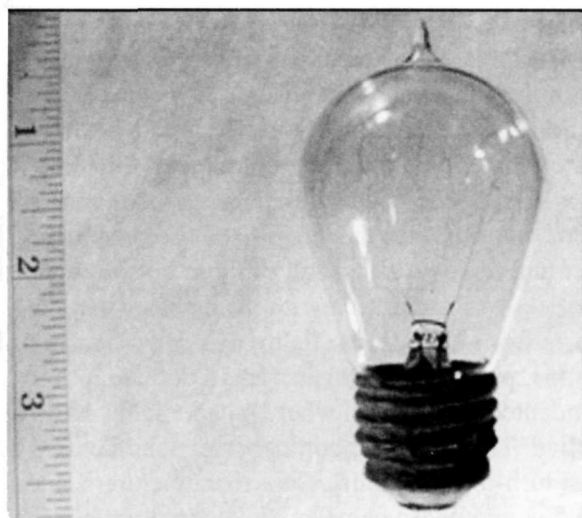
III-41.

**Clothespins,**

all of patented types. Mostly of wood, several utilizing the natural springiness of thin fingers or prongs of hardwood, others use wire and steel springs. These are full-size patent application models dating between 1856 and 1875. Photograph courtesy Cooper Hewitt Museum, NYC, division of Smithsonian Institution, Washington, DC. **\$10.00-\$30.00**

**Figure 58.***Drawings of patented clothespins.**(a) Clothespin style most common at Moore/Kirmse house site;**(b) Various patented clothespins, 1856-1875.*

Artifacts relating to heating and lighting were also very frequent at the site. Coal is found at every Skagway site and was the heating method of choice since much of the locally available wood was used up in the early days of the gold rush. There was a coal company in Skagway as early as 1898 (Rhodes 1988:198), and White Pass Railroad maintained large coal bunkers for their steam engines (until 1955), making coal available at reasonable prices (Mulvihill 1999, pers. comm.). Like other sites in Skagway, coal, clinkers, and “slag” dumped out from the stoves used for heating were found almost everywhere on the site. The shed seems to have been where the Kirmse family stored their coal. Coal dust covered the dirt below the floor of the shed. We found burned coal and clinkers as fill in the Kirmse privy, and also layered in Kirmse Dump #2. Little was found in the Kirmse and Moore dumps, although burned artifacts were present. Obviously, the dumpsite was reserved for burnable household waste, rather than waste that had been cleaned out of a stove.



**Figure 59.** *Photo of lightbulb found in Kirmse privy. Catalog No. 33448.*

Lighting artifacts ranged from kerosene lamps to electric incandescent and arc lighting. A yellow glass fragment found under the floor of the shed had a patent date of [NO]V. 12 1889. It is part of a “Regenerative Burner Lamp” (Patent No. 415,067) filed by Johann Schmidt of Dresden, Germany (United States Patent Office 1889). The patent was actually for the base of a lamp that had a frame supporting a “shade globe” to more intensively reflect the light from the

burner. Several lampshade fragments were also identified under the floor of the shed.

The most frequent lighting artifact found was the electric light bulb. Figure 59 is one of the two unbroken bulbs that were found in the Kirmse privy deposits. This bulb has a looped, single filament of tungsten with a large base and may have fit into an overhead socket. The other bulb was much smaller, had a triple-looped carbon filament, and a threaded copper screwbase with a porcelain insulator. Although the text on the glass filament was unreadable, the base was inscribed “D1208.” This bulb could have been for a decorative multiple lamp, or it could have been part of a series such as those used on a commercial sign, like the lights on the Kirmse store sign. Electricity in Skagway was available from the beginning of the gold rush, but was handled by competing electric companies. The service was very unreliable (Blee 1983:91; Blee 1988:80, 196-198; Cooper 1998:153; DePuydt et al. 1997:93-94; Rhodes 1988:189; Spude et al. 1993:42). Other sites in Skagway, like the Moore house, continued to supplement electric lighting with kerosene and oil lamps (Cooper 1998:153) until at least World War I.

Small fragments of mica were found in the Moore dump and the pre-1900 Moore deposits. Mica is a silicate that contains aluminum and potassium, with a crystalline structure that allows it to be split into thin, flexible sheets, a property seen in the fragments present at this site. The center of America’s mica-mining industry is located in North Carolina, and no working deposits are found in Alaska or the Yukon. In order to get it into these thin sheets, considerable work was required after the mining operation. In North Carolina, early settlers used thin sheets of mica (also called “isinglass”) to make windows for their cabins (Lewellen 1992:64). While it is conceivable that could have been done for the Moores’ early cabin, it is unlikely. In the area it was more common to take the hide of a young caribou, scrape it, and stretch it very thin to use as a window covering for cabins in remote sites. However, mica also has a high melting point, and is a poor conductor of heat, making it an ideal insulator. Sheet mica was used in stove doors during the 1800s (Lewellen 1992:64), and it is believed that was the purpose of the mica found at this site.

Fragments of decorative porcelain and cut or pressed glass were common in sites close to the house, although they were less common in the Moore deposits. Only two vessels could be positively identified as coming from a glass bowl, one from the Kirmse dump and one from the Moore dump. The three decorative methods seen on these glass fragments were etching, molding, and cutting. The only molded pattern found was fluted, at either the vessel's base or its rim. Two etched patterns were noted on separate fragments; one was a leaf, and the other was a fan shape. The most common decorative method was cutting a pattern into the glass. While some fragments were undoubtedly the more expensive "cut" glass, there was also a fair share of the less expensive "pressed" glass. Because they often shared common designs, such as diamonds, fans, stars, and starbursts, it can be difficult to tell them apart. The cut glass bowl from the Kirmse dump had a combination of diamonds, cross-hatching, and starbursts incised into its surface, along with a sawtooth rim. The side of the lead glass dish found in the Moore dump was incised with an unidentifiable geometric pattern. Quite a variety of decorative glass patterns was registered with the Patent and Trademark Office during the late 1800s to the mid-twentieth century. Many different patterns were found during the Peniel Mission excavations (DePuydt et al. 1997:82-84). Here, no patterns could be identified with any registered with the Patent/Trademark office.

Several attractive, small decorative objects were recovered from the Kirmse deposits. From the privy, one was a small, clear glass bird with an attached ferrous screw and a burned tail. Its function is unknown. Two fragmented, small porcelain vases had impressed basal marks that identified the manufacturer as Schafer & Vater of Germany (Kovel and Kovel 1986:112), with a date range for those marks from 1896-1962. One vase was cross-mended, and a cherub was the prominent decoration. In the Kirmse dump, a shallow redware bowl with a white-glazed interior was manufactured by Sarreguemines, a French pottery that made this vessel in Germany, sometime after 1892 (Kovel and Kovel 1986:36). A varied collection of household artifacts can be found under the "Portable Furnishings" category. One of them was a rusted, ferrous metal box for hanging on a wall, found in Feature 23 of the Kirmse dump (figure 60). It was used to hold bills and other

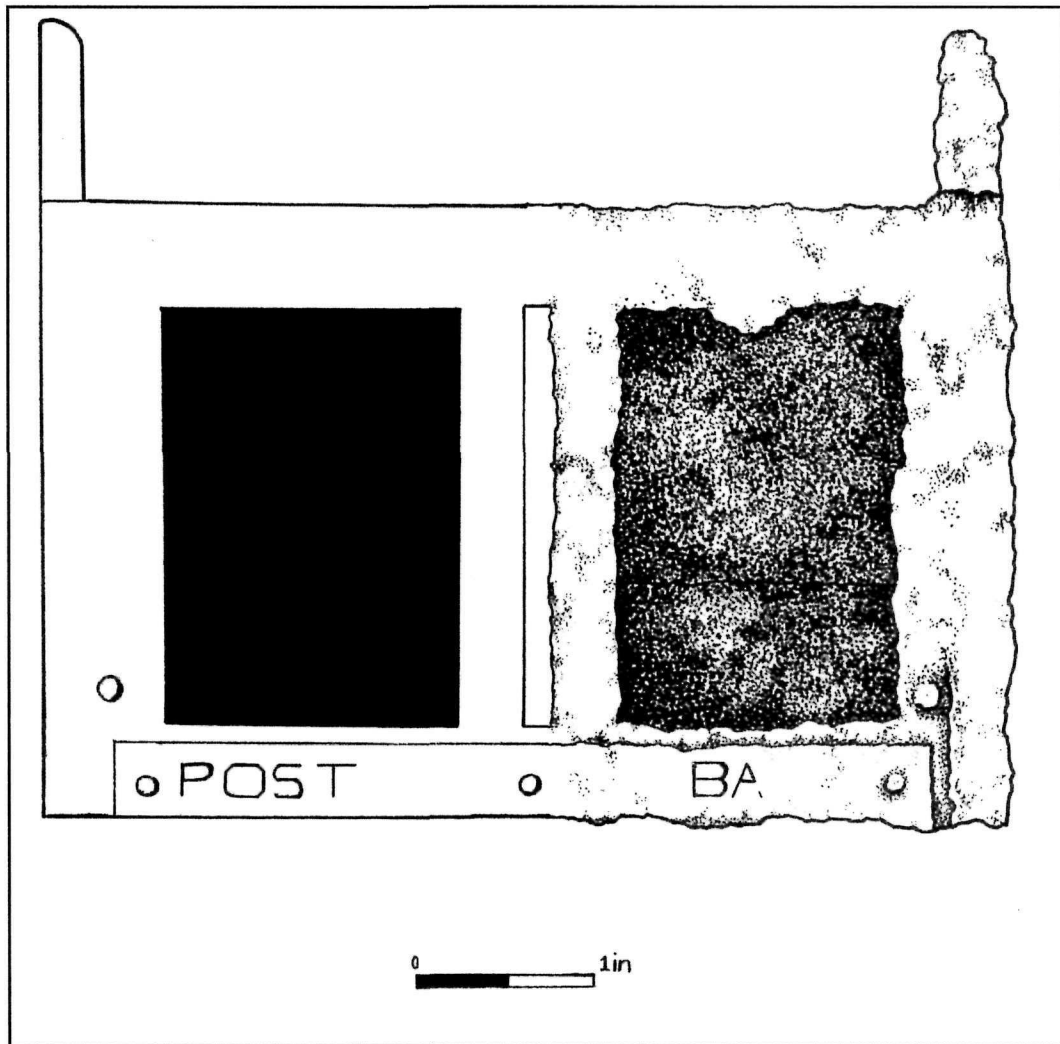
correspondence. Although this one was more utilitarian than decorative, two similar objects were seen in reprints of the Wm. Frankfurth Hardware Company's 1885 catalog. A "Bill Head" sold for \$12/dozen, and a "Post Office" sold for \$15/dozen (Barlow 1992:188).

## PERSONAL ARTIFACTS

The Moore family occupied this site for the first 10 years, while the site was occupied by the Kirmse family for the next 65 years. During that time, artifacts representing the personal tastes and pastimes of some of these men, women, and children were eventually lost or discarded into the soil matrix that became our archeological deposit. It is from this category of artifacts that we get our closest glimpses of these past residents. The "Personal" artifacts are detailed in appendixes 10 and 11, and are summarized in table 19.

## Medicinal Artifacts

Artifacts related to medicine made up the largest portion of the personal artifacts. They were disproportionately concentrated in the base of the Moore privy where 56 whole bottles were found. Unlike many turn-of-the-century preparations that were sold in embossed bottles that advertised their manufacturer and remedy, almost all of these bottles were colorless ovals, clarified with manganese, that ranged in size from 2-6 ounces (figure 61). Most bottles had applied, prescription finishes and a defined, but unindented, front panel where a paper label could be applied. These generic bottles were manufactured by most turn-of-the-century glass manufacturers, and had fairly standard names with slight variations in bottle styles. Bottles found at this site were in the Philadelphia, Baltimore, Hub/Golden Gate, and Western styles; ranged in size from 2 oz.-32 oz.; and wholesaled for \$6-\$30.75 per gross. All had short necks with prescription lip finishes, but base and shoulder styles varied (Lohmann 1972:12-15; Putnam 1965:30-32). Another generic bottle style found among the privy bottles were "Blakes", a bottle that had a roughly octagonal base and sometimes had "chamfered" shoulder corners. The standard sizes were "short" and "tall" Blakes, in sizes from 2 oz.-32 oz. and prices that ranged from \$6.25-\$35 per gross (Lohmann 1972:16-17; Putnam



**Figure 60.** *Drawing of ferrous metal letterbox, Catalog No. 34337, Feature 23, Kirmse dump. April Hayes.*

65:31). The only glasshouse marks were from the Frank E. Reed Co. of New York City, and little is known about their operation; but the marks are believed to date to approximately 1898 (Pollard 1993).

In the Sears, Roebuck catalog (1968 [1897]:no page no.) similar bottles often contained laudanum (tincture of opium), paregoric, sweet spirits of Nitre, sweet olive oil, or spirits of camphor. Many of the bottles found at the base of the privy were still sealed with cork stoppers, and samples were taken of some of the contents. Typically, the alcohol or opiate content of the medications was very high. For a more

complete discussion of medicine at the beginning of the twentieth century, see the discussion in the Block 39 report (Cooper 1998:240-244). Skagway in 1899 had six doctors, four dentists, and four drugstores (Clinton 1899). It is important to remember that although many of these preparations obviously contained high amounts of alcohol and sometimes opiates, and though they could be addictive, they are also often found on sites with children. The presence of these preparations can be linked to a concern for the children's health, especially given the high mortality rates present at that time. At the same time, women at the turn-of-the-century were not allowed in saloons, and prescription medicine offered a socially

**Table 19 - Personal Artifacts**

	<b>Frag Ct</b>	<b>MNI Ct</b>	<b>Frag %</b>	<b>MNI %</b>
Medicine	316	153	31%	29%
Grooming & hygiene	235	95	23%	18%
Personal/adornment	37	24	4%	4%
Clothing	226	140	22%	26%
Leisure/indulgences	118	62	11%	12%
Personal, unid. function	98	59	9%	11%
<i>Totals</i>	1,030	533	100%	100%



**Figure 61.**      *Photo of medicine bottles from the base of the Moore privy.*



acceptable alternative. Because addiction to medicinal products containing high amounts of opiates and alcohol was typically seen as a “woman’s problem,” there is a tendency to link use of this medicine with Minnie Moore, or the children, rather than with Ben Moore. For Minnie Moore, the double burden of being both a woman and a Tlingit meant that it would have been social suicide to ever be seen in a state of intoxication. However, we do know that Ben Moore was also concerned with his health. Written on the east wall of the living room, and revealed during restoration of the house, was his note: “Quit smoking, August 13<sup>th</sup>, 1900. Am taking creosote medicine, August 16<sup>th</sup>, 1900.” Eventually, he died from tuberculosis.

The only embossed bottles at the base of the Moore privy were cobalt blue Bromo-Seltzer, ranging in sizes from 2-5 ounces. Several had a glasshouse identified on the heel: AB CO., which may be the American Bottle Company (Toulouse 1971:30). Bromo-Seltzer has been a brand name since 1889 (DePuydt et al. 1997:183), and cobalt blue has been its exclusive color since its formulation. The first plant for its manufacture was built in 1891 (Eastin 1965:16). The bottle was sold as a generic style by some glass manufacturers, in sizes ranging from 3/4 oz. to 32 oz., at \$6.75-\$32 per gross (Putnam 1965:37). Eventually, perhaps as early as 1907, the Maryland Glass Corporation was given the sole license for its distinctive bottles (Eastin 1965:16). Bromo-Seltzer was marketed as a digestive remedy, and a cure for headache, nervousness, or brain fatigue. The American Medical Association especially took umbrage with an active ingredient in early Bromo-Seltzer, acetanilid ( $C_6H_5NHCOCH_3$ ), noting its “heart-depressing” actions (Adams 1905:38). Acetanilid is the parent drug of the para-aminophenol derivatives (such as acetaminophen); and while it has analgesic and antipyretic actions, it is still noted as being “excessively toxic” (Dorland 1988:12). Today, it is still banned or regulated and “has been lethal to man at 59mg/kg” (Sittig 1991:21). Several complete bottles were also recovered from the Kirmse privy. Two oval bottles, still tightly stoppered, contained a dark brown liquid that very possibly was cough syrup. Another bottle, also found with its cork stopper but with no contents present,

was embossed with a “3ii” on its front; and its base mark (“I” in a diamond) indicates the bottle was manufactured by the Illinois Glass Company sometime between 1916-1929 (1987a and 1987b). The bottle style was similar to the “Prima oval” in the old glass manufacturer’s catalogs because of the graduated marks on the side of the bottle (Putnam 1965:23).

A few bottles that were recovered from non-privy contexts were manufactured by the Whithall-Tatum glasshouse of New York and New Jersey. From the Kirmse dump came an incomplete, small, cylindrical colorless SCA glass bottle that had contained less than one ounce and had a base mark of W.T. & CO., pre-dating corporate changes that changed their base mark in 1902 to W.T. CO/USA. That mark was seen on a small, cylindrical, cobalt bottle base fragment, in the pre-1940 deposits, that was embossed with a diamond pattern. This color and pattern were associated almost exclusively with that company’s distinctive poison bottle, which they sold in 2-ounce sizes for \$3-\$4.75 per gross (Munsey 1970:161). This bottle pre-dates their 1912 switch to automatic bottle machines.

Two other products could be identified by manufacturer. One was a complete, small translucent white glass “Mentholatum” jar found under Shed 1. The Yucca Company of Wichita, Kansas, was founded by Alexander Hyde, and manufactured Mentholatum. By 1906 it was incorporated, with offices in Buffalo, New York (Fike 1987:83). The distinctive jar design was patented in 1892 for a term of 14 years, and was assigned to Whithall, Tatum & Co. A similar jar was found during excavations at the Peniel Mission site in Skagway (DePuydt et al. 1997:187). Another traceable bottle, found in the post-1940 deposits, was a fragment from an aqua bottle manufactured by the Maguire Medicine Company of St. Louis, Missouri. According to reference material, the label described the product as an “extract of Benne plant and Cathechu Compound ... A valuable remedy for diarrhea, dysentery, cholera morbus, summer complaint, etc. Same formula since 1846...” (Fike 1987:149). The functions of other medicinal bottles could sometimes be ascertained through comparison to glass bottle manufacturer catalogs. A 1" high hollow glass stopper, with a faceted domed top, is similar to varieties sold to top tincture bottles in the Illinois

Glass Company's catalog (1987b) and were sold as "Shop Furniture" in the earlier, pre-automatic bottle machine catalogs (Putnam 1965:99). A one-half ounce, amber cylindrical, machine-made vial manufactured by the Illinois Glass Company ("I" in a diamond) was found in the post-1940 deposits. It is most similar to the "round corn cure" bottle seen in their ca. 1920 catalog (1987a:153) (figure 62). In the Moore dump fragments of a colorless SCA square vial were recovered, a style that sometimes was used for "British Oil" (Putnam 1965:27). Fragments of at least five homeopathic vials, probably manufactured from borosilicate glass, held less than one-half ounce each, and were all found in later deposits: the Kirmse dump, the 1940 Trench, and the pre- and post-1940 deposits. By 1920, these vials were manufactured by automatic machinery and were "made of special glass" (possibly borosilicate). These "long homeopathic vials" were sold in sizes from 1/8 drachma and were supposed to be "especially strong, accurate and dependable" (Illinois Glass Company 1987b:228). The machine-made vials were very similar to the homeopathic vials seen in the earlier bottler catalogs, that ranged in size from 1/8 drachma-2 dr. size that sold from \$1.12-\$1.50 per gross (Lohmann 1972:37; Putnam 1965:119-120). The vials were most often used to hold pills.



**Figure 62.** Round corn cure vial, manufactured by the Illinois Glass Co., 1916-1920.

Several non-bottle medical artifacts were also recovered in these excavations. At the base of the Moore privy, a black rubber funnel and syringe were recovered. Thermometer fragments were found in the

1940 Trench and the 1985 disturbance. Slender, glass pipettes were found both in the pre-1940 deposits, and in Kirmse Dump #2. In the early bottler catalogs, these were sold as droppers with a rubber bulb on one end (Putnam 1965:125).

Although the minimum number of medically related artifacts was high (n=153), it only accounted for 29% of the artifacts in the "Personal" category. This was less than their percentage from the NPS excavations on Block 39, although the actual quantity was larger (at Block 39, the total estimated minimum number of medicinal artifacts was 44) (Cooper 1998:344, 366).

### Grooming & Hygiene

Various types of artifacts were included under the "grooming and hygiene" category. Some, like combs, mirrors, Listerine, or perfume bottles are obvious. Others might question the placement of bobbins, safety pins, or scissors here. Since we don't have a separate category for "sewing," and clothing is reserved for artifacts that could have been worn, they have been placed here. Researchers using this database for other research objectives can separate them out if they wish.

Although a bobbin and broken pair of scissors were found in the Kirmse privy, the most common non-toiletry artifact was the safety pin. Whole or partial pins were found in a great variety of deposits — from the Kirmse dump and privy, to the areas in and around the shed and boardwalk. This is not surprising given their everyday utility. Pins date back to early prehistoric times and were usually made of bone or vegetal material. The safety pin was in common use by the time of the Klondike Gold Rush and was sold as safety pins (2¢ per dozen), or large safety "blanket" pins (3¢ each) (Sears, Roebuck 1968 [1897]:322). Both sizes were found at this site.

Some of the more distinctive artifacts could further be subdivided into categories of male and female use. Several decorative glass stoppers were found, minus their bottles. One found in the pre-1940 deposits on the south side of the house had a ground glass shaft, with a pressed glass, clover-shaped finial. In the Moore dump, a crown-shaped finial had a clear glass shaft that was probably sold as a "peg stopper" by the glasshouse and would have been later

seated into a cork stopper (Putnam 1965:82). Two identifiable perfume bottles were found, the most spectacular being the whole "Crown Perfumery" bottle, complete with stopper and intact contents, found in the Kirmse privy (figure 63). The Crown Perfumery was a London company, in business from at least 1872. After 1900, the product was carried by W. H. Schieffelin of New York, and after 1948 it was produced by Schieffelin & Co. (Fike 1987:56-57). A six-ounce colorless glass, oval toiletry jar was found in the Kirmse dump and close to the house. Matching lids were also found in the Kirmse dump. All these artifacts could be associated with use by female members of the household.

Several artifacts connected to male grooming activities were recovered from the site. A complete, 6-ounce oval bottle from Feature 23 of the Kirmse

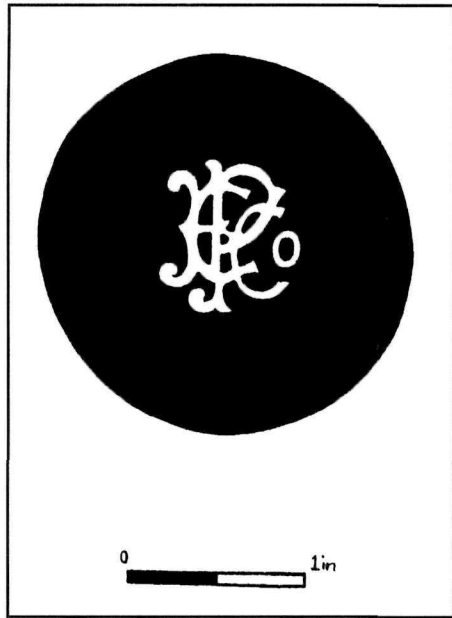
dump was used to encourage male hair growth: PAUL WESTPHAL/AUXILIATOR/FOR THE HAIR/NEW YORK. Advertised in 1875, the product was still being advertised as late as 1948 by Paul Westphal of New York City (Fike 1987:126). One whole and several fragmented opaque white glass flasks had a unique shape, with a narrow side opening for a few drops of liquid at a time, most likely for some kind of hair oil. This vessel shape was not seen in any glass catalog, and the words FLASK/ PAT-ENTED appeared on its bottom; but no date or manufacturer information was present. It was found in the Kirmse deposits.

Opaque white glass was commonly used for toiletry vessels (Putnam 1965:91). Fragments from various containers were ubiquitous across the site and accounted for 25% of the grooming and hygiene artifacts, but were not further identifiable. A 2" high colorless, cylindrical vial, recovered from the post-1940 deposits, still had remnants of a glass rod inside. Although often used for preparations like mercurochrome, because this vessel was colorless, it instead may have held an "essential oil" preparation (James 1967 [1902]:3). One light metal threaded lid may have once covered talcum powder. An embossed monogram was visible on the inside of the lid, but the manufacturer could not be identified. The monogram is illustrated in figure 64.

One chamberpot was recovered from the site. An unadorned, white ironstone pot, it was manufactured by the Knowles, Taylor & Knowles pottery in East Liverpool, Ohio, sometime between 1890 and 1907. Still in a usable condition, but with a very worn footring indicating it had served its function for quite some time, it was found in the upper levels of the fill for the Kirmse privy. Perhaps it was a celebration after the family finally decided to rely on the indoor plumbing installed ca. 1914-1917.



**Figure 63.** Photo of Crown Perfumery bottle, London, Catalog No. 33345, found in Kirmse privy.



**Figure 64.** Drawing of monogrammed talcum powder lid. Catalog No. 36503, from Q2-4 in the Moore House shed.

### Personal/Adornment

Most of the artifacts in this classification could also be associated with use by females. The exceptions are a pocket watch (identified from component parts found in the Kirmse dump) and a 4-bladed pocket-knife with a mother-of-pearl handle found underneath the floor of the old shed.

The majority of the artifacts were found in the deposits of the Moore dump (38%), but mainly consisted of unidentifiable fragments of copper alloy wire too fragile to have been used for anything besides jewelry. Also, the wire was found in context with a chain link and a pin decorated with a fringe and tassel design. An identifiable piece of metal jewelry was found in the Kirmse dump yard deposits, a small (7/8" long) silver violin charm, with a loop for attachment at its top (figure 65b). Another possible charm, shaped like a flower, was also found in the Kirmse dump (figure 65c). Two opaque glass, tear-drop shaped artifacts — one white, the other green — at one time were probably part of an earring or pendant (figure 65a shows the green pendant). Although both were found in the post-1940 deposits, the green pendant was found on top of the Kirmse privy. Beads were the most common personal artifact

found at the site and were found in all the datable deposits. All were round, although several were slightly irregular, four were white (three from the Moore deposits), and three were blue (although one from the Kirmse dump was only a seed-sized bead). Several trade beads were found inside the walls of the house when restoration began (figure 65d). These beads are uncommon on non-Native sites, and it is believed they come from the time when the Moore family lived here.

### Clothing

Large varieties of artifacts related to clothing were found during excavations at this site, and they made up 26% of the "Personal" artifacts. Because they were found in an archeological context, most bits of fabric and leather could not be identified specifically to a garment or footwear style, or to sex or age of the wearer. A few exceptions were possible when most of a shoe sole was present for measurement. Moore family lore states that Minnie Moore was a very accomplished seamstress (J. Campbell et al. 1997, pers. comm.). When Catherine Blee archeologically recovered artifacts from the floors and walls of the original Moore cabin, she found many identifiable parts of garments worn by members of the Moore family. She also found that Minnie Moore was able to replicate many popular styles of the day in the clothing she made for her family (Blee 1988:208-223). Most of the identifiable fragments did come from the Moore privy, but this was probably due to the better preservation of textile material in the anaerobic environment present at the base of the privy.

Buttons are often the only thing that are durable enough to survive in the soil, and they do make up the largest class of clothing-related artifacts recovered from this site (n=55, 39%). Figure 66 illustrates some of the buttons recovered from the Moore and Kirmse dumps. Twenty-one were undecorated shell buttons (39%), two and four-hole sew-through style. Most buttons were 4-hole, sew-through buttons (n=28, 52%), most commonly made from fresh or salt-water shells. Seventy-four percent (n=40) of all the buttons were, in fact, undecorated. The most common decorated button was made of metal and attached to a garment by a shank. Shank buttons, however, only comprised 31% of the button collec-



**Figure 65. (right)**

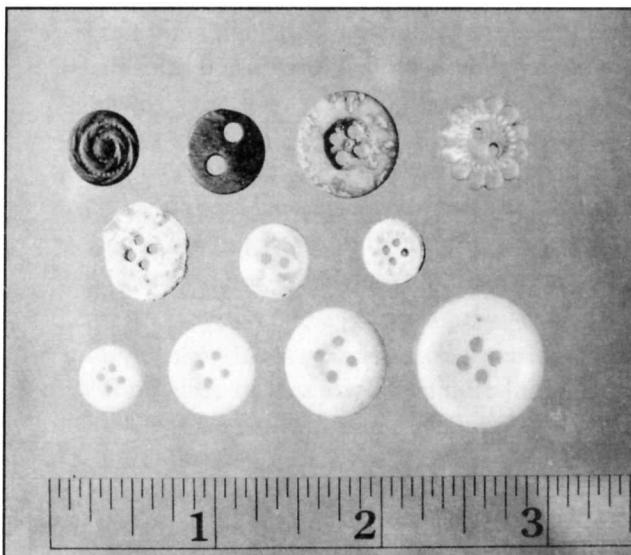
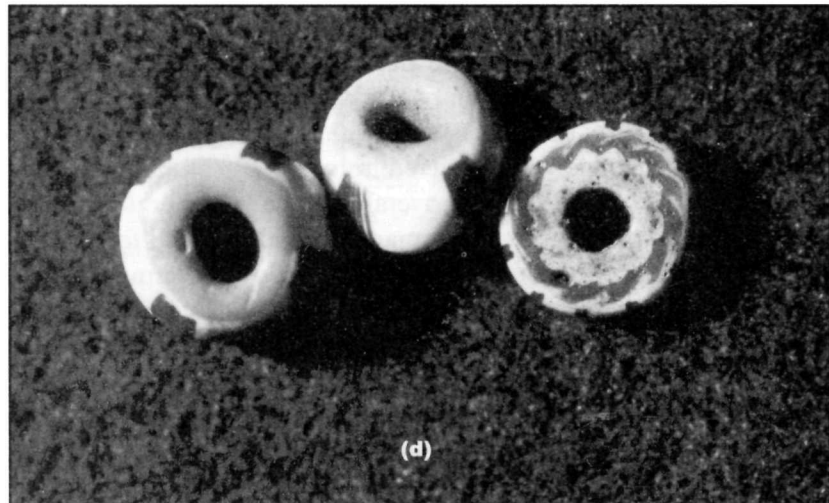
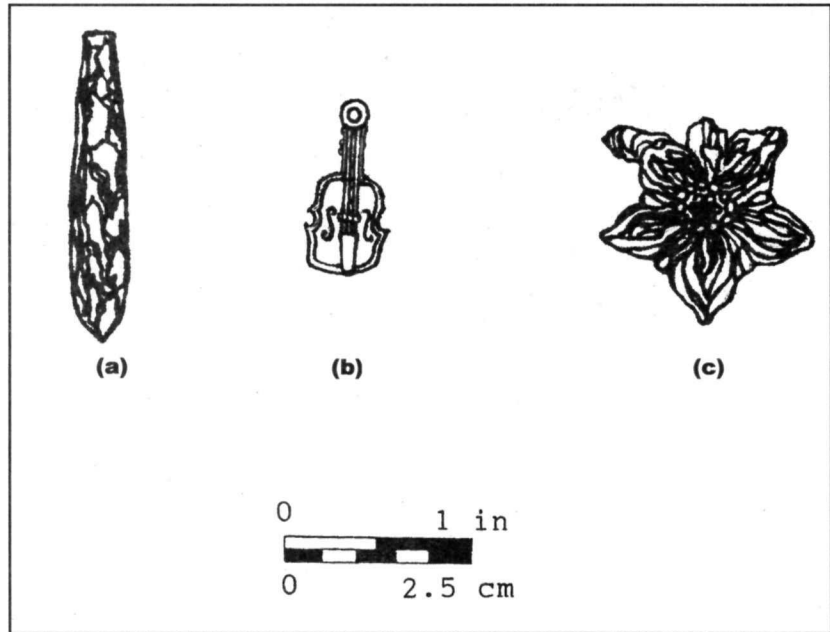
*Jewelry artifacts from the site.*

(a) Opaque green glass pendant, Catalog No. 35434, Kirmse privy.

(b) Metal violin charm, Catalog No. 35698, Kirmse dump.

(c) Metal flower charm, Catalog No. 39566, Kirmse dump.

(d) Ceramic trade beads, Catalog No. 35645, inside the Moore House.



**Figure 66. (left)**

*Photo of various button types found in the Moore and Kirmse dumps.*

*Top row: metal, bone and glass buttons.*

*Middle row: shell buttons.*

*Bottom row: Prosser "china" buttons.*



tion. Buttons at this site were sized according to the “lines” method commonly in use at this time. Shank buttons had the greatest range of sizes, from the small shell or white glass buttons used for trim (12 lines) to the large 30-line coat buttons. Although the 4-hole sew-through buttons ranged in size from 16 lines to greater than 24 lines, 1/3 were sized at 16 lines. Most of the 2-hole, sew-through buttons were smaller and ranged from 14-20 lines. Only one button had any manufacturer’s information — a black, rubber shank button with a cross-weave pattern was manufactured by the Dickinson Hard Rubber Company of Springfield, Massachusetts (figure 67a). Although there is also a date of “1875” incised on the button’s reverse side, this may not have been the date it was manufactured, but may refer to the patent date. It was found on the west side of the house, in a soil stratum that dates to the Moore family.

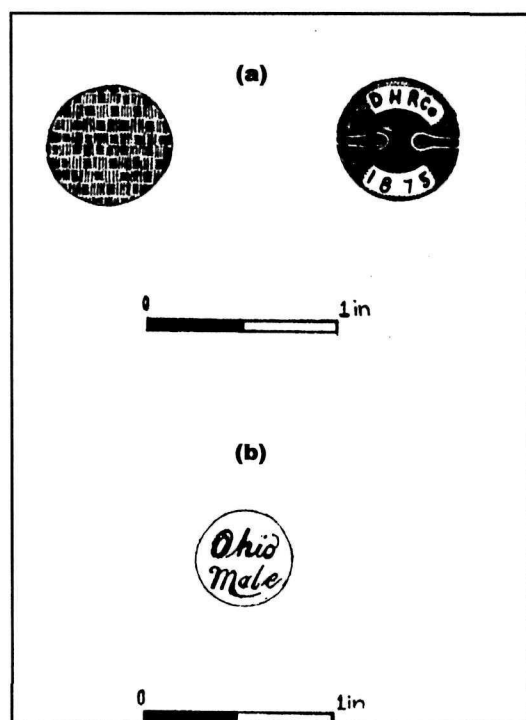
Other types of garment fasteners were also present: buckles, suspender slides, a snap, and a hook-and-eye fastener. Bib overalls are usually fastened with a distinctive button, and one was recovered from the Kirmse privy (figure 67b). Although overalls can be worn by women, in the past they were manufactured for men. This suspender button is incised with “Ohio Male.” Quite a few garter fasteners, designed to hold up socks or stockings, were found in the Moore

dump. Several patent dates were identified: VELVET GRIP/BOSTON GARTER/PAT 12-18-00, and LINDSEY/PAT JULY 2, 95/FELT FINISH/AUGUST 9, 98. The Lindsey garter, patented by Charles W. Stinson of New York City, was found on similar artifacts from the Block 39 excavations (Cooper 1998:209). Another fastener that looked like a decorative safety pin was patented by Christina J. Haley of New York City as a “Hose Sleeve/Garment Supporter” and was identified from the patent date of June 23, 1885, that appeared on the artifact. All of these patented fasteners were found close to the small jewelry deposit in the Moore dump.

Some footwear could be identified. One was a slip-on, black rubber boot from the right foot of an adult and was manufactured by the Boston Rubber Shoe Company. Unfortunately, it was found in the mixed context below the floor of the shed. The sole of two child’s shoes were found, one from the Kirmse dump and the other below the floor of the shed. Parts of two different shoes were found in Feature 22 in the Moore deposits, very close to the original rear wall of the cabin. One was the heel of a shoe, and the other was a female adult’s shoe sole, based on the small foot size. Nothing about the shoe style could be determined. The rest of the footwear was represented by leather fragments, shoe tacks, and bronze grommets to lace up the shoes.

### Leisure/Indulgences

Artifacts classified in this category were further subdivided, where possible, into adult and child-related classifications. There were actually very few artifacts that were associated with adult activities. Most were from the many children’s activities that took place here through the years. There are many newspaper accounts that describe the many parties given at this house by the Kirmse family. The Moore family also had several well-documented, large social engagements at the house. The many decorative porcelain cup and saucer fragments found at the



**Figure 67.** Drawing of rubber button and suspender fastener.

(a) Black rubber button, manufactured by the Dickinson Hard Rubber Co., Massachusetts, Moore deposits, Catalog No. 33605.

(b) Brass suspender button, manufacturer unknown, Ohio (?), Kirmse privy, Catalog No. 35446.

site, especially in the Kirmse deposits, were probably associated with these entertainments. However, their obvious use was to hold coffee or tea, and they were thus included in the food classification and prior discussion. Other artifacts related to adult leisure activities included numerous fragments of phonograph records, probably 78 rpm, that were found in deposits dating to the Kirmses, especially in the post-1940 stratum. Another artifact that was included in the adult class, but could certainly also belong to an older child, was a bone gaming die with incised holes, found in the 1985 disturbance. It may have originally been from either the Kirmse Dump #2 or the Moore deposits since it probably pre-dates 1920, when only celluloid dice were being sold by Sears (Sears, Roebuck 1905-1930).

Smoking, especially of pipes, is an activity that is traditionally viewed as a male activity. Two cans could be identified as having the slip lip and traditional shape of tobacco cans. Two glass fragments were identified as coming from glass humidior containers, used to hold pipes or tobacco. We do not know the smoking preferences of the men who lived in the Kirmse residence. However, we know from the handwriting on the wall that Bernard Moore, at least at one time, smoked. An incomplete humidior from the pre-1940 deposits, found during 1988 excavations, had this embossed text on its base:

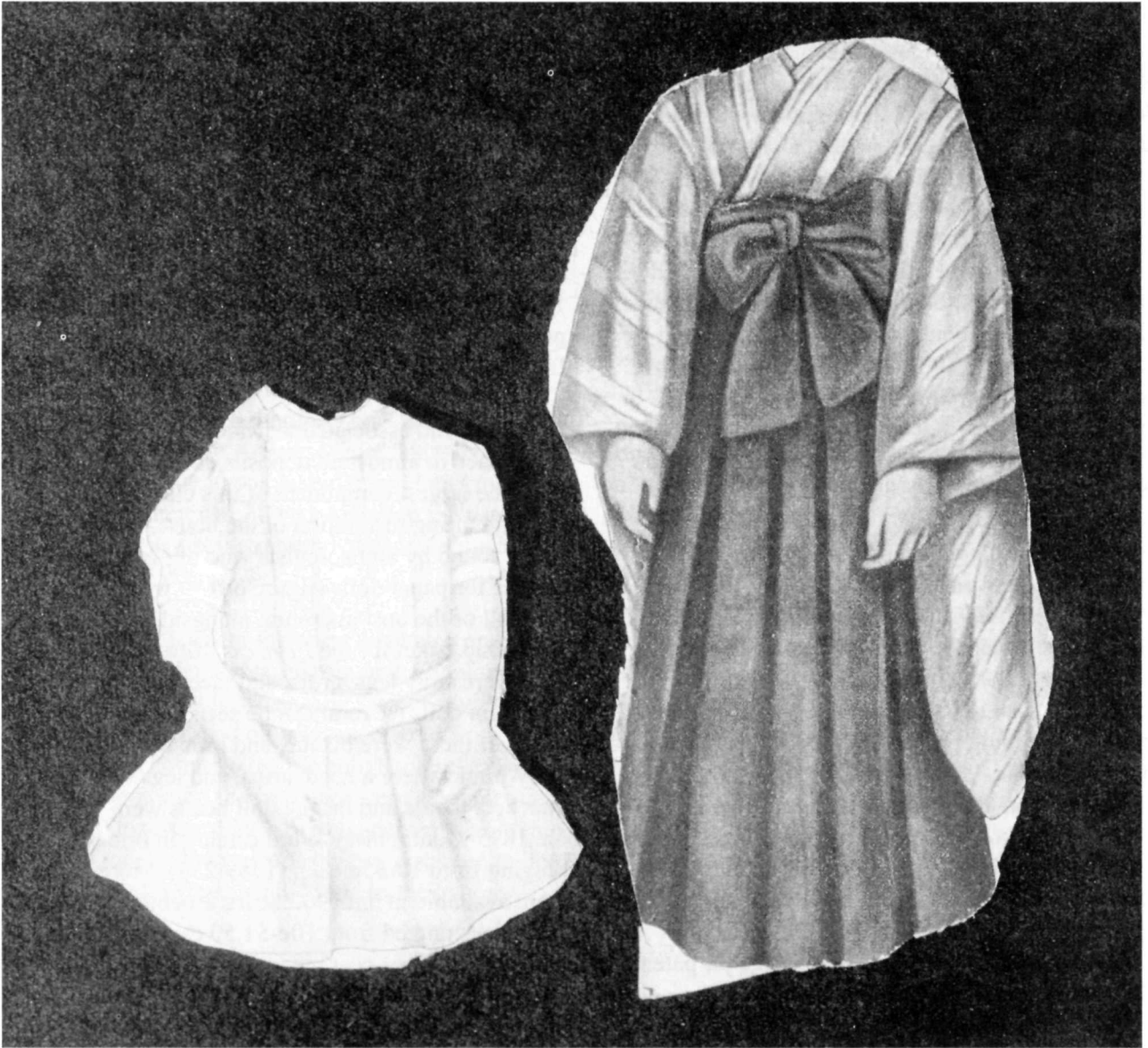
[PATENT]ED JUNE 9,0[3]/[L]ITTLE BETT\_\_ in a circle on the base. Believed to be from a jar patent filed by William S. Weir of Monmouth, Illinois, it was for a jar with a gasket seal (United States Patent Office 1903). The other humidior basal fragment, found in the Kirmse dump, lacked any identifying script, but was identified by its shape and design.

There were various toys and toy fragments found across the site. Continuing use of the house and yard by children was evidenced by porcelain doll fragments in the very earliest, and deepest deposits of the Moore dump right through the plastic toys found in the more recent deposits. An unique phenomenon in the past 150 years is the growth of the "cult of the child." Both on farms and in factories, the opportunity for a child from a low- or middle-income family to have an extended period of "childhood" was negligible in the 1800s. By the onset of puberty, many children were already being pressed into the world of the working adult. Often, the types of toys during this period were also limited, and handmade.

It was not until the 1860s that commercially manufactured indoor toys became accessible (Schroeder 1971:11). Toys at first had a few, limited pages in the mail order catalogs, and many of those were outdoor toys — sleds, wagons, and so on. Before World War I, most toys sold in the United States were actually manufactured in Europe, and that imbalance did not change until afterward, when American manufacturers finally dominated the market (Schroeder 1971:12). Today, that manufacturing dominance has probably again shifted, this time to the Third World factories.

Doll parts and associated teaware were found in abundance in almost all deposits at this site, and they were the largest component of this classification (35%). During restoration of the house, something rarely found by archeologists who dig in the dirt — clothes for paper dolls (figure 68) — were found in the wall of the upstairs room, alongside a 1904 steamship ticket for the *Princess May*. More common were stray legs, arms, and faces from broken porcelain dolls (several can be seen in figure 69). Some of these were bisque, and probably had a cloth body/trunk where a head, arms, and legs were attached. China and bisque doll heads were sold in the 1895 Montgomery Ward catalog in prices ranging from 10-35¢ each (1969:234). More styles were available in the 1902 Sears, Roebuck catalog, and prices ranged from 10¢-\$1.50 each; doll heads with moving eyes cost more, from 15¢-\$1.65 (Sears, Roebuck 1993 [1902]:914). Many doll body fragments were pale pink, and the leg fragments all had molded and painted socks and shoes. Dolls with painted socks and shoes were sold as "Dressed French-Jointed Bisque Dolls" in the 10¢ assortment in the 1895 Butler Brothers catalog (Schroeder 1971:94). A few arm fragments were found, and they were much smaller and came from smaller dolls. Several fragments had holes for a wire to attach arms to the doll's body. Only one manufacturer mark was identified: from the second Kirmse dump, the scripted "S" on a doll arm may have been from the Spode pottery in Staffordshire, England which used that mark from 1822 until 1933 (Kovel and Kovel 1986:211). Another doll part from that deposit had partial text that could not be identified: ..USEILLC../..NN..

In the deposits of the Moore dump, several dolls were of the early, non-jointed type called "Frozen



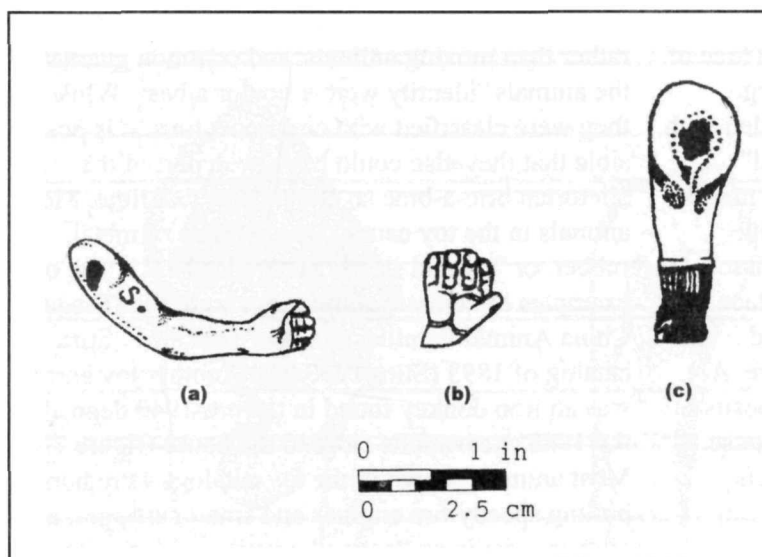
**Figure 68.** Park photo of paper doll dresses found inside walls of Moore House, Moore family, Catalog Nos. 39448 (left) and 39447.

Charlotte” (Angione 1981:95). Two of these, found together and made of unpainted porcelain, were a pair — a girl, undressed except for a bonnet, and another undressed figure that appears to be a boy. A similar doll, found in the pre-1940 deposits of the 1988 excavation, was an unglazed kaolin clay doll called an “Old White” (Angione 1981:95) with missing, jointed arms. Similar dolls were advertised in the 1895 Butler Brothers catalog and ranged in price from 24-84¢ per gross (Schroeder 1971:92).

Toy porcelain teaware cups and saucer fragments were found mostly in deposits associated with the

Moore family (figure 70a). Although many decorated teaware sets are available in the catalogs, the toy dishes from this site were all plain. Several different cup styles were found, so more than one toy tea set was represented. A comparable set sold for 10¢ in the 1895 Montgomery Ward catalog (1969:231) (figure 70b). Several doll parts and doll teaware are now on display in the restored Moore House.

Some of the better-preserved children’s artifacts were found beneath the floor of the shed. Two 1" wooden, alphabet blocks (figure 71) matched those sold in the 1910 Sears, Roebuck Catalog. Similar



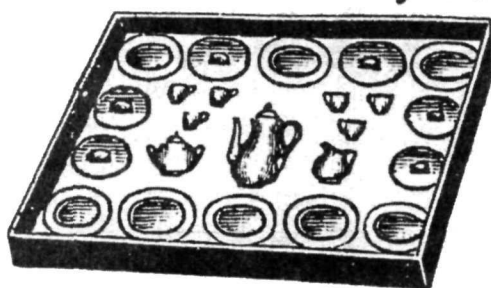
**Figure 69.** Drawing of ceramic doll parts.  
 (a) Left, porcelain arm, Catalog No. 39113, manufactured by Spode (?), England, 1822-1933, Kirmse dump #2;  
 (b) Middle, porcelain hand, Catalog No. 34838, pre-1940 strata;  
 (c) Right, doll leg, Catalog No. 39090, Kirmse Dump #2.



(b)

231

### China Toy Tea Sets.



- 25155 Set consists of cups, saucers, tea pot, sugar bowl and cream; small size; packed in paper box. Price....\$0.10
- 25156 Same description as above but larger. Price \$0.25
- 25157 Set consists of decorated plates, cups, saucers, tea pot, creamer, sugar bowl; good sized dishes. Price.....\$0.50
- 25158 Same description, but larger. Price..... .75
- 25159 Same, but larger size and assortment. Price..... 1.00
- 25163 White Stone China Tea Set of 24 pieces, as follows: 6 plates, 6 cups, 6 saucers, 1 sugar bowl and cover, 1 tea pot and cover, 1 creamer, 1 slop bowl. This set is large enough for a miss from 8 to 14 years of age. (Not safe to send by mail.) Weighs 8½ lbs. Per set.....\$1.25
- The pieces in this set are larger than usually sold in toy sets; the cups stand 2 inches high, and the plates measure 4½ inches across.

**Figure 70.** Photo of porcelain toy teacup and advertisement for toy tea set.

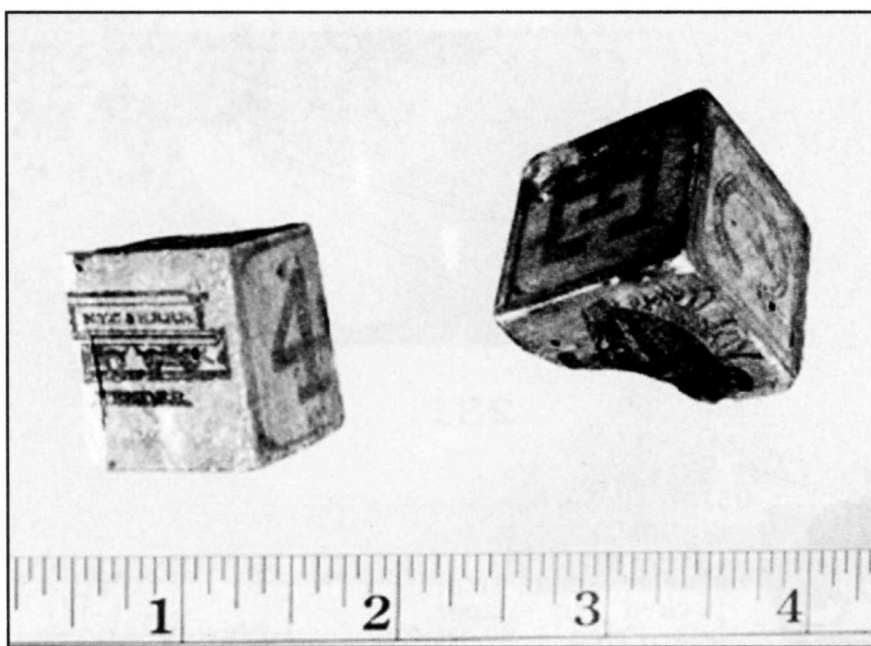
(a) Porcelain toy teacup, Catalog No. 34214, manufacturer unknown, pre-1940 strata;  
 (b) Advertisement for similar set from 1895 Montgomery Ward Catalog.



blocks were advertised as early as the 1889 Montgomery Ward Catalog (Schroeder 1971:38). Three of the site's nine marbles were found here. A large, white, porcelain "boulder" marble was encircled with jagged blue and green lines. Two glass "spiral" marbles had a "net" style core. Another glass marble, found in the Moore dump, was handmade, with marks on each end from cutting by marble scissors. Heavily pitted, the marble had an uneven surface and was not entirely spherical. Inside were swirled, colored ribbons grouped around a divided core. A similar marble was found in the pre-1940 deposits of the 1988 excavations in front of the Moore House. Four were earthenware marbles, three of which retained some painted decoration.

paint still adhering. They would have been static rather than moving animals, and common guesses to the animals' identity were a lion or a bear. While they were classified with children's toys, it is possible that they also could have been part of the Victorian bric-a-brac so common at that time. Most animals in the toy catalogs were made of metal, rubber, or "natural skin" (Schroeder 1971). The only examples of ceramic animal toys were the "Bisque China Animal Families" sold in the Carl P. Stirn catalog of 1893 (Stirn 1990:41). Another toy animal was an iron donkey found in the pre-1940 deposits of the 1988 excavations close to the house (figure 73). Most animals shown in the toy catalogs were horses pulling speedy fire engines and smart carriages, and all were cast in an "action" position — legs running, manes flying. This little donkey has a very tired look, and only a few of this type can be found in the catalogs, always pulling utilitarian delivery or other work wagons.

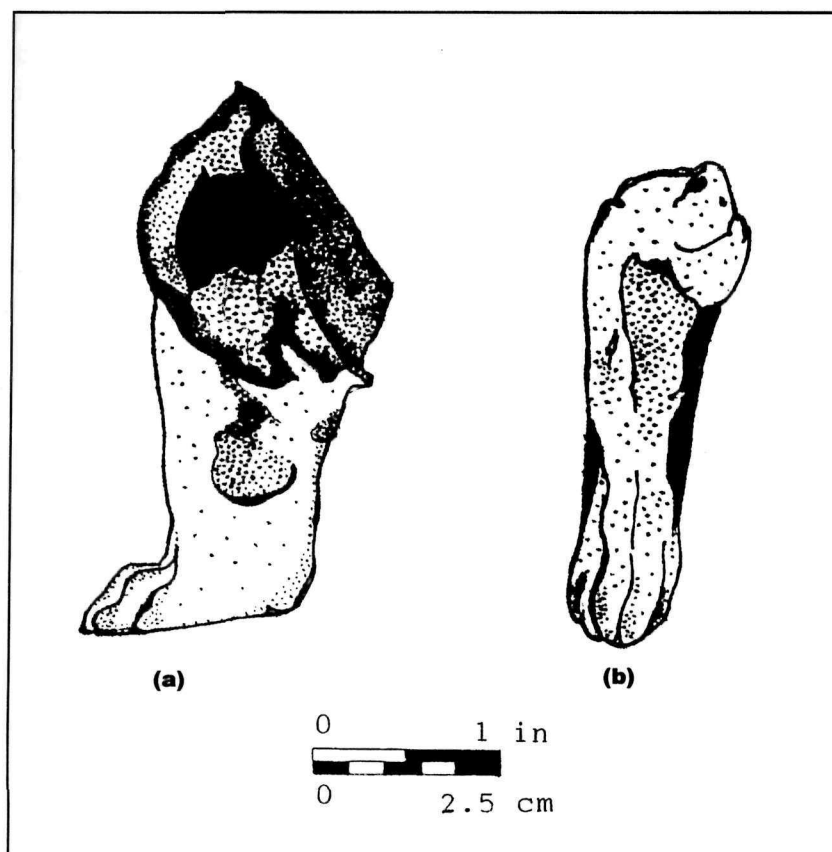
Some of the toys found in our excavations around the Moore House are on exhibit there — a bronze whistle, marbles, wooden blocks, and some of the doll parts and doll teaware pieces. They help to interpret the life of a gold rush era child, since very few children lived in Skagway during the Klondike Gold Rush. Children were at this site from 1896 until about 1925, when the youngest Kirmse child would have been sixteen. Plastic toy pieces from the post-1940 deposits are believed to be from the 1960s or 1970s when Mrs. Georgette Kirmse's grandchildren paid summer visits.



**Figure 71.** Photo of toy wooden alphabet blocks, Catalog Nos. 36640 and 36653, MH Shed.

In the Moore dump, several stoneware legs may represent a crude toy animal (figure 72 shows two of these legs). Three legs were from at least two different animals and were very muscular, one with black



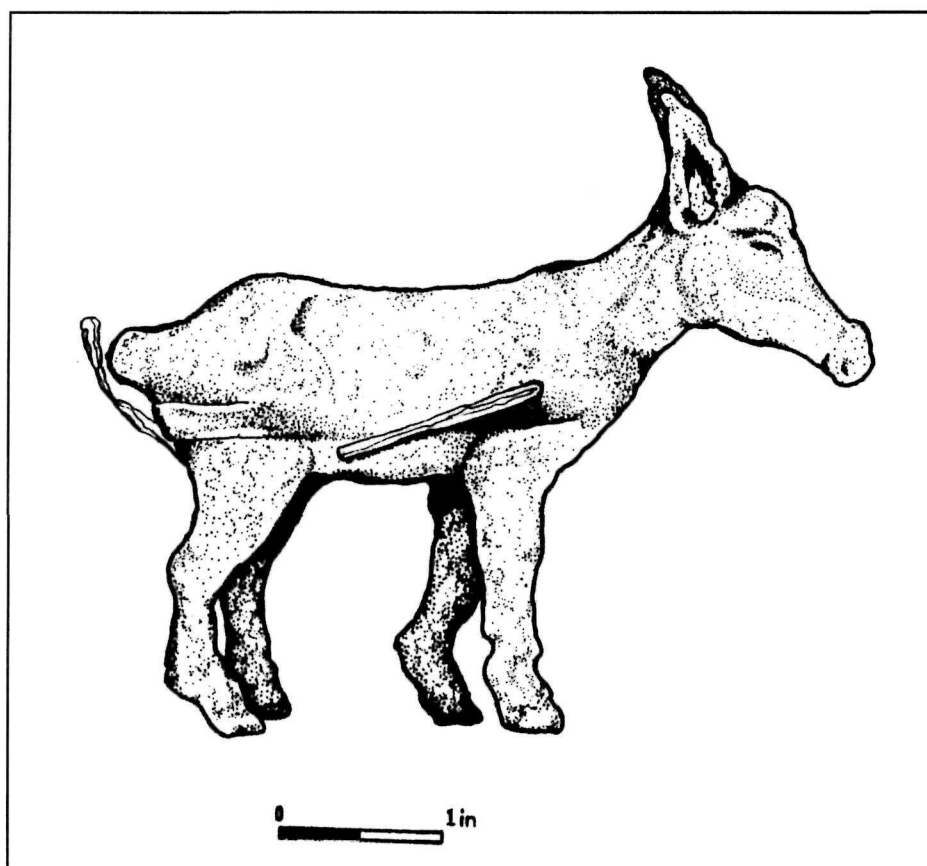


**Figure 72.**

*Drawing of stoneware animal legs from the Moore dump.*

*(a) Left, hollow lion (?) leg, Catalog No. 34532;*

*(b) Right, solid animal leg, Catalog No. 35593.*



**Figure 73.**

*Drawing of ferrous metal donkey, pre-1940 strata, Catalog No. 32741.*

## SPECIAL FUNCTION ARTIFACTS

This classification of artifacts was designed to separate out unusual artifacts or those that filled special roles. These artifacts are detailed in appendixes 10 and 11 and summarized in table 20.

Munitions, mostly spent cartridges from hunting rifles, were the most common special function artifact at this site. The numerous flowerpot fragments are also an important part of this artifact classification. Various artifacts placed under “economic activity” relate to the Kirmse jewelry and curio store, such as a dry-cell battery, crucibles, and souvenir objects. Crucibles were used in Alaska in assaying precious metals. One of the crucibles found below the floor of the MH Shed was small, metal, misshapen, with an exterior surface that had bubbled. The other, found in the Kirmse Dump, was manufactured by the Morgan Crucible Company, at their Battersea factory in London. They began manufacturing crucibles there in 1857, and the company still exists. No specific date could be assigned to this crucible. Both crucibles were probably used in Kirmse’s jewelry-making and assaying activities. The ongoing role of tourism in the Skagway economy, and the special interpretation of these artifacts, will be discussed in the concluding chapter.

Two metal plates from a linotype press — a small letter “o,” and “57¢” — were also found, and they were placed in the communication category. Both were found in mixed deposits, one in the southwest yard and one in the post-1940 top layer of soil. The offices of the *Daily Alaskan* newspaper were located only about half a block away so it is possible they came from there. That assumption is reinforced by Blee’s excavations. She also found a printing block, on the east side of the log cabin. It was a cartoon that had been printed in the *Daily Alaskan* on April 7, 1899 and September 14, 1899 (Blee 1988:252-253). Because of her find, it seems more likely that these were from Skagway’s early days, rather than from something like a home printing press used by the Kirmse family to advertise their store’s products.

A glass insulator indicates service from an established power or telephone company, something that would often not be found in a rural setting until a much later time. Electric and telephone services in

Skagway, however, were established in the city’s earliest days. The radio tube fragment found in the Kirmse dump shows a new way of being entertained, and of getting news from the outside world. Although fragments of books and newspapers were included in this category, many were found at the base of the Moore privy, where they had been discarded after a secondary function. Since this was a residential site, there were few office-related artifacts, and artifacts such as pencils and mucilage bottle fragments could arguably have been included in the “Leisure” classification.

The largest categories of artifacts, those related to “Munitions” and “Yard and Gardening” could also arguably fall into the “Leisure” category. However, they represent very specific activities and are thus separate. Most of the gardening artifacts consisted of numerous flowerpot fragments found scattered across the site. Most were a low-fired, unglazed orange/red paste, and invariably were highly fragmented. The only places these flowerpots did not appear were in the deposits connected with the Moore family. Herman Kirmse was an avid booster of Skagway’s first garden club and sponsored yearly contests. It is assumed that the tradition continued after his death in 1912. Some of the Kirmse family’s gardening activities are visible in photographs of the site, where sweet peas were staked to the exterior walls of the cabin, and a small fence in front of the porch enclosed a small flower garden (Blee 1988:237). During Blee’s excavations, a round depression in the front yard turned out to be part of an earlier flower garden of the Kirmse family. Jack Kirmse raised vegetables in a garden every year (G. Kirmse, pers. comm., 1995). Before World War II, Skagway prided itself as the “Garden City of Alaska.” During World War II, the military overran much of the town with equipment and new buildings, and many gardens were lost. In the last 10 years, Skagway has been working hard to once again become known for its many beautiful flowers and productive gardens. Each August, Skagway’s Garden Club hosts a competition where residents can bring examples of their gardening efforts.

We know that many animals were kept on the site through the years. A grey, enameled basin was found right under the “chicken” door of the shed, and was sold as a “Milk or Dairy Pan” in the 1897 Sears,

Table 20 - Special Function Artifacts

	Frag Ct	MNI Ct	Frag %	MNI %
Munitions	48	48	10%	27%
Communications	40	14	8%	8%
Bulk storage	60	32	13%	18%
Office supplies	9	9	2%	5%
Economic activity	21	14	4%	8%
Transportation	10	10	2%	6%
Tools	10	9	2%	5%
Yard, gardening	281	39	59%	22%
Totals	479	175	100%	100%

Roebuck catalog. Although sizes ranged from ¼-12 quarts, this one was most likely the ½ quart size that sold for 31¢ per dozen (Sears, Roebuck 1968 [1897]:130).

One unique object, included in the “economic activity” classification, was the Nome Railroad token. The gold rush in Nome began in 1898, and by 1900 many of Nome’s residents were former Skagwayans. One of those was Captain William Moore. Although it was his son who lived at the Moore House site, it is tempting to tie this to Captain Moore’s Nome adventure of 1900 (*DA* 4/28/1900) (he soon returned to Skagway). Since the token was found in the excavations in the southwest yard area, there is no way of telling if this is so, but it is tempting nonetheless.

Abundant munitions were found on this site, throughout the time the site was occupied. The majority of these artifacts were spent rim-fire cartridges, mostly .22 caliber (n=35). Eight were recovered from under the floor of the shed, but six were also recovered from the Moore dump. One of

the stories recited in Bernard Moore’s autobiography concerns the subsistence hunting that he and his Tlingit hired helper did one night in what would now be the back yard of the house (Moore 1997:Inset). While that would have been common during the years preceding the Gold Rush, it would have been less acceptable to hunt in your backyard in the intervening years. It is believed hunting was a favorite pastime of at least one of the Kirmse boys.

Center-fire cartridges and a shotgun shell were analyzed by Charles Adkins (1998). The shell, found in the post-1940 deposits atop the Kirmse privy, was a 12-gauge size commonly sold in the Montgomery Ward (1969 [1895]:473) or Sears, Roebuck (1968 [1897]:583) catalogs where a box of 25 shells sold for \$1.19. Based on the “ARROW” mark incised on the shell, this particular shell was manufactured by the Union Metallic Cartridge Co. sometime between 1905 and the company’s merger with Remington Arms in 1911. Most of the munitions found on this site were used in rifles. Four, however, were used in revolvers, most likely the popular .44 caliber Colt. A Colt .41 short, found in the pre-1940 deposits, pre-

dates 1911, and was used in a single action revolver. An unspent cartridge found underneath the floor of the shed was a "Hoxie" style bullet for a .44 caliber revolver, manufactured sometime between 1867-1911. Found in the Kirmse privy deposits was a hammer for a pistol or revolver.

Charles Adkins analyzed center-fire cartridges from all the Skagway sites as part of a larger study on munitions found in Alaska archeological sites (1998). Of the 66 cartridges he analyzed, 35% were manufactured by Winchester Repeating Arms Co., and 46% were manufactured by the Union Metallic Cartridge Company (which merged with Remington Arms Co. in 1911). This site was dominated by UMC ammunition: UMC=6, Win=3, Peters=1, Unidentifiable=1. The Peters Cartridge (Co.) cartridge was a .30 caliber, manufactured for the U.S. government. Of the four center-fire cartridges recovered by Blee in the earlier excavations at the Moore House, three were manufactured by UMC.

---

## CHAPTER 6 - INTERPRETATION AND SYNTHESIS

### **Tlingit Use of the Skagway Valley Before 1897**

Few visitors to Skagway realize that the Tlingit had been using the Dyea and Skagway valleys for hundreds, probably thousands, of years, before the gold rush. Nor is that information regularly conveyed to visitors on private or NPS tours. None of the prior archeological reports for Skagway addressed this issue, nor were any artifacts or features related to Tlingit use of the area found in any of the excavations. Use of this site, however, pre-dates the gold rush by 10 years, when J. Bernard Moore built a foundation for a log cabin and a homestead claim. Even more important is the fact that Bernard Moore married a Tlingit woman in 1890. Through her, he might have also acquired rights to use the Skagway Valley that would have been recognized by other Tlingit. No archeological remains were found at the Moore/Kirmse House site that relate to Tlingit use of the land. However, because Moore participated in many aspects of Tlingit life because of his marriage to Klinget-sai-yat, and because this aspect of Skagway's past is so often overlooked, this information is being presented in this report in the hope that it can be more widely incorporated into the interpretation of Skagway's history.

### **Tlingit Legal Claims to Land**

Although Tlingit had been living in Southeast Alaska for centuries, it has been a long struggle, one that is still continuing, to have their traditional rights to various land areas legally recognized. The first recognition of their traditional claim to the land by the United States government came in the Organic Act of 1884 (23 Stat. 26), stating they "would not be disturbed in the possession of any lands actually in their use or claimed by them." However, it also gave exclusive right to file claims to homestead land and mines to non-Natives (Dauenhauer & Dauenhauer 1994:36-37). Nor did the act provide a means for Tlingit to secure legal title to traditional land (Thornton 1998:xiv). The provisions of the act were largely ignored in Haines, Dyea, and Skagway when the lure of gold drew thousands of people to the area.

Given the fact that the seasonality of the Tlingit lifestyle was well known to the federal bureaucrats stationed in Alaska, one wonders whether the rationale for the requirement to provide evidence of continuing occupation was to create a means to easily usurp traditional land. Tlingit had few non-Native voices expressing support for any land claims. An exception was Sheldon Jackson, a Presbyterian missionary active in Southeast Alaska, who urged the United States government to extend Tlingit land protection to the mountain passes (Bearss 1970:31-32). Captain Moore admitted in an 1887 letter regarding the Chilkoot Trail: "[T]he American government will not build or give a charter for their portion of a trail, their excuse being that it is an old Indian pass, and that they cannot interfere with the Indian rights" (British Columbia Legislative Assembly 1891:481-483).

Part of the reason for the continuing misunderstandings over land ownership and use is because Tlingit society is organized very differently from Euro-American society. To the Tlingit and many other groups, self-identity grows out of identification with one's community. It differs from a non-Native community because it is organized along lines of kinship. These kinship affiliations regulate all social interaction. If you consider all Tlingit in Southeast Alaska as a "nation," then this nation is divided into groups, or moieties. In the northern end of the Lynn Canal, these two groups are the Eagle/Wolf and the Raven, although sometimes Tlingit call these groups "tribes." Each moiety is made up of several clans, and descent is traced through the mother's family. Anthropologists call this a "matrilineal" society. Therefore, social status and ranking is to a great extent determined at birth. Sons have a father-son relationship with their mother's brothers, and all the children of their mother's sisters will also be considered their brothers and sisters. Inheritance is through the mother's side of the family. Marriages can only take place between people of opposite moieties (deLaguna 1990:212; Goldschmidt and Haas 1998:8-12; L. Shotridge 1913:83-85; Stanley 1958:35-63; Tollefson 1982:25-26).



So how do you differentiate between your family and your neighbor's family? For the Tlingit, those differences were shown in the use of different symbols (used in totems, crests, hats, rattles and other ritual objects) (Shotridge 1919a:43-48). There were also differential rights to access land (Stanley 1958:31-32). This is a gross oversimplification of a very complex concept, called *at.óow*, that is well-developed among the Tlingit. *At.óow* means, literally, "an owned or purchased thing or object." Objects can include various forms of land (but not all places of land are *at.óow*) — a geographic feature such as a mountain, a landmark, a historical site, or a physical place, such as Skagway. In addition to the physical land itself, this land may be represented in visual art or spoken stories or songs; and these representations also symbolize the spiritual places and conditions associated with that landform (Dauenhauer & Dauenhauer 1994:15-16). These stories thus make a connection between a social group and a geographic place.

Thus, concepts of what land is, and what it can do, differ dramatically between Native and non-Native people. Julie Cruikshank, examining this concept further, talked to several unidentified women in their forties who had been involved in land negotiations with the Canadian government. They explained their point of view thusly:

People are starting to think about their identity, about who they are. And you know how it is when you start thinking about who you *are*—right away, you think of *place*.... [And in another's words:] How can you *own* a piece of land? It's like saying you can *own* a cloud! [Italics in original.] [Cruikshank 1998:17]

There is not just a gulf between the point of view of a Native and a non-Native, there is a yawning chasm. Bernard Moore obviously believed in the concept of private land ownership, but was certainly familiar with the way it was viewed by the Tlingit. This is illustrated in one of the tales told in his autobiography:

[Moore is getting ready to leave the Healy & Wilson trading post in Dyea

in 1891.] I noticed a lone Indian swiftly shooting down the current in a small canoe.... I recognized him to be my old friend Skookum Jim ...; the same Indian ... [who went] through the White Pass with my father in June 1887.... Jim gave me to understand that he would like to accompany me to Chilkat.... We ... proceeded down the channel ... about four miles below Skagway ... [when] Jim became very excited and remarked, "I see bear two." [The story goes on to tell the details of Jim's bear encounter, including hand-to-hand combat with a large grizzly.] ...

\* \* \*

Jim, of course, felt that he ought to have the proceeds from the sale of the hides. So knowing that he had hunted and killed them and risked his life in doing so, I readily acceded to his request. Jim asked [Moore to stop the boat so he could skin the bear, stow the meat, and hide away, out of sight]. This we did. Jim asked this for the reason, as he explained, that he, being a Stick (meaning an Interior) Indian, the coast and Chilkoot Indians — if they found out that he killed these two bears in their territory on the coast — would make him pay them a royalty. This condition, of course, I knew before he told me of its existence among the Natives. [Moore 1997:156]

### Moore/Tlingit Legal Claims to Skagway

Viewed in the context of the Organic Act's strictures on land development in areas used by Natives, some of the statements in Moore's autobiography (1997) become more pertinent:

We ran across numerous old deadfall traps for bear and other animals, a short distance up the valley... [86]

\* \* \*

There was no sign of a house of any kind ever having been built in this vicinity nearer than Smuggler's Cove, which we, at that time called Wausuck Bay, after the native who lived there with his family, in one of the huts that are there today. I found places where camps had been made long ago; also very old axe blazes on trees, judging from the way the bark had grown around the cuts and the quantity of pitch surrounding them.... I found half a dozen wooden fox and bear deadfall traps between the edge of the timber at the bay and where the railroad shops are now built.... [Moore gives a full description of the traps.] The Indians had evidently covered these traps with leaves and vegetation to make the surroundings look natural. But when I arrived there, Nature had mantled the old traps with a covering of her own.... On the west side of the river, about two miles up the stream, I found an old half-finished cottonwood canoe, decayed and covered with moss. [Inset section]

Moore is emphasizing two things here. The first is that when they made their homestead land claim, they did look for evidence of Native land use. The second is that although they did find some evidence of Native land use, that use was in the past, and was not ongoing. This fits with the language of the 1884 Organic Act that stated Native land claims would be honored only if they were currently using or occupying that land. Thus, his statements go far to further solidify his legal claim to the Skagway townsite.

The Tlingit possessed both clan and family hunting territories, and their traditional use of land in the Dyea Valley and the Chilkoot Trail was well-known (Davidson 1928:18). Davidson's monograph in 1928 was the first mention in any literature that the Tlingit had also traditionally used the Skagway Valley for subsistence activities. The Chilkoot Tlingit had been using Skagway for their seasonal round of berry picking, hunting, trapping, and fishing for years. This study used information supplied by Minnie Moore's

brother, Louis Shotridge. He stated that the Ta-ique-di (Raven) clan had the hunting and fishing rights upriver from the town of Skagway (Davidson 1928:map inset). While only occupying the land temporarily, it was recognized by other Tlingit that the family "members ... [had] permanently an inalienable right to the territory, and these rights are inherited" (Davidson 1928:19-20).

In 1946, Goldschmidt and Haas took legal testimony for the U.S. Office of Indian Affairs to determine what lands were being held by Natives that they had also considered to be their territory in 1884. They reported that title to traditional lands was recorded in the name of the headman of the clan through a potlatch and totem pole. For Skagway, they took an oral affidavit from Paddy Goenette (1998 [1946]:33):

Dyea and Skagway are claimed by my people. ... We used to get seals at Skagway when I was a boy. I remember the one man who lived there the year around because things were easy to get. This man was related to my father. He would hunt seals in the fall. He hunted up the Skagway River. There was a good place to get mountain goats. The Skagway area belongs to the kaagwantan [Eagle] clan.

This testimony does seem to put claims of clan ownership of the Skagway area in conflict. In the Davidson monograph, the Taikuedi clan of the Raven moiety has claim to land in Skagway. In the 1946 study, the Tlingit trace ownership of the area to the Kaagwantan clan of the Eagle moiety. There may not be a conflict, however. First, the reports were prepared a generation apart, and at least in Davidson's time the Tlingit population was being decimated by periodic bouts of influenza and tuberculosis. This sometimes resulted in subclans being combined. In fact, Davidson recognizes 11 subclans, while Goldschmidt and Haas had only eight. Also, Goldschmidt and Haas listed the Taakw.aaneidi (Davidson's Ta-ique-di) as an Eagle/Wolf moiety group, not with the Raven. Minnie Moore was of the Kaagwantan clan, of the Eagle/Wolf moiety, as were her children.

Goldschmidt and Haas, writing in 1946, stated: “The Chilkoot ... have shared a large portion of their territory with outsiders. ... The Skagway area seems no longer used and occupied by the Chilkoots” (1998:36). While we are not proposing any answers to questions regarding the history of traditional land use or ownership in the Skagway area, it is a good place to begin asking questions of today’s Tlingit people. Tentative NPS plans call for an ethnographic study that will focus on the Dyce and Chilkoot Trail areas, but resource planners should not lose sight of any opportunity to learn more about traditional views of the Skagway Valley.

## CULTURAL LANDSCAPE

Changes to the cultural landscape at the Moore’s house site were dramatic from 1897 until 1904, the time when they completed remodeling and landscaping efforts. Since the Moore House site appears in many historic photographs, many of these changes are well documented (*for example*, figures 2 through 10). The physical impact on the land of the settlement by the Moores of the Skagway Valley was accompanied by symbolic changes to the cultural landscape. “The built environment is more than shelter for the people who built it; it is a physical representation of the ideology that shapes the society. It repeats the myth by which they construct their lives and social order” (Anderson and Moore 1988:387).

At first, the seasonal visits paid to “Mooresville” from 1887 until 1896, by Moore family members and other explorers, prospectors and Tlingit, had little physical impact to the environment. The base of the 1887-1900 privy had abundant tree pollen, but little that would be classified as “weeds,” and “may reflect construction of this privy before other ground-disturbing activities on this site” (appendix 7, p. 283). In other words, the privy intruded into soil that can still tell us what was growing here before the gold rush began. Later in life, Moore recollected that, before the gold rush, the land was thickly timbered, beginning just north of his house (Moore 1997:inset). This can also be seen in the only known pre-gold rush photograph of Skagway (figure 2, taken in July 1897). Arboreal pollen can be very light, and travel very far, so it is not necessarily a good indicator of what was growing immediately next to the Moore’s

log cabin. But the fact that more tree pollen was found at the base of this privy than in any other deposit at the site indicates the density of the surrounding forest. None of the later deposits contain that much tree pollen, evidence of the extent to which the Klondike stampede altered their environment by cutting down this virgin forest. Luckily, the valley has greatly recovered and pollen samples taken of surface soils should once again contain significant quantities of tree pollen. Although almost of southeast Alaska is heavily forested, the forests in the Skagway Valley have not been commercially logged since the gold rush days.

Another component of the pre-gold rush landscape must have been wild roses (*Rosaceae* family). Samples from the base of the Moore privy contain the highest amounts of this type of pollen found anywhere at the site. They included pollen aggregates, “clumps of a single type of pollen, [that] may be interpreted to represent pollen dispersal over short distances, or the introduction of portions of the plant represented into an archaeological setting” (appendix 7, p. 1). The amount of rose pollen is significantly smaller in every other sample. Nicknamed the prickly rose, it grows wild in thickets and along roads from Southeast Alaska all the way north to the Arctic Slope (Heller 1966:27). It must have been the clearing of this wild shrubbery by Bernard Moore’s family in 1896 that caused the deposition of these large amounts of pollen into the archeological record, one of the first evidences of their deliberate efforts to change their environment.

*Holodiscus*-type pollen was also found in the Moore privy. *Holodiscus*, also known as Ironwood, Ocean Spray or Creambush, does not grow naturally in Alaska. It is a native of the Northwest coast and can be imported and grown in gardens. It was used by Northwest coast Native Americans for various special tools that required a hard wood, such as halibut hooks, digging sticks, knitting needles, and pegs for boat construction. The brown fruiting clusters could be infused into a tea used to treat diarrhea, and the plant was used to treat measles and chickenpox (Biggs 1999:46; C. Rector 1998, pers. comm.). Since Minnie Moore was a Tlingit, and Bernard Moore lived among the Tlingit and other Canadian and Alaska Native Americans for a good part of his life, they were probably raising this plant

for its special uses. It does not appear in any of the other samples, so the practice of growing the plant was discontinued, perhaps by 1900 when the privy was closed. When the Moore family moved to the site in 1896, they had to be very self-reliant. Although they did receive some special shipments of building materials, normally they had to depend on their surrounding environment to survive. This was something that came natural to Minnie Moore, and Bernard Moore had been living and surviving on his own in the far North for many years. Once the Klondike Gold Rush began, and Skagway became, almost overnight, an urban rather than a rural site, the need to depend on the surrounding natural environment for survival diminished.

One of Moore's biggest impacts to the landscape was when he introduced domestic animals in 1896 or 1897. We know that Moore kept a domesticated moose, in addition to goats, pigs, poultry, and horses. The Kirmse family kept chickens. Cereal grain pollen or phytoliths were found in most samples from the dump and the privy. The only type identifiable from the base of the Moore privy was a barley (*Hordeum*)-type. Alfalfa pollen appears only at the base of the Moore privy. Normally, barley and cereals grains would be connected to human food consumption. However, dung fungal spores (*Sporormiella*) from grazing animals were found in the early Moore dump and the privy. In the Moore dump, grazing animals could account for the presence of cereal grains through their manure. Level 9 of the Moore privy is also where a parasite egg, whipworm (*Trichuris*) was found. Although whipworm can be a human parasite, it also affects animals. In a report done for the Block 39 site in Skagway, Reinhard noted that the species infected a great variety of animals and further noted that: "My only caveat is if it is determined that pigs were herded and butchered at the Skagway sites, then this throws the species identification of the eggs in doubt" (Cooper 1998:330). It seems likely that what we are seeing in the early deposits is use of the land by Moore's domestic animals, making their imprint upon the land the strongest residue from the days both before and immediately after the arrival of the Klondike stampede in Skagway. Of course, after thousands of people arrived in 1897, it was impractical to keep large numbers of animals in the middle of downtown. First they were fenced off from the house

and then moved north of the site. By 1904, their herd of animals was greatly reduced, and their grazing areas had been replaced by buildings such as the Peniel Mission, the Pullen House Hotel, and Captain Moore's mansion. After the Moores left Skagway, the east yard of this site was never so intensively used again (grass is visible in historic photos such as figure 10). This is confirmed by the rise in the grass pollen count in the Kirmse privy.

The land around the Moore/Kirmse house was a part of the struggle between the Moore family and the townspeople of Skagway. Less than a month after the stampeders arrived in 1897 (figure 3), Bernard Moore was forced to fence off part of his land claim to keep it from being sold out from under his feet. This physical separation from the rest of the town was very important since it was not until several years later that fencing is really seen on many other house sites. This division between the Moore family and the rest of the town was seen in fenceposts found in archeological fieldwork around the site, and is an important physical symbol of their social distance from Skagway's other residents. Inside their fence, from 1897 until 1904, the Moore family does not seem to be especially concerned about the physical appearance of their yard. Several family photographs taken in the front yard show high weeds surrounding the house (figure 8), and overview photographs do not show any special landscaping efforts. In soil directly above the base of the Moore privy, there is pollen from the arrival of weeds after Moore initially cleared his property. Grass pollen is replaced by an increase in alder and *brassicaceae* (wild mustard family) pollen. Beginning in 1899, the two older children were sent to boarding schools, returning only seasonally. The family was rarely mentioned in the town's society columns of the newspaper, possibly partly because Minnie Moore was a Native American. Was the fence around their property keeping others out, or keeping the Moores in?

In 1901, the legal case on the Moore's land patent was decided in their favor, and the townspeople seemed to accept the government's decision. This is at the same time when they were remodeling their house. In 1903 and 1904, Bernard and Minnie Moore had several large social functions at their house. Appearances now seemed to be much more important, and 1904 may mark the apex of the Moore



family's manipulation of their environment. This can be seen in changes not only to the house, but also to the entire yard. The outside of the house was painted, and new fencing was placed. The front yard was elaborately, at least for Skagway at that time, landscaped — new boardwalks were built, trees planted, and cobble borders placed around the new trees. The family portrait, taken in front of their now more than respectable home, seems to say, "We have arrived" (figure 9).

## MOVING BETWEEN TWO WORLDS: MINNIE MOORE'S STORY

The complex interplay between historical, documentary data and archeological data is one of the hallmarks of historical archeology. This interplay is even more complex when information is sought about Native American women during a period of initial contact with Euro-Americans. Historical documents such as newspaper accounts, court records, and even books tend to reflect prevailing views of that time (Holmberg 1985; Jones 1914; Knapp and Childe 1896; Willard 1995) and generally ignore women. Generally, the emphasis was on how tractable a particular culture or persons were to the influence of Western culture.

The prior report on the Moore House summarized the available information about Bernard and Minnie Moore, but used Bernard's autobiography as the main documentary source (Blee 1988). Much of the information presented in exhibits at the newly refurbished house also relates the story of the founding of Skagway by Captain and Bernard Moore. Little attempt has been made to integrate the experiences of Minnie Moore into the interpretive framework. And her life story — growing up as a Chilkat Tlingit in Klukwan during a time of great change in the community, marrying a Euro-American man, leaving behind the world of her birth to live in a world that for all its physical similarities was extremely different, and raising three children to successfully navigate their own way in the modern, non-Tlingit world — is an important one to tell.

Tlingit in the Skagway area at the beginning of the twentieth century were undergoing great changes in the fabric of their everyday lives. The first people to locate in the area were the trading companies,

Presbyterian missionaries, and the cannery operators. The missionaries wanted to change long-held values and beliefs, and the cannery operators wanted to change the local economy by introducing wage labor. At the same time, the canneries were having a devastating impact on Tlingit fishing in local lakes and rivers. Disease, alcohol, and alcoholism also began to make inroads on a formerly healthy community (Stanley 1958:66-68). In Skagway, Tlingit experienced discrimination when they were cordoned off into undesirable living locations and denied job opportunities, such as working for the White Pass & Yukon Route Railroad.

## Background of Klinget-sai-yat

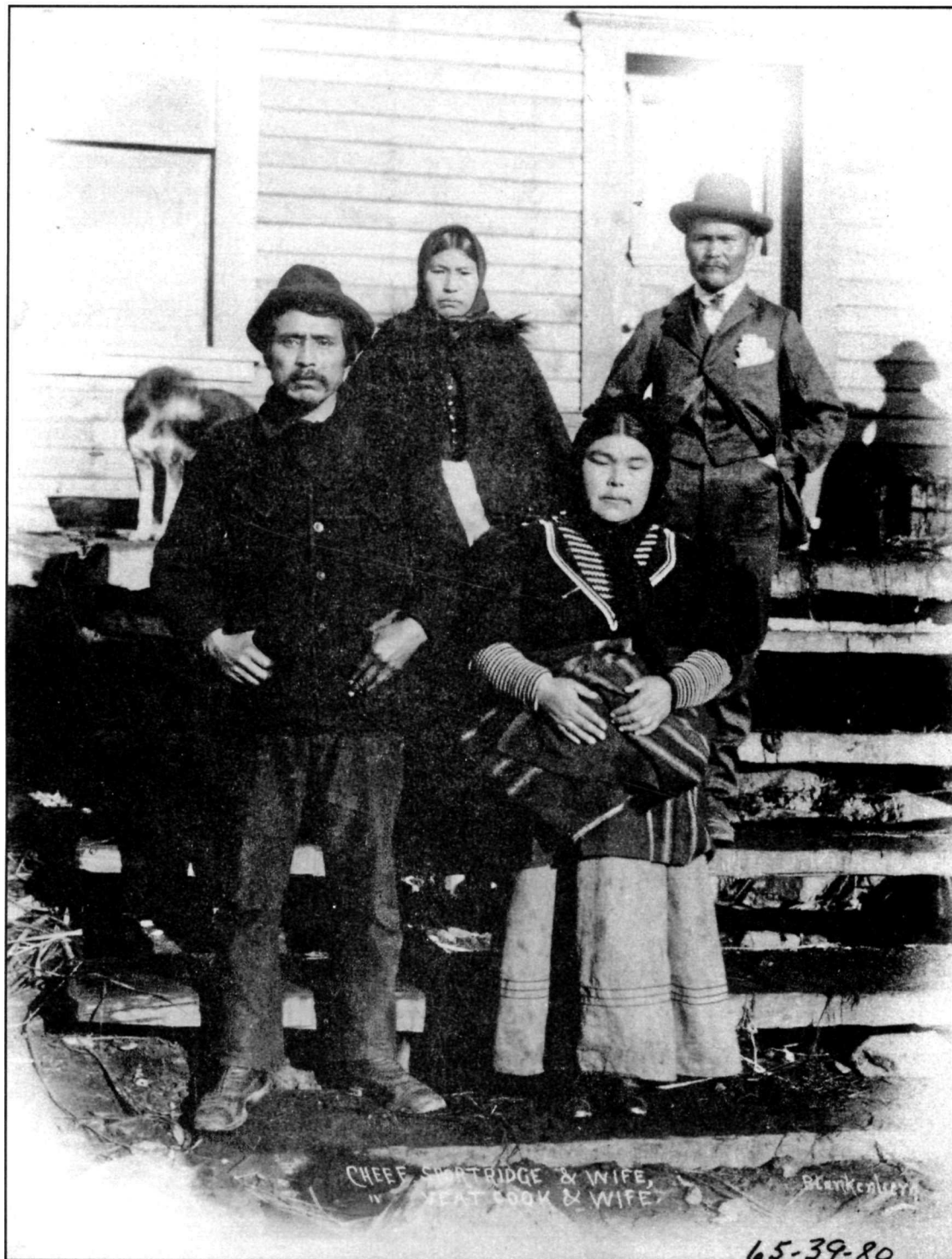
It was during the dynamic initial phase of Tlingit and non-Tlingit interaction that Bernard Moore met and married Klinget-sai-yat.<sup>1</sup> Born at Klukwan in October 1874, her mother (*Kudeit.sáakw*) was from a high-ranking family of the Kaagwaantaan clan of the Finned House (*Ligooshi Hít*), of the Eagle moiety (Stanley 1958:138-139). Louis Shotridge stated that the Kaagwaantaan "are noted for their bravery and audacity, besides being known as the strongest clan in southeastern Alaska" (L. Shotridge 1913:95).

Her paternal grandfather was an extremely important man, given various names by early explorers.<sup>2</sup> As Chief Kohklux, he was considered "the greatest warrior and diplomat of all the tribes." He was tall for a Tlingit, nearly six feet, with a bullet-hole in his cheek, a man who impressed American scientist-explorer George Davidson in 1869 as being truthful and honest (Yukon Historical & Museums Association 1995:6). Earlier, in 1852, he had achieved a

<sup>1</sup> The true spelling of Minnie Moore's Tlingit name is uncertain. Thomas Thornton states that it could be Lingit Saiyat ("Person") or Lingit Shaawat ("Tlingit Woman"), but suggests checking with more Tlingit speakers (Thornton 1999, pers. comm.)

<sup>2</sup> Also called Tshartritsch, Chartrich, Shatritsch, Shortridge, or Shotridge, by early explorers (*Tshartritsch* comes from *Lshaaduxixch* or *X sa 'txicx*). His name is thought to derive from *Klato-sha-to-which*, meaning "never hit a shark with a club." It refers to the clan crest and in an abbreviated form means "very powerful, not to be trifled with" (Emmons 1991:262; Yukon Historical & Museums Association 1995:38).





**Figure 74.** Photo of Chief George Shotrige and wife. Shotrige Photo Collection, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 65-39-80. (Mr. and Mrs Shotrige on bottom row.)

notorious reputation among Euro-Americans when he led the war party of coastal Tlingits that destroyed Hudson Bay Company's Fort Selkirk (*ibid.* 8-9). He was the house leader, or yitsadi (*Hits'aati*), for the Finned House of the Kaagwaantaan clan. Yitsadi are the caretakers of the ceremonial regalia (*At.óow*) and are integral to the clan's decision-making process. Minnie Moore's father's Anglicized name was George Shotridge (often spelled Shortridge), but his Tlingit name was Yeilgooxú (Raven's slave). He was an important member of the Gaanaxteidi clan (Raven moiety) because he was also the yitsadi of the Whale House emblems and crests. Like his father, he was six feet tall (Milburn 1986:60) (figure 74). By the 1880s, her father and grandfather were friends to European outsiders such as the Krause brothers (Krause and Krause 1993 [1881/1882]), George Davidson, George T. Emmons, and Presbyterian missionaries Sheldon Jackson, and Eugene and Carrie Willard.

It is only by reviewing ethnographic accounts that we can begin to understand Klinget-sai-yat's situation and life up to this point. According to Florence Shotridge (1913:101-103), Minnie Moore's sister-in-law and also a Native Tlingit, children were taught to be quiet because being too talkative was a sign of illbreeding. If she acted like a tomboy, she would probably be rebuked by an elder. If any punishment took place, it would come from an older brother or mother's brother, never her father. As a girl, Klinget-sai-yat was carefully taught by her mother and maternal aunts, lessons often coming in the form of stories designed to teach guidelines on morals, religion, social interaction and other matters. Gossip was strictly forbidden. Because she was from such an important family, her early childhood training would have strongly emphasized the qualities of individual poise and reserve. Entering puberty, she was isolated from the rest of her family, and from all men, for a period of from 4-12 months (Oberg 1973:33; F. Shotridge 1913:102; Swanton 1908:428). During that time she was given special training in manners, silence, and craft skills to further prepare her for womanhood. Upon emergence from seclusion, she was considered marriageable and was usually to be married soon thereafter (Jones 1914:127; Knapp and Childe 1896:79).

## Klinget-sai-yat's Evolution into Minnie Moore

Bernard Moore met his future wife in 1890, after he had been persuaded by his father not to return to Victoria for the winter, but to spend it at a cannery at Pyramid Harbor, located a short distance from Haines (figure 75). At that time, Bernard Moore was 24 and Klinget-sai-yat was 15. In March 1890 he attended a potlatch given by Minnie's father, George Shotridge. Afterward, they met formally at the home of her parents, who offered Bernard lodging for the night.

By reviewing Bernard Moore's historical account along with ethnographic records, it becomes clear that the potlatch that Bernard attended was being given for Minnie and perhaps other girls of her clan as they emerged from their period of seclusion (Holmberg 1985:22; Oberg 1973:33). Bernard states that during the potlatch Minnie and another girl were in a separate room, and only came out for a minute. When he first got to her parent's house, she was in a separate room and was not allowed to come out until supper was served. Thus, she was probably at the end of her seclusion period, a time when she would have been considered a matrimonial prospect. The daughter of prestigious parents, there would have been no lack of suitors for her hand.

From the beginning, Minnie's parents obviously considered the courtship of their daughter a serious matter. Marriage matches were often planned years in advance by the maternal family of the bride (Olson 1991:38; Shotridge 1929:131; Stanley 1958:88). Why would they even consider allowing their daughter to spend time with a non-Tlingit? Minnie's ideal marriage, from the Tlingit point of view, would have been to one of her father's sisters' sons. If she married outside of her world, her mother's clan might lose control over the children of the union, thus undermining the traditional Tlingit inheritance pattern (Stanley 1958:86-87).

But in the fast-changing world of the 1890s, there could be advantages. Louis Shotridge wrote that: "The life of the white man came over the Tlingit people like a great thunder storm..." (Shotridge 1921:163). Since a traditional way to create an alliance with an outside group was through marriage,



**Figure 75.** Cannery at Pyramid Harbor, Alaska, ca. 1890. University of British Columbia, Special Collections, BC 1456/13, #203.

the marriage of their daughter to a non-Tlingit might have been viewed in those terms. “[T]here were families that considered a proper marriage also a means for the creation of a desired friendship ...” (Shotridge 1929:132). From 1880-1915, the number of Tlingit-white marriages increased greatly. Part of the reason for the increase could have been the weakening of the traditional Tlingit social systems by the American judicial system, with its greater emphasis on personal choice. However, in 1890 when Bernard and Minnie met, the impact of the new American government was just being felt. It is more likely that the marriage might have been viewed by Minnie’s family as a possible way to gain closer ties to the new sources of wealth being brought into the country by the Euro-American outsiders (Stanley 1958:84-89).

Bernard Moore’s attitude was obviously very different. He looked upon his relationship with Shotridge’s daughter as a casual one since he states that he dated her for quite a while before he really considered her as a potential marriage partner. The Victorian moral climate, even in the western frontier where Bernard was raised, did not look favorably upon the marriage of a Euro-American and a Native American. His autobiography alludes to this when he describes a local trader’s wife trying to dissuade him from attending the initial potlatch. His entire account of the marriage, written in hindsight, is in a very melancholy tone, and says that: “[T]hus it was that lifelong unhappiness was brought about for her and for me, and which one’s fault was it? Surely not hers, but mine” (Moore 1997:145). His willingness to recognize the marital problems caused by the stress from this “culture clash,” and to accept blame, is unusual.

While it is unknown what eventually caused Bernard Moore to seek Klinget-sai-yat as his wife, he did do so in October 1890, about six months after they first met. Although verbal about many aspects of his life, he was strangely silent about the details of the Tlingit wedding ceremony for him and Minnie. Years later, the Tlingit wedding ceremony was described by Louis Shotridge for a Euro-American audience (1929). Once the marriage was agreed upon, the bridegroom had to provide gifts and money to the bride’s family that symbolized his commitment to caring for his new wife and her family. A wedding

feast was then held, after which the bride’s family provided the new bridegroom with the means to support his new family: clothes, hunting tools, tangible things that would be his as long as he was a loyal husband and in-law.

For his part, Bernard only stated that “I married Shotridge’s daughter, then proceeded with my little girl wife to Juneau on a small sloop in company with my wife’s mother and father” (Moore 1997). Once in Juneau, they were married again by a Presbyterian minister. Throughout the early years of the Moores’ marriage, they continued to spend time with Minnie’s family. When they first moved to Juneau, they built a small, three-room log cabin, which they later gave to Minnie’s parents, a proper thing for a son-in-law to do. It was in this cabin that their first child, Bernard Jr., was born in November 1891, while Minnie stayed with her family. The same was true two years later when their daughter Edith Gertrude was born. The assistance of Minnie’s family was undoubtedly of great help to the young couple in those early years.

During this same time, only limited interaction seems to have occurred between Bernard and his family. His father made regular trips to the upper Lynn Canal, but no mention is made of his having much to do with Bernard’s family. And there is no mention of Bernard taking his wife and children to Victoria to see his mother and the rest of his family. Although Bernard Moore expressed great admiration for his father, it is likely that his marriage placed a wedge between them.

When the Klondike stampede began, Bernard and Minnie Moore were already living in Skagway where they were quickly surrounded by a horde of gold rush stampeders who overran their land. Figure 76, a photo of Minnie and her children was probably taken in late 1898 or early 1899 since their youngest daughter, Frances, was born in Skagway in August 1898. Notice that Minnie’s clothes appear to be handmade. Archeologists working in the original log cabin in Skagway found the logs chinked with scraps of handsewn clothing from several garments for women and children. Although the sewing method differed from that used by modern, Euro-American seamstresses, the clothes were in the latest fashion style of the day (Blee 1988:223-224). Many women





*Figure 76. Photo of Minnie Moore and children, ca. November 1898, Skagway. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-08N.*



of the nineteenth century had to make clothing for their entire family, but perhaps Minnie Moore was better equipped than many for this task since so much of the early household training she received in her Tlingit community focused on sewing and beadwork. But the photo and clothing scraps are mute evidence of the cultural transition taking place in her life.

As the gold rush wore on, the Moore's financial status improved. Bernard Moore received a steady monthly income from operations of the Moore wharf. He filed and settled lawsuits on his land claim to Skagway. Meanwhile, Bernard and Minnie remodeled their Skagway home, filling it with Victorian clutter, including an expensive piano. Despite the presence of some Tlingit handcrafts that look like they may have been made for the tourist trade, these rooms could have been in any house in Alaska (figure 77). Small porcelain dolls, doll tea service pieces, and paper doll cutouts were all found in deposits associated with the Moore family (figures 68-70). Toys, especially in the Victorian age, often had a secondary purpose that is not recreational — they helped daughters to “master the realm of custom, manners, morals, and ‘home culture’ in order that their future homes might be domestic havens” (Praetzellis and Praetzellis 1992:92). Even more importantly here, it clearly demonstrates that the children were being oriented towards a Euro-American outlook, rather than one emphasizing their Tlingit heritage.

By 1900 the two oldest children had been placed in exclusive boarding schools in Tacoma, Washington. Although family descendants maintain this was because Skagway was such a “rough” town, it was more likely an attempt by Bernard and Minnie to shield them from racial epithets they would have inevitably been exposed to in Skagway.

A cache of medicine bottles at the base of their pre-1900 privy demonstrate the possible stress that Bernard and Minnie suffered through, and possibly foreshadows later events in Minnie's life (figure 78). Because of her Native heritage, Minnie daily faced social ostracism. Although the number of women in turn-of-the-century Skagway was three times less than the number of men, Minnie was deliberately excluded from the normal clubs, card parties, and charity events. After the legal claim to the townsite

was settled, Bernard and Minnie only made the society column when they had planned and orchestrated a special social event at their home to which most of the town was invited. Undoubtedly, some of this social isolation resulted from the often acrimonious relations Bernard had with the townspeople because of his land claim litigation, but some of it probably was because they dared to cross a racial border with their marriage.

Figure 79, a photo of Minnie and her daughters around 1904, clearly shows an evolution on Minnie's part. Her hairstyle is very Victorian, and the clothes for her and her daughters are very high fashion, and appear to be purchased from the most fashionable stores. Bernard and Minnie Moore continued to live in Skagway until 1906, when Bernard sold his interest in the Moore wharf company. Even before that time, they had been spending more and more of their winters away from Skagway, usually moving between Victoria, Vancouver, Seattle, and Tacoma.

It also appears that during this time Minnie's affiliation with her Tlingit relatives was dwindling. Not only is there no evidence that she and Bernard attended social events in the Klukwan community, but it is also apparent that her children were not exposed to their Tlingit relatives, the Tlingit community, or traditional Tlingit values. Even today, her grandchildren know much about their Moore family background, but little about their Tlingit heritage. Minnie's closest connection was probably with her mother, who died sometime during the gold rush. Her father died in 1908. The only family relationship she maintained all her life was with her brother, Louis Shotridge. After being educated at missionary schools in Haines and Sitka, he often lived and traveled outside of Alaska. He worked as an ethnographer for the University of Pennsylvania Museum from 1912 until the Depression. An extremely intelligent and talented man, he managed to be bi-cultural and had a great understanding of the ways of the non-Tlingit world. He had more difficulty maintaining good relations with his Tlingit community, where he was often criticized for his artifact-collecting activities for the University of Pennsylvania Museum. Because Minnie's descendants remember “Uncle Louis,” and almost none of the rest of her family, it is apparent that she and he maintained close ties over the years. And it probably also means that Minnie Moore was cutting ties to those in her



**Figure 77.** *Photo of parlor, Moore residence, Skagway. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No.76-35.*



**Figure 78.** *Photo of cache of medicine bottles at base of Moore privy.*



**Figure 79.** *Photo of Minnie Moore and daughters, ca. 1904. J.B. Moore Collection, MS-224, Alaska and Polar Regions Dept., University of Alaska Fairbanks, Photo No. 76-35-06.*

Tlingit family who had no links to the new, Western world.

### Moving Away

Unlike many other Native women, Minnie Moore was granted full equity in the legal system. All of the property in Skagway, including that covered by Bernard's land litigation, was considered joint property, and Minnie's mark was required on all the deed transactions. In 1904, Bernard deeded the Skagway house and property to Minnie and their children. When they left Skagway and moved to Tacoma, most real estate transactions were again in both their names.

In 1909 Minnie Moore filed for divorce, citing cruelty, abuse, and Bernard's inability to handle financial matters successfully. Her brother Louis, later writing about the reason divorce was becoming more common among the Tlingit, said that: "[B]efore the invasion of foreign influence, ... a man's word was sufficient means by which a union was bound. But now the white man's law has created in the minds of both parties a sense of independence" (Shotridge 1929:131).

Although impossible to know exactly what caused the divorce, and remaining family descendants also have not been able to identify the cause, Minnie obviously felt Bernard had not lived up to the original marital commitment he had expressed almost 20 years before. Again, Minnie was granted equity by the legal system when the judge granted her one-half of all their joint property in Tacoma, her separate rights to the house in Skagway, and custody of the two minor children. So she had moved very far into the non-Tlingit world. This was confirmed when, rather than return to Klukwan or Alaska after the divorce, she moved to Victoria, British Columbia in 1910, and shortly afterward married a man of Dutch descent who was distantly related to her former in-laws. She bought property in Victoria and settled into married life there. Her finances were secure. Despite these tranquil outward appearances, in February 1917 Minnie Moore took her own life by drinking muriatic acid after a quarrel with her husband. Perhaps the most telling comment was made by her youngest daughter, Frances, during the inquest proceedings when she said: "Mother was never very happy. I have heard her threaten to do

away with herself quite a while ago ..." (British Columbia Provincial Archives 1917).

Minnie Moore was one of those people who successfully navigated the chasm between two widely diverse cultures. Beautiful, well dressed, financially secure, able to successfully coordinate social events in Victorian society, she also had two non-Native husbands during her life. Still, evidence points to the fact that her individual experience as a transculturite was extremely stressful at many points in her life. Bernard's melancholy words about both their lives being better had they not met and married did foreshadow unhappy events in their lives. Perhaps her suicide is the final exclamation point. Yet, she deserves our respect for the hurdles she overcame and our empathy for leaving behind many close family ties and the comfort and values of her Tlingit heritage.

The reaction of the Tlingit community at Klukwan to the intrusiveness of the non-Tlingits living in Haines and Skagway was to keep them away from their culture and their community. This insular world was noted by Frederica deLaguna in 1949 when she spent a brief time in Klukwan: "Klukwan holds itself aloof as much as possible from the whites ...; Klukwan has the reputation today of being the most old-fashioned and thoroughly Indian village in southeastern Alaska" (deLaguna 1949:15). Perhaps the personal unhappiness experienced by people like Minnie Moore who married into the non-Tlingit world served as an example of the dangers of getting too close to that world.

### THE MOORE/KIRMSE HOUSE SITE AND THE DEVELOPMENT OF TOURISM

Alaska's economic health has become inextricably linked with the growth of tourism. Possibly nowhere is this so apparent as in the town of Skagway, where the growth of the cruise ship industry has created a largely seasonal economy. Through the years, tourists have come to Skagway for various reasons: to enjoy the incredible natural beauty of the surrounding mountains, to seek out the vanishing remnants of a colorful era ("cultural tourism"), and to come into contact with the customs and goods of an indigenous people ("ethnic tourism").



Even during the Klondike stampede, a few tourists mingled with the goldseekers. In July 1898, while the White Pass Railroad was still being built, the first tourists ascended along the narrow-gauge tracks on flatbed cars (Norris 1996:31). Once the railroad was completed, even more tourists made it a point to visit Skagway. For storeowners, recognition of the importance of tourism came as early as May 25, 1899, when the local newspaper announced the commencement of the summer tourist season. Tourism has provided a unifying framework to interpret some of the results of our archeological work.

To our knowledge, neither Bernard nor Minnie Moore participated in Skagway's mercantile community, except as consumers. Their personal financial well-being, of course, was linked to the health of Skagway's port. But Bernard Moore saw the potential for the development of the tourist industry as early as 1900 when he preserved the family's original homestead log cabin. A news article in 1901 stated: "The rooms still contain the old crude furniture ... which Mr. Moore used during his first years in Skagway, and he intends to preserve the building and contents in their entirety as a memento of the city. In time it will probably grow into a museum ... that tourists will be glad to visit." (DA:1/1/01) That vision has been realized today as thousands of visitors every summer pass by and look through the cabin's windows into the past.

### The Kirmse Family and the Growth of Tourism

As the gold rush boom dwindled, in 1908 Skagway businessmen made a conscious decision to alter their cultural landscape to make it more "tourist friendly" by creating a centralized business district. During the gold rush, businesses were located all over Skagway, and traffic patterns were diffused through town. The placement of the railroad tracks on one of the streets, Broadway Avenue, made that a logical place for businesses to congregate. Anchored by the railroad depot at the southern edge of town, Broadway was cleared of dilapidated, empty buildings. Many large buildings were moved from other parts of town to fill in those empty spaces. Today, although the railroad tracks no longer run along Broadway, it is still the main business thoroughfare. The Kirmse family, who

moved into the Moore's house sometime after 1908 and remained there until 1977, were key players in the development of Skagway's tourist industry.

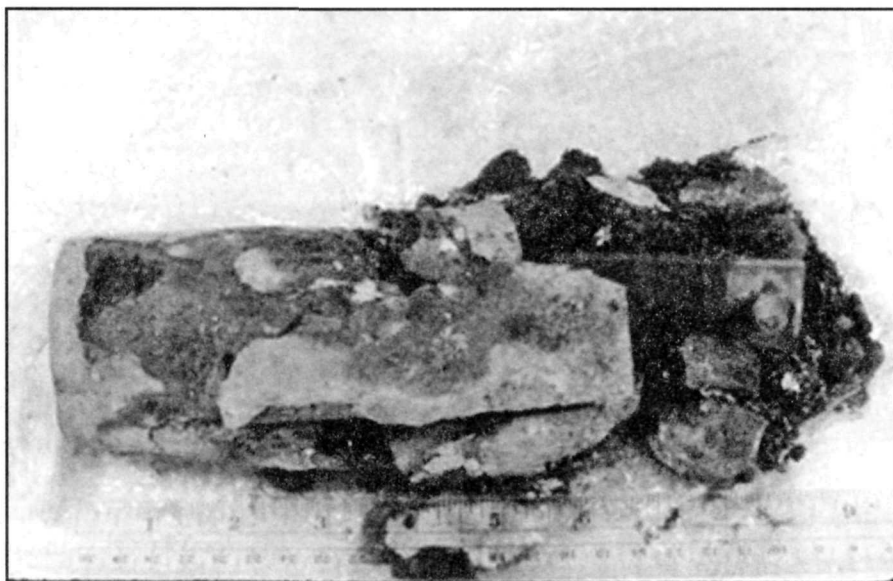
From 1920 through the 1970s, Skagway was a town of approximately 500-600 people who mainly worked for the White Pass Railroad. Tourism, however, continued as an important supplement and was lovingly nurtured. The retelling of the Klondike Gold Rush story, complete with loose ladies, evil con man Soapy Smith, and the triumph of good over evil as town surveyor Frank Reid "gave his life for the honor of Skagway" (epitaph on tombstone in Skagway's Gold Rush Cemetery) in a successful gun battle with Smith (both men died as a result of the battle). All were important components of the tourism marketing strategy. Tourism booster Martin Itjen probably fell into that "slightly eccentric" category. With his promotional streetcar and life-size Soapy Smith mannequin (with light bulbs for eyes), Itjen once even traveled to Hollywood to try and lure Mae West for a Skagway visit. Others like Jack Kirmse (figure 80) and George Rapuzzi believed that the creation of a national park in Skagway would assure the continuation of tourism. Not only did they actively lobby for the creation of the park, they also sold historical buildings to the fledgling park in the 1970s.

Herman Kirmse's background as an accomplished jeweler allowed him to see tourism's economic potential. Soon, he began specializing in tourism "curios." He was in the process of expanding his business and opening a new store in Ketchikan when he met his untimely dockside death. His widow, Hazel, and later son Jack, continued to cater to Skagway's visitors. In the Kirmse deposits at this site, some very unusual and unique artifacts were found. Without the unifying framework of tourism, interpretation of these "specialized" artifacts would have suffered, and misunderstandings could have arisen. Two crucibles were found at this site. Although an obvious connection could be made to assaying activities, the discovery of an early dry cell battery (figure 81) made a more positive link to Kirmse's use of his residence for his jewelry-plating activities. Several small jewelry swastikas were found, one in the southwest yard and one in the walkway between the house and the dump (figure



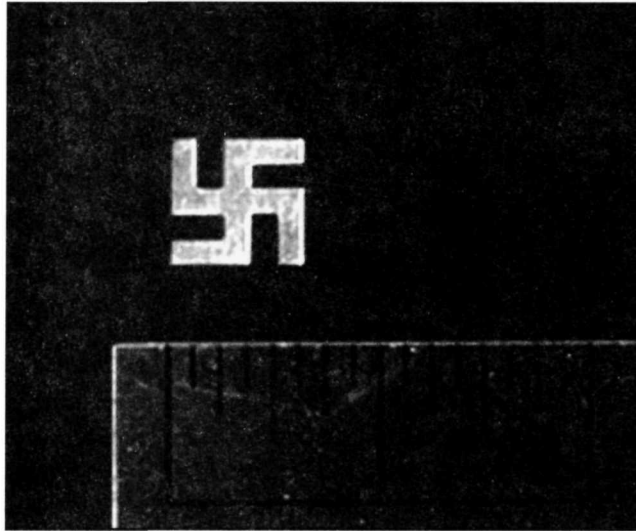


**Figure 80.** Photo of Jack Kirmse and friends in front of Pack Train Saloon, late 1940s-early 1950s. (Arrow points to Kirmse in white cowboy hat.)



**Figure 81.** Photo of dry cell battery found in Kirmse Dump #2.

82). The swastika was a benign, common symbol in many cultures before the German Nazis appropriated it for their own use in the 1930s. For many people today, it is symbolic of the deaths of millions of people at the hands of the Nazis during World War



**Figure 82.** *Photo of swastika artifact found in southwest yard of site.*

II. In Skagway during the early years of the twentieth century, newspaper ads for Kirmse's curio store featured the swastika as an "ancient good luck symbol." For many years it was a prominent feature in Kirmse's marketing strategy, dominating the store's electric sign.

By the beginning of the Klondike stampede, Northwest Coast Native Americans were already beginning to enter the tourism arena by producing artifacts specialized for the tourist trade. By controlling the means of production, they also usually controlled the distribution of the product and incurred little overhead. As the number of people visiting Alaska declined, "curio" storeowners like Kirmse began to chip away at this independent production of goods. Skagway curio store owner Peter Kern had a huge inventory of Tlingit artifacts (figure 83) that were sold to Kirmse in 1910: "H. D. Kirmse today assumed the ownership of the Kern Jewelry Store and Manufacturing plant" (DA 10/10/10). Both employed Native American craftsmen to produce items for the tourist trade. The walrus tusk knife (figure 84), with "Alaska" crudely incised on one side, was found below the floor of the shed, and demonstrates that

trade with Yup'ik, Inupiat, or Aleut hunters may have been an early component of the Skagway tourism industry.

The Kirmse store began to seek profit more and more through the sale of Native American goods. Figure 85 is a photo of the interior of the store, dominated by the large Chilkat blankets hung on the rear wall. Kirmse also placed a Chilkat blanket design on a souvenir teacup, fragments of which were found both by Blee and myself (Blee 1988:88). Figure 86 is a photo of a complete cup that was purchased at an auction of former Kirmse store artifacts that matches the fragments found in archeological excavations. Tlingit beliefs and stories also were used for tourist trinkets. When first excavated, a totemic pin found in the Kirmse dump was thought to relate to Minnie Moore's Tlingit clan (figure 87). However, when we dated the deposit, it fell squarely in the Kirmse dump period. A brochure describing this same pin was found in the upstairs of the old Kirmse store (figure 88), more evidence that Kirmse had romanticized a Tlingit story to make it a part of the tourist trade.

Who were the winners and who were the losers here? It has been argued that without merchants who provided a venue for handmade goods produced by Native Americans, such as Fred Harvey and Don Lorenzo Hubbell in the American southwest, the old traditions might have died out (Deitch 1977:173-184). Studies on the impact of tourism in Alaska's Arctic have found that the effect of tourism on the local people varies from town to town (Smith 1977:68-70). In Southeast Alaska, the elevation of Tlingit cultural traditions was in stark contrast to the way the people were viewed by non-Natives in real life. Traditional activities such as potlatches were outlawed. The people were physically suffering from the ravages of Euro-American diseases and lifestyles. In Skagway, Tlingit people were cordoned off into marginal living areas, such as on the hillsides or the beaches. Their participation in the economy was limited, and few were given year-round jobs, such as working for the railroad. After the introduction of Prohibition in Skagway in 1916, more Tlingits were arrested for alcohol-related offenses than non-Tlingits. By 1920, few Tlingits remained in Skagway, and their participation in the tourism industry was curtailed. Most returned to Klukwan, and to this day there are very few Tlingit who choose to make Skagway their home.

Tourism in Skagway continues to evolve. What began as local businesses are facing increasing competition from “outside” owners. The goods being sold in Skagway’s stores are produced less and less in the United States, let alone in Alaska. And the

Kirmse store, once the pride of the Kirmse family, is now leased to the international “Little Switzerland” chain. By understanding the importance of themes such as tourism in cultural resource research, we may also be able to better understand the future.



**Figure 83.** *Photo of Peter Kern's Tlingit baskets and other objects. Alaska State Library, Juneau, Alaska.*

**Figure 84.**

*Photo of walrus tusk knife found in MH Shed, Catalog No. 34116.*



**Figure 85.**

*Photo of interior of Kirmse Curio Store.*

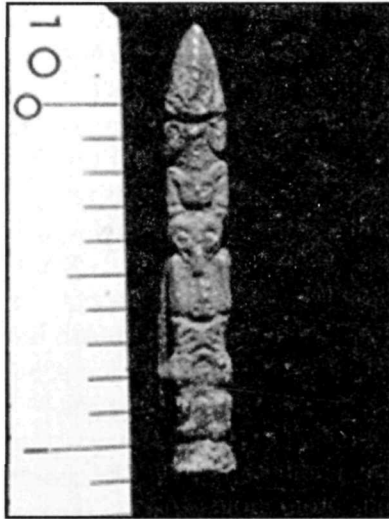


**Figure 86.**

*Photo of souvenir Chilkat blanket teacup sold by Kirmse Curio Store.*







*Figure 87 (left): Photo of totemic pin found in Kirmse dump, Catalog No. 33164.*

*Figure 88 (below): Kirmse Curio store brochure, explaining Kiks.ádi totem legend.*

### Brief Legend of the Kick-Setti Totem

**T**HE figure at the top represents the canon of the Stickene River, where the legend of the tribe grew up.

The fact indicates a spiritual presence and the figure of the frog is the coat-of-arms of the family, showing that the owner of the totem was a member of the frog clan as was his mother. The father is represented by the beaver at the base of the totem and in between is shown the old raven, the creator of the world, talking to the young raven, the creator of man.



## ARCHEOLOGICAL ARTIFACT ANALYSIS

### Dating the Privy Deposits

Archeologists dig in arbitrary levels that may or may not actually have something to do with how a deposit was formed. Interpreting the soil strata, and integrating that knowledge with what is learned from historical and artifactual analysis, is how archeologists apply dates to their excavations. At this site, only general dates, such as pre-1940 and post-1940, could be applied to deposits surrounding most of the house. In some instances, pre-1900 deposits were identifiable, but they were few. When Blee excavated here in the 1980s, much of her work was also limited to very general date ranges (1988). For this report, several intact deposits were found. By combining knowledge from all the research, much tighter dates could be assigned to these deposits.

One specialized dump, Kirmse Dump #2, was found north of the house. It was composed of alternating layers of ash and charcoal, inside a wooden box, and was very distinct from the surrounding soil. All artifacts pre-dated the end of World War I. Several fragments from an Alaska souvenir teacup cross-mended with fragments found by Blee that dated to right after the Kirmse family installed their cesspool in the backyard, about 1914-1917 (Blee 1988:88). Several artifacts do relate to the Kirmse family jewelry business — especially a dry cell battery and the souvenir Chilkat blanket teacup. Although a general date range from the artifact date ranges of 1903-1917 was assigned, this dump is definitely connected with the use of the property by the Kirmse family and must post-date their 1907 move to the site. By combining the historical and archeological information, a date of 1907-1917 for the use of this dump can be assigned.

The second intact deposit was the dump area northeast of the house. Historic photographs show the area was fenced by early 1898, and this fence was found in the excavation. The fence was straightened sometime between 1914-1917, and use of that northern section of the dump was eliminated. Most of the dump used by the Moore family from 1897 or 1898 until they left in 1907 was located in the area of this fence and was easily identifiable. Datable artifacts in this area all pre-dated the end of World

War I. Closer to the house and shed, the Kirmse family modified the dump area, added wooden walkways to access the dump, and placed at least one wooden floor in the dump itself. Artifacts were a mixture of pre- and post-World War I. Except for some stray trash on the surface, all artifacts pre-dated World War II. Artifacts from this dump were spread over a wide area, but their association with the dump could be confirmed because fragments of patterned ceramic ware as much as ten feet apart still fit together. The time for the use of this dump, possibly as early as 1907 until the late 1930s, spans Skagway's post-gold rush years. That was a time when alcohol went from being a legally consumed beverage to one that had to be drunk in secret, a time when tourists in Skagway went from being a novelty to being necessary to its economic health, and a time when the rest of the world went from the heady "boom" days of the 1920s to the economic depression of the 1930s.

The privy deposits presented the most challenge for dating. In the area where the deposit was found, historic photographs showed a privy there from 1897 until 1900, and again beginning about 1908-1910. The time the privy was torn down was determined through examination of the artifacts and knowledge of the site. Indoor plumbing was installed in the house sometime between 1914-1917. No artifacts definitely post-dated World War I; however, several pieces of ceramic ware post-dated 1914. A chamberpot, still in usable condition, was found right below the deposit of ash and burned rock that composed the top fill for the privy. This definitely seems to link the closing of the privy with reliance upon indoor plumbing. Since it is unlikely that several pieces of ceramic dishes would have been broken immediately, a closing date of around 1917 seems more likely.

Another problem with the privy was where the Kirmse privy ended and the Moore privy began. Neither was a wood-lined vault, and the division between the two was not clear during excavation. Based on datable artifacts, and some large pieces of cloth lying in the soil, an arbitrary line between the two was drawn. But it was information from the palynological studies that really clarified that division (appendixes 7 and 8). Moore kept goats, pigs, poultry, and horses on this property (NARS, Price v.

Moore 1979 [1899]:5). Photographs show that some animals were penned in the area of the privy. Dung fungal spores (*Sporormiella*) from grazing animals were found in the Moore privy deposits, but not in the Kirmse levels. In fact, the dung spores began at the same juncture in the vertical stratigraphy — in level 8 of unit 128N118E — that was assigned as an interface between the early and later privy. Although the dung fungal spores did occur deeper than level 8, they were not in the soil covering that level. This information lends even more assurance that the division of the archeological deposits is correct.

## Where Was the Trash?

Archeologists like to understand where and why people discard their household items. That is basic to understanding an archeological site. Trash disposal strategies in Skagway have been examined several times — at the Mill Creek dumpsite north of the Moore House (Blee 1991;DePuydt et al. 1997; Rhodes 1988), at the Block 39 site (Cooper 1998: 248-249), and here at the Moore/Kirmse House site (Blee 1988:279-281). Residences on the Block 39 site were located about half a mile south of the Moore/Kirmse House. Studies there showed that residents located household dumps to the rear of their house. In one instance, when a “rear” of the house became the “front” of the house because of a change in the way people walked or rode past it, a conscious effort seems to have been made to change where litter accumulated. This same pattern was true at this site, where the household dump for both the Moore and Kirmse families was located out of sight, in the relic streambed north of a shed.

In Blee’s work at the Moore/Kirmse house, she found that “sheet trash,” non-structural artifacts (artifacts lost or discarded in general yard areas, not in specialized dump areas), were denser away from the house than close to it. This was also found true in a study looking at trash disposal practices in rural homesteads in Texas (Blee 1988:281). Blee did find that artifacts were denser next to an ancillary structure (the log cabin west of the house) than in other yard areas. With the data from the current studies, we can revisit and supplement Blee’s information about trash disposal at this site. Deposits in the 1940s builder’s trench were all located within three feet of the house, on all sides. Artifacts were also recovered

from the area about 35 feet southwest of the house (Southwest Yard database), and near Shed 1, directly east of the house (Boardwalk database). Since artifacts from the topsoil layer were removed for this analysis, we are looking at processes that were valid before World War II. Just for comparison, non-structural artifacts in the Kirmse privy and dump areas were an average of 32.5 and 27.1 per cubic foot, respectively.

As shown in table 21, artifact densities are lowest in areas farthest from the house — Blee’s Operation 16 about 50 feet south of the house, and the boardwalk running 14 to 54 feet east of the house. However, the boardwalk area is also close to two sheds. Using the rationale that items are discarded more frequently near ancillary structures, more artifacts should have been located there. The artifact densities for areas both adjacent to the house and in the southwest yard are very similar. That could be because a shed once was located in the southwest yard, and our excavations were in its periphery. The higher density is from trash accumulating around that building.

People in the past looked at trash disposal differently from people of today, just as people in the future may wonder how divergent practices such as littering and recycling can co-exist in today’s society. Clearly, a lot of trash was being discarded within three feet of the house and around the perimeters of various outbuildings. Although not broken out in table 21, in excavations adjacent to the house, the highest quantity of artifacts was found on the east side, between the house, the shed and the dump, as would be expected. The artifact density north of the house, the rear of the house, is higher than south of the house where more concentrated cleanup efforts probably took place. The low density south of Shed 1 possibly is because results for those two units were combined with two excavation units farther east. Or perhaps the wooden walkway limited artifact deposition in this area.

The rationale for trash disposal practices can be complicated, but patterns from the Skagway sites are beginning to emerge. Archeologists who hope to recover something more than just nails and window glass should concentrate their efforts in areas that were hidden from public view, such as the rear area of most houses. Unlike most of today’s homes, areas

**Table 21 - Non-Structural Artifact Density Comparison**

<b>Deposit Location</b>	<b>No. of Fragments</b>	<b>Density</b>
North of house (Blee)	693	2.6
West of cabin (Blee)	158	6.3
East of cabin (Blee)	268	5.6
South of house (Blee)	32	0.8
Southwest of house	162	4.9
East of house	26	1.2
Adjacent to house	299	4.6

that were or are within several feet of buildings are also likely to be good locations to seek artifacts that can be used to analyze human behavior.

### **CHANGE AND CONTINUITIES BETWEEN GOLD RUSH AND POST-GOLD RUSH SKAGWAY**

This is the eighth in a series of archeological reports on fieldwork in Skagway, Alaska. Several of these reports, especially those reporting on excavations at the Gold Rush Mill Creek Dump/Peniel Mission site (DePuydt et al. 1997; Rhodes 1988), the post-Prohibition privy of a Catholic priest (Spude et al. 1993), and four residential privies on Block 39 (Cooper 1998), contain data that can be divided into a gold rush period (1897 until about 1905) and a post-gold rush era (1905 until about World War I). This is a span of about twenty years, and normally there would be no reason to divide such a short time span. But Skagway after 1905 was a much different town than in years prior. From 1897 until 1905, a city was born, buildings erected, and an economic base was created that was supported by large numbers of people transiting through the area who purchased a significant number of perishable and durable goods. After 1905, the town's population dropped below 1,000 (Spude 1983:35). People transited through town more seasonally, and tourism was actively pursued. During the gold rush, ships arrived in Skagway regularly throughout the year, bringing with them varied products for Skagway

merchants. After 1905, with a dwindling year-round population, fewer ships arrived throughout the year; and the number of dockings peaked in the summer. With artifact databases as precisely dated as the ones in Skagway, questions regarding continuity and change between these two dramatically different periods can be examined. Many other questions could also be asked of the data, but are outside the goals for this project. However, other researchers are encouraged to make use of this data in studies that can take it beyond the particularistic boundaries of Skagway, Alaska.

### **Ceramics at the Moore/Kirmse House**

When comparing the ceramics used by the Moore and Kirmse families, it is more useful to only work with pieces that could be identified to a specific form. Vessels that could not be positively identified to a known type were not used (i.e., "plate/saucer" or "dish" designations were not included in this table). In table 22, "Whiteware" includes earthenware and ironstone/ graniteware. "Nappies" are saucers or butter dishes that are less than five inches in diameter. After the separate vessel forms are listed, they are summarized and divided into two categories: serving ware, that are vessels for eating, including the small nappy or butter dishes, and tea ware, vessels used in a tea setting, such as cups, saucers, and dessert plates.

Distinct differences are seen between the whiteware and porcelain assemblages. In terms of the overall

Table 22 - Ceramic Vessel Forms

Style	Moore	Kirmse	Other	Total
<b><i>Whiteware, serving:</i></b>				
Plate	0	13	15	
Bowl	1	11	7	
Serving hollowware	0	4	1	
Serving flatware	0	1	0	
Nappy	1	2	0	
<b><i>Whiteware, tea:</i></b>				
Plate, Dessert	0	2	1	
Saucer, Teacup	4	16	7	
Cup	2	6	10	
<i>Whiteware Subtotals</i>	8	55	41	
Whiteware "Serving ware"	25%	56%	56%	
Whiteware "Tea ware"	75%	44%	44%	
<b><i>Porcelain, serving:</i></b>				
Plate	0	4	3	
Bowl	1	0	3	
Serving hollowware	1	1	2	
Nappy	1	1	0	
<b><i>Porcelain, tea:</i></b>				
Plate, Dessert	1	1	0	
Saucer, Teacup	3	17	11	
Cup	1			
<i>Porecelain Subtotals</i>				
Porcelain "Serving ware"	38%			
Porcelain "Tea ware"	62%			
<i>Total "serving ware"</i>				
<i>Total "tea ware"</i>				
<i>Total "serving ware"</i>				
<i>Total "tea ware"</i>				

distribution, the porcelain is dominated by tea ware (74%), while the whiteware vessels are much more evenly divided. They were probably purchased and used as part of large dinner serving sets, while porcelain cups and saucers were bought separately. The number of identifiable ceramic vessels for the Moore family was small, but there was still more tea ware than serving ware. That is probably because they only lived there for 10 years and larger vessels, such as plates and serving dishes, tend to break less often than more fragile cups and saucers. The length of time that the Kirmse family lived on the site probably also accounts for the more even distribution between total serving ware and tea ware, since in time even larger serving ware will break and be discarded.

Sometime between 1901 and World War I, one of the large china manufacturers verbalized the role of tea ware in American life:

Whether the strenuous life or pretty tea cups is responsible, the custom of serving tea in the afternoon is growing in favor. It makes a little break in the day and is a "becoming" function—a graceful woman presiding over a well-appointed tea table forms a picture one likes to see often.

\* \* \*

No one would assume that a love of good china was the root of all hospitality...but it's a green and vigorous shoot. [Taylor, Smith & Taylor Co. n.d.:7]

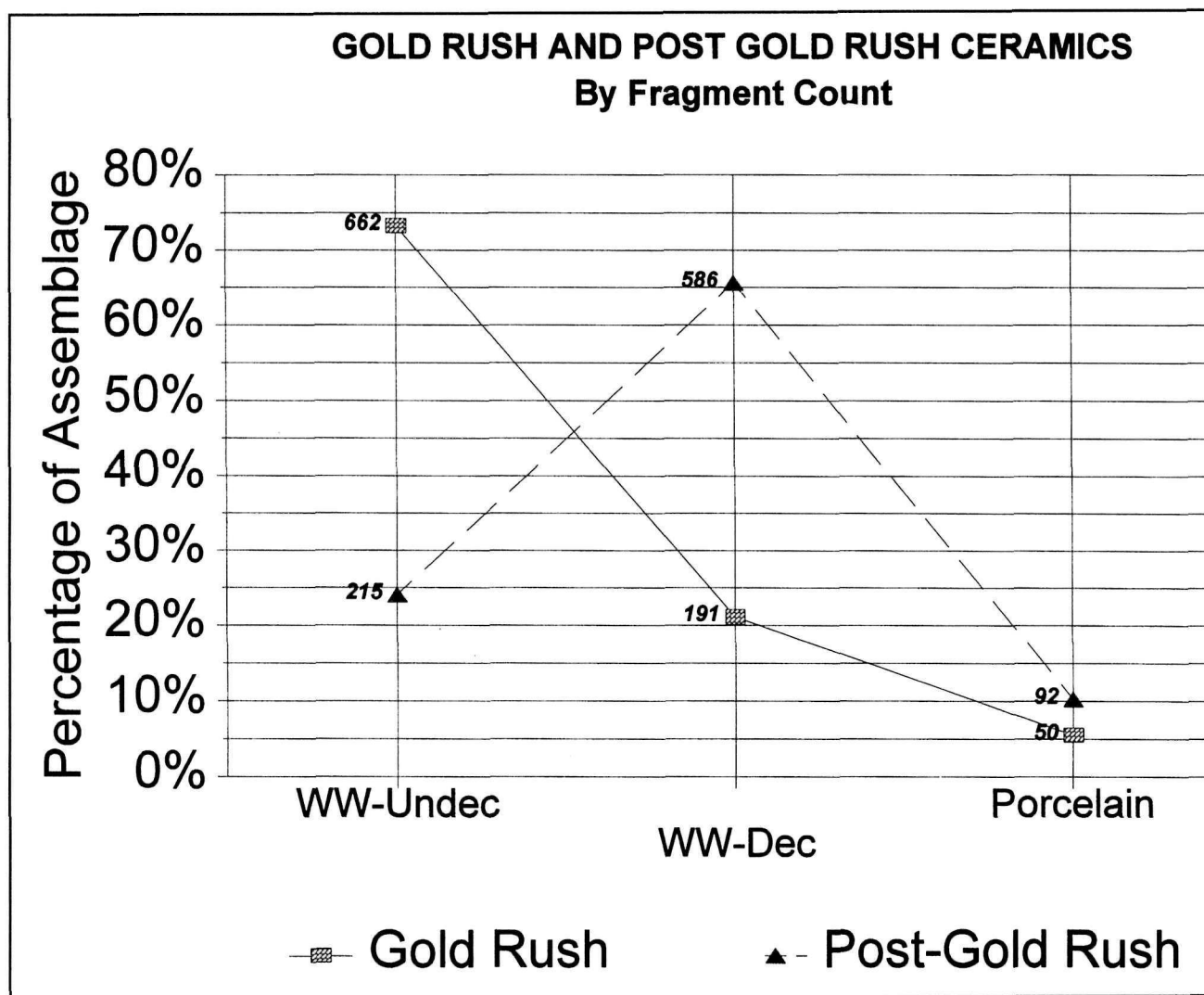
Skagway families, although geographically isolated, were not immune from the social ideas and norms practiced in the rest of the United States. Hazel Kirmse's porcelain tea ware was highly decorated and extremely varied in decoration style. This fits with the notion of having special dishes used just for entertaining, something Hazel Kirmse did quite often in her role as hostess at many social events. There are very few post-gold rush deposits in Skagway to compare the Kirmse assemblage to. However, the number of porcelain serving vessels used by Skagway families living on Block 39 was much less than at the Kirmse house (Cooper 1998:186-188).

Archeologists often use ceramic tableware ("ceramics") to discern information about social behavior, and the archeological literature is so replete with these studies that several pages would be required to list them all. One reason for their popularity is that different types of ceramics differ in price (porcelain dishes are more expensive than non-porcelain, for example). Also, decoration styles changed through time, and these changes affect their affordability. The ceramic assemblage in the Kirmse and Moore dump spans the gold rush and post-gold rush period. The quantity of ceramics was much less in the Moore deposits — only 22 identifiable vessels versus 106 for the post-gold rush Kirmse deposits. The low quantity recovered in the Moore deposits is because (a) they only lived on the site for ten years, and (b) ceramic artifacts are only deposited into dump or privy sites when they are broken enough to become unusable. Normally, not that many dishes are broken every year, so there is a very gradual deposition of ceramics into the soil through the years. This process was labeled "artifact rain" in Blee's earlier report (1988). Despite the differences in quantity, the differences between decoration types for the two assemblages were minimal (figure 55).

### Comparing Gold Rush and Post-Gold Rush Ceramics

To get a better idea of possible changes between gold rush and post-gold rush times, the ceramic assemblages at the Moore/Kirmse can be combined with those from other dated sites in Skagway. One of the problems with doing that, however, is that a few of the earlier authors did not calculate minimum number of ceramic vessel counts on all of the fragments recovered; and another did not summarize the number of ceramic fragments by ware or decoration type. For this report, results from both different methods will be presented. The gold rush fragment assemblage consists of ceramics from the Mill Creek Dump/Peniel Mission gold rush strata (DePuydt et al. 1997; Rhodes 1988), the Hillery and Hockett #1 privies from Block 39 (Cooper 1998), and all of the Moore dump and privy deposits from this site. The post-gold rush assemblage consists of the Hockett #2 and the Rapuzzi privies from Block 39 and the two Kirmse dumps and the privy. For the minimum vessel count, the same deposits from Block 39 and the Moore House are used, with the addition of the Catholic priest's privy (Spude et al. 1993).





**Figure 89.** Comparison of gold rush and post-gold rush ceramics, fragment-count chart.

Figure 89 presents the results of the gold rush and post-gold rush assemblages when a fragment count is used. The differences between whiteware types is astonishing — more than 70% of the gold rush collection consists of undecorated whiteware, while the post-gold rush collection is dominated by decorated whiteware. If this is true, then the shift in ceramic styles could be due to the demographic shift that occurred after the gold rush. During the gold rush, Skagway's population was more than 70% male, most of whom were single. In the post-gold rush years, the balance between the sexes gradually evened out until they were almost the same in 1990 (Cooper 1998:219). The difference, however, may be an artifact of the contributors to the Mill Creek dump during the gold rush. In her dissertation, Blee chose

to analyze four excavation units in the gold rush strata of the Mill Creek dump. While her initial assumption was that the families living adjacent to the dump would have been the primary contributors, her regression analysis suggested that was not always so, and that some business establishments could have also been contributing to the dump (Blee 1991:290-293). The Block 39 and Moore/Kirmse sites are comparable because they are both residential. However, only 25% of the Moore's ceramics were undecorated, while 42% of the gold rush Block 39 residents' ceramics were undecorated. Thus, when considering the number of ceramic fragments from the gold rush era, there does seem to be a trend toward more undecorated ware, and very low quantities of porcelain dishes.

**Table 23 - Summary of Types of Visible Seeds**

Seed/Shell	Gold Rush		Post-Gold Rush	
	Moore Privy	Moore Dump	Kirmse Privy	Kirmse Dump
Apple	1			
Apricot	2	2		
Berry	25			
Cherry	2			
Coconut		1		
Cranberry, high bush	2			
Grape	14			
Melon	6			
Peach	1	2	2	12

Figure 90 presents the results of a ceramic assemblage analysis using minimum vessel counts. This shows a much higher correlation between the gold rush and post-gold rush assemblages. Porcelain only accounts for 21% of each assemblage, while the number of undecorated whiteware vessels is actually slightly higher in the post-gold rush data. This is almost opposite of what was found using deposits with fragment counts. Clearly, more work needs to be done before any conclusions can be drawn. The results from Blee's study indicate caution needs to be used when comparing the Mill Creek dump deposits with other residential sites. If the Mill Creek dump ceramic assemblage was converted to minimum number of vessel counts, then some of the differences might also be minimized.

### Variety in the Diet

Another way to compare consumption in the gold rush and post-gold rush era is by looking at what people ate. In the faunal analysis (appendix 6) for the Moore/Kirmse house, for the gold rush deposits, there is a more varied meat diet — various kinds of fowl, some unidentifiable small mammals, snowshoe hare, fish, and shellfish. There could be various explanations for this possible trend, ranging from particularistic — the Moore's liked to hunt for their

food, or before the gold rush they were poor, and were used to providing for themselves, or varied meat consumption was accentuated by Minnie Moore's Tlingit upbringing — to economic — an insufficient amount of meat was being shipped to Skagway during the gold rush, and people had to rely on local resources. However, Rhodes did extensive research on food consumption during the gold rush and found that a variety of meat was easily available in Skagway during that time (1988:283-291). In the gold rush deposits at the Mill Creek dump, bones or shells from 15 different species could be identified, while later deposits contained a maximum of 7 species (Rhodes 1988:277).

Is that trend also seen in the fruit and vegetal remains at the Moore/Kirmse house? In table 23, the wide variety of visible, identifiable seeds found in the gold rush (Moore) deposits compared to their almost total absence in the post-gold rush is striking.

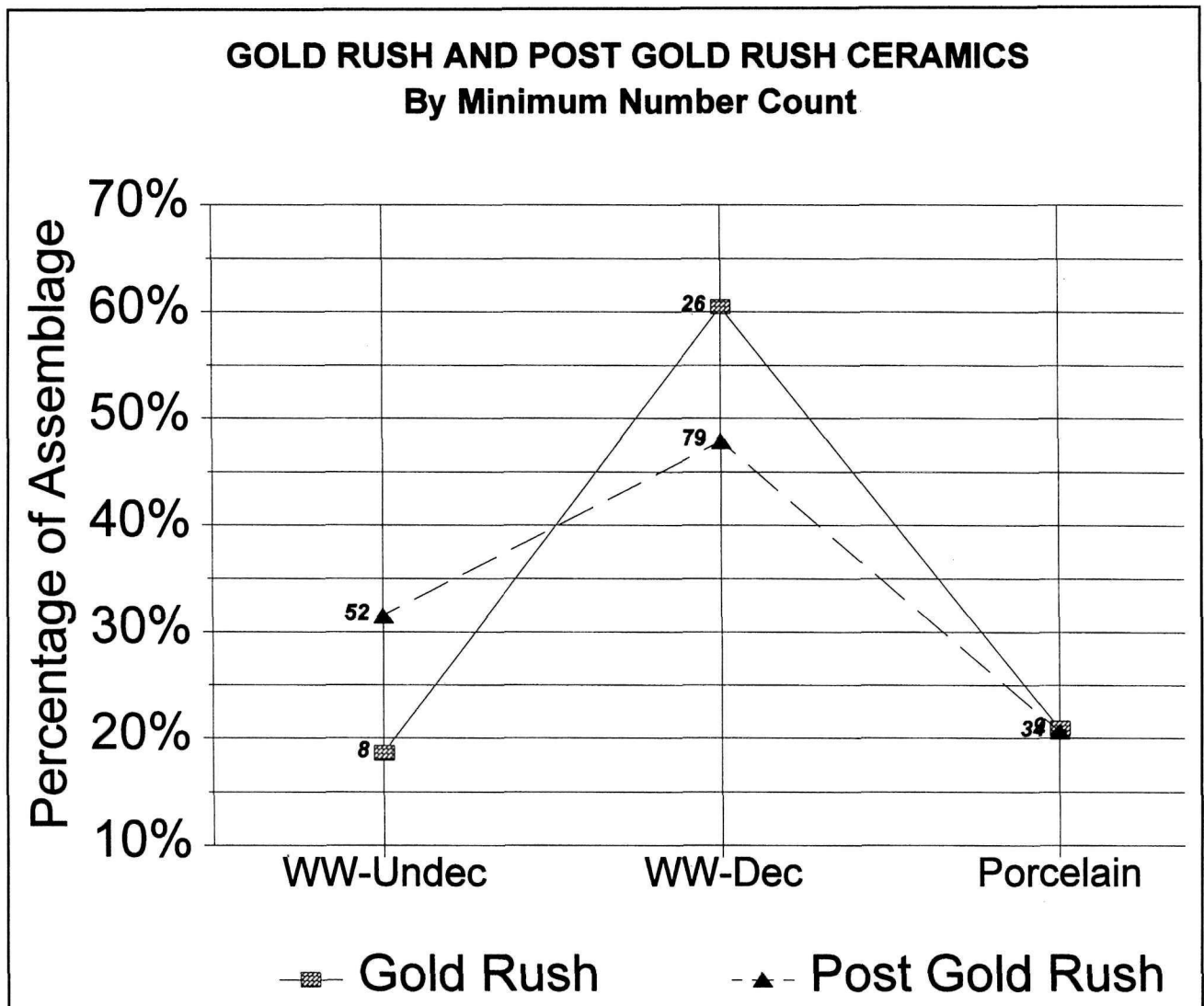
In the macrobotanical analysis, even more information was obtained about the consumption of fruits and vegetables at the site.

When the absolute seed counts are calculated into counts per liter (table 5, appendix 9), the rubus (raspberry) seeds dominate the samples from the

Moore dump, partly because the plant produces a high quantity of very small seeds. Raspberry bushes are native to the Skagway area, and their dominance in the Moore's dump and privy might also relate to alterations in the landscape after they left Skagway. There are also fairly high amounts of fig seeds, a plant that is not native to Skagway and would have been imported, most likely as dried fruit.

In table 24, the pollen information is added to the macrofloral information. The variety of plants consumed by the Moore and Kirmse families seems to be more balanced - each privy has 10 species represented in the fecal remains. In the dump, the view is much more unbalanced — the earlier dump has seven species represented, while the later dump has only three species. The phytolith analysis from

the unit on the periphery of the Kirmse dump showed that much more grass was present in that sample, and that very little pollen at all was found in Feature 23 — in either pollen analysis (only 54 pollen grains were identified in the Cummings report, and almost none in the Reinhard report). When this information is combined with the knowledge that the soil matrix was composed of thousands of tin can fragments, this is the probable explanation for the reduction of species represented in the Kirmse dump versus the human waste remains found in the privy. However, since there was a consistency in the types of pollen and seeds found in both the Moore privy and the Moore dump, this might very well indicate that people living in Skagway after ca. 1910 depended much more on canned, rather than fresh, food.



**Figure 90.** Comparison of gold rush and post-gold rush ceramics, MNI-count chart.

**Table 24 - Fruit/Vegetable Consumption at the Moore House Site**

	Kirmse Dump		Kirmse Privy		Moore Dump		Moore Privy		Gold Rush	Post-Gold Rush
Plant Species	Macro <sup>a b</sup>	Pollen	Macro <sup>a b</sup>	Pollen	Macro <sup>b</sup>	Pollen	Macro <sup>b</sup>	Pollen		
Blueberry	0	x <sup>c</sup>	9	x	1	0	116	x	117	9
Berry, other <sup>d</sup>	0	0	0	0	18	0	17	x	25	0
Citrus	0	0	0	x	0	0	0	0	0	x
Fig	2	x <sup>c</sup>	42	0	13	0	216	0	249	44
Grape/raisin	0	0	14	x	0	0	23	0	23	14
Raspberry	0	0	233	0	1086	0	201	0	1287	233
Strawberry	0	0	398	x	3	0	16	x	19	398
Tomato	0	0	49	0	2	0	0	0	2	49
Celery	0	0	0	0	0	0	0	x	x	0
Cereal	0	x	0	x	0	x <sup>e</sup>	0	x	x	x
Clove	0	0	0	x	0	0	0	x	x	x
Mint	0	0	0	x	0	0	0	x	x	x

<sup>a</sup> Absolute counts from tables 3 and 4, appendix 9 are used.

<sup>b</sup> Absolute counts from the samples are combined and averaged.

<sup>c</sup> These are from the dump periphery, unit 139N92E, Level 4.

<sup>d</sup> Mostly high bush cranberry and elderberry

<sup>e</sup> Phytolith only

## Prohibition in Skagway

Information about the impact Prohibition had on Skagway has been studied previously (Spude et al. 1993). Data from this site can be used to supplement that original data. In table 25 most of the bottles were found in pre-Prohibition deposits. However, almost all of the bottles that could be positively identified as soda were in post-1940 deposits. There were very few beverage bottles found in deposits that dated to the first 10 years when the Moore family lived on the site (10% in appendix 5, MNI count), and most of them were flasks, picnic, or shoo-fly styles (figure 58). However, they do not seem to end during Prohibition, their quantity just decreases.

Prohibition happened earlier in Skagway than in most Alaska towns. It was voted in on a local referendum, and the saloons were closed down on August 21, 1916 (*DA* 8/21/16:1). Frank Norris presented the results of research on the facts and effects of Prohibition on Skagway residents (Spude et al. 1993:92-101). In terms of legal enforcement, it appears that from 1914 through 1917, most efforts were aimed at stopping the selling of alcohol to the city's Tlingit residents. From 1917 to 1927, enforcement focused

on the possession of alcohol. From 1927 through 1933, efforts were redirected to the prosecution of public displays of intoxication, and other socially adverse situations (Spude et al. 1993:97-99). Prohibition was not repealed in Alaska until April 13, 1934 (Spude et al. 1993:98, fn. 143).

It seems that when the privy was closed ca. 1917, the household made a concerted effort to discard the alcoholic beverage bottles that were illegal. Next door, the Catholic priest, Father Turnell, also appears to have changed his personal habits to comply with the new laws. In the report on his privy, the authors concluded that part of his efforts were because of his standing in the community (Spude et al. 1993:106). The evidence from the Moore/Kirmse site seems to indicate that Father Turnell's efforts were merely a part of what was taking place all over Skagway, and perhaps the United States. There is a good chance, however, that efforts to comply with the new "dry" law did not last very long.

Why did the quantity of bottles decrease in the 1907-1936 dump? Could it have been that it was now more important to save bottles so they could be reused as part of the "homebrew" activities during

Prohibition? Another Skagway resident said that was taking place in Skagway during Prohibition (Spude et al. 1993:100). We received some more information about Prohibition from Mrs. Georgette Kirmse: "Prohibition made a great impact on the entire town. Everyone had his own still. Apparently, there was great competition on the quality of their products. Kirmse's had a beautiful still with copper coils. It was in our attic and was sold for \$400 to a group of young men when we auctioned off all of our household goods in 1976. The liquor they produced was used socially" (G. Kirmse 1995, pers. comm.).

Prohibition generally seems to be regarded as a flawed and failed social experiment. Historical archeologists, dealing with the discards of everyday life, should take the opportunity to contribute to continuing discussions on Prohibition's effects on the lives of many people. It is a fascinating bit of American social history and deserves wider study.

#### **RECOMMENDATIONS FOR FUTURE INTERPRETATION AND SITE MANAGEMENT**

These excavations proved that there is information to be learned from investigation of cultural resources at this site. Steps should be taken to preserve

unexcavated portions of the site, especially in the areas where privies and dumpsite were located. Any ground-disturbing activities in these areas should be carefully considered before allowing construction to proceed. Steps to expand on the information presented in this report could also be taken.

#### **(1) Synthesize the archeological results from Skagway sites.**

Results from archeological fieldwork have now been reported in eight different volumes, and the complete series will contain 10 or 11 volumes. An overview summarizing and synthesizing the results of this work should be prepared for use by site interpretive rangers or distribution to interested visitors. It could be presented in a choice of media, but the important thing is that everything would be presented in one place. Very few people are willing to search through 10 or 11 volumes to ferret out useful information.

#### **(2) Expand on some of the interpretive themes presented in this volume.**

Information on manipulation of the cultural landscape, Tlingit land use and concepts, the transculturation experience of a Tlingit woman, the development of the tourist

**Table 25 - Bottles by Type and Time/Period**

	<b>Bottle, Uniden.</b>	<b>Bottle, Beer</b>	<b>Bottle, Wine/Ale</b>	<b>Bottle, Liquor</b>	<b>Bottle, Soda/ Milk</b>	<b>Totals</b>
<b>Post-1940</b>	4	1	6	4	16	31
<b>1907-1936 dump</b>	10	2	0	9	6	27
<b>1910-1917 privy</b>	11	8	0	28	0	47
<b>1900-1920 dump</b>	2	0	0	4	0	6
<b>Pre-1900</b>	0	0	0	6	0	6
<b>Totals</b>	27	11	6	51	22	117
<b>Totals (%)</b>	23%	9%	5%	44%	19%	



industry, and changes and continuities between the gold rush and post-gold rush eras in Skagway have been presented. These concepts could be further developed in special exhibits, short brochures, or in an Internet site, where they could reach a wide audience of taxpayers.

(3) **Sponsor artifact studies.**

More consistent, comparative information on artifacts from all the Skagway excavations would be a boon to archeological researchers. Having that information easily available to researchers on a Web site would also make the work done here more widely known, and the data available to a larger group than is currently accessing it.

---

## REFERENCES CITED

- Adams, Samuel Hopkins  
1905 The Subtle Poisons. In "The Great American Fraud "(reprinted from *Collier's Weekly*, December 2, 1905), pp. 32-44.
- Adams, William Hampton  
1980 Remote Sensing, in *Waverly Plantation: Ethnoarchaeology of a Tenant Farming Community*. National Technical Information Service, Washington, D.C.
- Adams, William H., and David R. Brauner  
1991 Historical Archaeology in Skagway, Alaska: Archaeological Overview and Assessment of the Downtown Skagway Unit, Klondike Gold Rush NHP. Draft ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- Adkins, Charles  
1998 Analysis of Miscellaneous Cartridge Cases: Skagway, AK. Bureau of Land Management, Fairbanks, Alaska. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- American Institute of Architects  
1981 *Ramsey/Sleeper Architectural Graphic Standards*. John Wiley & Sons, New York.
- Anchorage Daily Times*  
1962 Former Old-Time Skagway Woman Dies in Seattle [Hazel Kirmse]. April 25, page 2.
- Anderson, Texas, and Roger Moore  
1988 "Meaning and the Built Environment," in *Recovery of Meaning, Historical Archaeology in the Eastern United States*. Mark P. Leone and Parker P. Potter, Jr., eds. Smithsonian Institution Press, Washington, D.C.
- Angione, Genevieve  
1981 *All Bisque & Half-Bisque Dolls*. Schiffer Publishing, Exton, Pennsylvania.
- Barlow, Ronald S.  
1992 *A Price Guide to Victorian Houseware, Hardware & Kitchenware*. Windmill Publishing Co., El Cajon, California.
- Baumann, Paul  
1987 *Collecting Antique Marbles*. Wallace-Homestead Book Co., Greensboro, North Carolina.
- Bearss, Edwin C.  
1970 *Proposed Klondike Gold Rush National Historical Park, Historic Resource Study*. U.S. Dept. of the Interior, National Park Service, Office of History and Historic Architecture, Eastern Service Center, Washington, D.C.
- Berton, Pierre  
1958 *The Klondike Fever*. Carroll & Graf Publishers, New York.

Blee, Catherine Holder

- 1983 *Archeological Investigations in Skagway, Alaska, Volume 1: The White Pass and Yukon Route Broadway Depot and General Offices Building, Klondike Gold Rush NHP*. U.S. Dept. of the Interior, National Park Service, Denver, Colorado.
- 1988 *Archeological Investigations in Skagway, Alaska, Volume 2: The Moore Cabin and House, Klondike Gold Rush NHP*. U.S. Dept. of the Interior, National Park Service, Denver, Colorado.
- 1991 Sorting Functionally-Mixed Artifact Assemblages with Multiple Regression: A Comparative Study in Historical Archeology. Ph.D. dissertation, University of Colorado-Boulder. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.

Blee, Catherine, Robert Spude, and Paul Cloyd

- 1984 *Historic Structures Report for 10 Buildings*. National Park Service, Denver, Colorado.

British Columbia Legislative Assembly

- 1891 1887-1890 Report, 54 VICT 481-483. Correspondence on Trail through White Pass. British Columbia Archives, microfilm.

British Columbia Provincial Archives, Victoria, B.C.

- 1917 B.C. Archives and Records Service GS1327, file 28/17, reel B2399.

Campbell, June, Donald Gestner, and Mildred Muldane

- 1997 Audio-taped interview conducted by D. Cooper. Tape and transcript on file, Klondike Gold Rush NHP, Skagway, Alaska.

Clifford, Howard

- 1975 *The Skagway Story*. Alaska Northwest Publishing Co., Anchorage, Alaska.

Clinton, C.

- 1899 Directory and Guide, Skagway, Metropolis of Alaska and Gate to the Golden North. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.

Connor, Cathy, and Daniel O'Haire

- 1988 *Roadside Geology of Alaska*. Mountain Press Publishing Company, Missoula, Montana.

Cooper, Doreen

- 1993a Scope of Work, Moore House Project. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1993b Moore House Project: Field notes and Unit Forms. Accession 276, on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1994a Moore House Project: Field notes and Unit Forms. Accession 290, on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1994b Archeological Mitigation and Testing Plan: Moore House Site. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1995a Moore House Project: Field notes and Unit Forms. Accession 300, on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1995b Klondike Gold Rush NHP Field Manual, Procedures for Excavation and Survey in Archeological Investigations. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- 1998 *Archeological Investigations in Skagway, Volume 6: Residential Life on Block 39*. U.S. Department of the Interior, National Park Service, Anchorage, Alaska.

Cooper, Doreen, and Debbie Sanders

- 1994 Klondike Gold Rush NHP Archeology Laboratory Manual. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.

Creswick, Alice

- 1987 *The Fruit Jar Works*. Privately published. Grand Rapids, Michigan.

Cruikshank, Julie

- 1990 *Life Lived Like a Story, Life Stories of Three Yukon Native Elders*. University of Nebraska Press, Lincoln.
- 1991 *Dän Dhá Ts 'edeninth'e, Reading Voices Oral and Written Interpretations of the Yukon's Past*. Douglas & McIntyre, Vancouver.
- 1996 Discovery of Gold on the Klondike: Perspectives from Oral Tradition, in *Reading Beyond Words, Contexts for Native History*, Jennifer S. H. Brown and Elizabeth Vibert. Broadview Press, Petersborough, Ontario.
- 1998 *The Social Life of Stories: Narrative and Knowledge in the Yukon Territory*. University of Nebraska Press, Lincoln.

d'Aigle, Robert

- 1996 Minnie E. and J. Bernard Moore Cabin and House: Proposed revisions to Building History and 1900-1905 Depiction. Ms. on file, Klondike Gold Rush NHP, National Park Service, Skagway, Alaska.

*Daily Alaskan* [Skagway] [In text: DA]

1898-

- 1924 Microfilm on file at Klondike Gold Rush NHP, Skagway, Alaska.

*Daily Colonist* [Victoria, British Columbia] [In text: DC]

1896-

- 1904 Microfilm on file at Klondike Gold Rush NHP, Skagway, Alaska.

Dauenhauer, Nora Marks, and Richard Dauenhauer

- 1994 *Haa Kusteeyí, Our Culture: Tlingit Life Stories*. University of Washington Press, Seattle. Sealaska Heritage Foundation, Juneau.

Davidson, D.S.

- 1928 Family Hunting Territories in Northwestern North America, *Indian Notes and Monographs*, No. 46, F.W. Hodge, ed. Museum of the American Indian, Heye Foundation, New York.

Davis, Stanley D.

- 1990 Prehistory of Southeastern Alaska. In *Handbook of North American Indians*, Vol. 7, *Northwest Coast*, edited by Wayne Suttles, pp. 197-202. Smithsonian Institution, Washington, D.C.

DeBolt, C. Gerald

- 1988 *The Dictionary of American Pottery Marks, Whiteware and Porcelain*. Charles E. Tuttle Company, Rutland, Vermont, and Tokyo, Japan.

deLaguna, Frederica

- 1949 *An Anthropological Survey of the Northern Tlingit*. Smithsonian Institution, Washington, D.C.
- 1990 Tlingit. In *Handbook of North American Indians*, Vol. 7, *Northwest Coast*, edited by Wayne Suttles, pp. 203-228. Smithsonian Institution, Washington, D.C.

DePuydt, Ray

1988 *Field Season Report, Moore House*. Acc. 191, on file, Klondike Gold Rush NHP, Skagway, Alaska.

DePuydt, Ray, Gwen Hurst, Stephanie Ludwig, and Alfred Cammisa

1997 *Archaeological Investigations in Skagway, Alaska, Volume 5: Additional Investigations at the Mill Creek Dump and the Peniel Mission*. U.S. Dept. of the Interior, National Park Service, Anchorage, Alaska.

Dorland, W.A. Newman

1988 *Dorland's Illustrated Medical Dictionary*. Saunders Publishing, Philadelphia.

Eastin, June

1965 *Bottles West, Vol. 1*. Press-tige, Ontario, California.

Edwards, Clive D.

1996 Floorcloth and Linoleum: Aspects of the History of Oil-Coated Materials for Floors. *Textile History* 27(2):148-171.

Eidt, Robert C.

1973 A Rapid Chemical Field Test for Archaeology Site Surveying. *American Antiquity* 38(2):206-210.

Emmons, George Thornton, and Frederica de Laguna

1991 *The Tlingit Indians*. Edited with additions by Frederica de Laguna and a biography by Jean Low. Douglas & McIntyre, Vancouver.

Fawcett, Clara H.

1947 *Dolls, A Guide for Collectors*. H.L. Lindquist Publications, New York.

Fike, Richard

1987 *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles*. Peregrine Smith Books, Salt Lake City, Utah.

Foster, Nora R.

1991 *Intertidal Bivalves: A Guide to the Common Marine Bivalves of Alaska*. University of Alaska Press, Fairbanks, Alaska.

Franklin, Linda Campbell

1992 *300 Years of Housekeeping Collectibles*. Books Americana, Florence, Alabama.

Frink, Douglas S.

1997 E-mail on HISTARCH bulletin board re: soil chemicals, February 8, 1997.

Gates, Michael

1994 *Gold at Fortymile Creek: Early Days in the Yukon*. UBC Press, Vancouver.

Gates, W.C. Jr., and D.E. Ormerod

1982 The East Liverpool, Ohio, Pottery District; ID. of Manufacturers and Marks. *Historical Archaeology* 16 (1-2).



- Giarde, Jeffrey L.  
1980 *Glass Milk Bottles: Their Makers and Marks*. Time Travelers Press, Bryn Mawr, California.
- Goldshmidt, Walter, and Theodore H. Haas  
1998 *Haa Aani, Our Land, Tlingit and Haida Land Rights and Use* [1946]. University of Washington Press, Seattle
- Godden, G.A.  
1964 *Encyclopaedia of British Pottery and Porcelain Marks*. Crown Publishers, New York.
- Golden Software, Inc.  
1995 *Surfer® for Windows, Version 6 User's Guide*. Written by Doug Keckler. Golden Software, Golden, Colorado.
- Greer, Sheila  
1995 *Skookum Stories on the Chilkoot/Dyea Trail*. Carcross-Tagish First Nation, Carcross, Yukon Territory.
- Gurcke, Karl  
1994 Assessment of Actions (XXX) Form ARO-93-229, J. Bernard Moore House Restoration. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.
- Hare, Paul Gregory  
1995 *Holocene Occupations in the Southern Yukon: New Perspectives from the Annie Lake Site*. Occasional Papers in Archaeology No. 5. Heritage Branch, Government of the Yukon Territory, Whitehorse, Canada.
- Hassan, Fekri A.  
1980 Rapid Field Quantitative Determination of Phosphate in Archaeological Sediments. Paper presented at the 45<sup>th</sup> Annual Meeting of the Society for Historical Archaeology, Philadelphia, Pa.
- Holmberg, Heinrich Johan  
1985 *Holmberg's Ethnographic Sketches*. Edited by Marvin W. Falk, Translated by Fritz Jaensch. University of Alaska Press, Fairbanks. (Originally published 1855-1863 as *Ethnographische skizzen ueber die volker des russischen Amerika*.)
- Illinois Glass Co.  
1987a "Diamond I" Products Including Bottles of Every Description [between 1916-1920], in *Trade Catalogs from the Corning Museum of Glass*. Clearwater Publishing Co., Inc., New York. On microfiche.  
1987b "Diamond I" Products, ca. 1920, in *Trade Catalogs from the Corning Museum of Glass*. Clearwater Publishing Co., Inc., New York. On microfiche.
- James, D.  
1967 *Drug, Perfume and Chemical Bottles, 1902*. (Whitall Tatum Company) Antique Research Publications, Signal Mountain, Tennessee.
- Jones, Livingston F.  
1914 *A Study of the Thlingets of Alaska*. Fleming H. Revell Company, New York.

- Kendall, Henry M., Robert M. Glendinning, Clifford H. MacFadden, and Richard F. Logan  
1974 *Introduction to Physical Geography*. Second edition. Harcourt Brace Jovanovich, San Diego, California.
- Ketchum, William C., Jr.  
1983 *Pottery & Porcelain*. Alfred A. Knopf, New York.
- Kirmse, Georgette  
1993 Videotaped interview, July 9. Videotape on file, Klondike Gold Rush NHP, Skagway, Alaska.  
1995 Answers to D. Cooper's written questions, January.
- Kovel, Ralph and Terry  
1986 *Kovels' New Dictionary of Marks, Pottery & Porcelain: 1850 to the Present*. Crown Publishers, Inc., New York.
- Knapp, Frances, and Rheta Louise Childe  
1896 *The Thlinkets of Southeastern Alaska*. Stone and Kimball, Chicago.
- Krause, Aurel and Arthur Krause  
1993 *To the Chukchi Peninsula and to the Tlingit Indians 1881/1882: Journals and Letters by Aurel and Arthur Krause*. Translated by Margot Krause McCaffrey. University of Alaska Press, Fairbanks.
- LaMotte Company  
1991 *Combination Soil Outfit Instruction Manual*. Model STH Series. LaMotte Company, Chestertown, Maryland.
- Lehner, Lois  
1988 *Lehner's Encyclopedia of U.S. Marks on Pottery, Porcelain & Clay*. Collector Books, Paducah, Kentucky.
- Lewellen, Faye  
1992 The Mineral That Won WWII, *Invention & Technology* (Winter):64.
- Lohmann, Watson M., ed.  
1972 *Illustrated Catalog and Price List, 1904, Whitney Glass Works*. Privately published, Pitman, New Jersey.
- Lunn, Kevin  
1981 Identification and Dating of Lea and Perrins/ Worcestershire Sauce Bottles on Canadian Historic Sites: Interpretations Past and Present, *Canadian Journal of Archaeology* 5:1-17.
- McClellan, Catharine  
1981a Inland Tlingit. In *Handbook of North American Indians*, Vol. 6, *Subarctic*, edited by June Helm, pp. 469-480. Smithsonian Institution, Washington, D.C.  
1981b Tagish. In *Handbook of North American Indians*, Vol. 6, *Subarctic*, edited by June Helm, pp. 481-492. Smithsonian Institution, Washington, D.C.
- McGuire, Eric  
1967 *The Old San Francisco Directory of Liquors, Wholesale and Retail, 1865-1919*. Privately published, Mill Valley, California.

Menzies, Malcom A.

- 1993 *Topographic & Property Boundary Map, Lots 1, 2, 3, Northerly 1/2 of Lots 7 & 8, Lots 9, 10, 11 & 12, Block 24 along with the Moore Tract. Within U.S. Surveys 435 and 13 Ammended [sic]. City of Skagway, Alaska.* On file, National Park Service, Skagway, Alaska.

Milburn, Maureen

- 1986 "Louis Shotridge and the Objects of Everlasting Esteem," in *Raven's Journey: The World of Alaska's Native People*, Susan A. Kaplan and Kristin J. Barsness. The University Museum, University of Pennsylvania, Philadelphia: 54-77.

Miller, Christine, and Patricia Chuchryk, editors

- 1996 *Women of the First Nations: Power, Wisdom, and Strength*. University of Manitoba Press, Winnipeg.

Moore, J. Bernard

- 1976 J.B. Moore Collection, MS-224, J. Bernard Moore photo album. Alaska and Polar Regions Dept., University of Alaska Fairbanks.
- 1997 *Skagway in Days Primeval, the Writings of J. Bernard Moore, 1886-1904*. Lynn Canal Publishing, Skagway, Alaska.

Montgomery Ward & Co.

- 1969 *Catalogue and Buyer's Guide No. 57, Spring and Summer, 1895* (unabridged facsimile). Dover Publications, New York.

Mulvihill, Carl E.

- 1999 Letter to D. Cooper, March 1. On file, Klondike Gold Rush NHP, Skagway, Alaska.

Munsell Color

- 1992 Munsell® Soil Color Charts. Macbeth, Division of Kollmorgen Instruments Corp., Newburgh, New York.

Munsey, Cecil

- 1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, New York.

National Archives Records Service (NARS)

- 1979 Memorandum of Agreement between Bernard Moore, William Moore and E.E. Billingham, "Ex. D", June 1896; Land Patent Application of Bernard Moore: September 16, 1897; Affidavit of J.T. Martin, October 1897; Adverse Claims (of I.E. Valentine et al.), October 21, 1897; J.F. Price et al. v. Bernard Moore: Brief for Moore, April 17, 1899; Brief for Moore, December 3, 1900. *Record Group 49, Records of the General Land Office. Division K, Townsite Files: Selected Documents Relating to Skagway Townsite*. General Services Administration, Washington, D.C. Microfilm.

National Park Service (NPS), U.S. Department of Interior

- 1994 Resource Management Plan, Klondike Gold Rush National Historical Park. On file, Klondike Gold Rush NHP, Skagway, Alaska.

Neufeld, David, and Frank Norris

- 1996 *Chilkoot Trail, Heritage Route to the Klondike*. Lost Moose Yukon Publishers, Whitehorse, Yukon Territory, Canada.

Norris, Frank

- 1996 *Legacy of the Gold Rush: An Administrative History of Klondike Gold Rush National Historical Park*. U.S. Department of the Interior, National Park Service, Alaska Support Office, Anchorage, Alaska.

Oberg, Kalvero

- 1973 *The Social Economy of the Tlingit Indians*. University of Washington Press, Seattle.

Olson, Wallace M.

- 1991 *The Tlingit: An Introduction to Their Culture and History*. Heritage Research, Auke Bay, Alaska.

Pavitt, R.W., and Associates

- 1976 Economic Base Study of Skagway Alaska. Economic Development Administration, U.S. Department of Commerce, Technical Assistance Project No. 07-6-01723. Ms. on file, Klondike Gold Rush NHP, Skagway, Alaska.

Pierce County Deed Records [Washington] (PCDR)

- 1909 Deed No. 293041, May 29, 1909. Pierce County real property records, Tacoma, Washington. Microfilm. Pierce County District Court [Washington] (PCDC)
- 1909 [Divorce] Decree in the case of Minnie Elizabeth Moore vs. J. B. Moore. June 23, 1909. Docket No. 28303. Journal 122, Dept. 4, Page 252. Pierce County District court, Tacoma, Washington. Microfilm.

Pierce, W.H.

- 1977 *Thirteen Years of Travel and Exploration in Alaska, 1877-1889*. Originally published in 1890. Alaska Northwest Publishing Co., Anchorage, Alaska.

Pogue, Dennis J.

- 1988 Anthrosols and the Analysis of Archaeological Sites in a Plowed Context: The King's Reach Site. *Northeast Historical Archaeology* 17: 1-15.

Pollard, Gordon

- 1993 *Bottles and Business in Plattsburgh, New York: 100 Years of Embossed Bottles as Historical Artifacts*. Clinton County Historical Association, Plattsburgh, New York.

Praetzelis, Adrian and Mary

- 1992 "Faces and Facades: Victorian Ideology in Early Sacramento," in *The Art and Mystery of Historical Archaeology, Essays in Honor of James Deetz*, pp. 75-99. Anne Elizabeth Yentsch and Mary C. Beaudry, eds. CRC Press, Boca Raton, Florida.

Putnam, H.E.

- 1965 *Bottle Identification*. Privately published, Jamestown, California.

Rector, Claudia

- 1996 Oral identification of feather made to D. Cooper, January 26.
- 1998 Notes made on macrobotanical and pollen analyses, September 24.

Rhodes, Diane Lee

- 1988 *Archeological Investigations in Skagway, Alaska, Volume 3: The Mill Creek Dump and the Peniel Mission, Klondike Gold Rush NHP*. U.S. Department of the Interior, National Park Service, Denver, Colorado.

## Sanborn Fire Insurance Company

- 1914 Fire insurance plat for Skagway. Copy on file, Klondike Gold Rush NHP, Skagway, Alaska.  
 1948 Fire insurance plat for Skagway. Copy on file, Klondike Gold Rush NHP, Skagway, Alaska.

## Schroeder, Joseph J. Jr., ed.

- 1971 *The Wonderful World of Toys, Games & Dolls: 1860-1930*. Follett Publishing Company, Chicago.

## Sears, Roebuck &amp; Co.

- 1905-  
 1930 *Sears, Roebuck and Co. Consumers Guide*. Catalogs for 1905-1930. Microfilm, on file, Klondike Gold Rush NHP, Skagway, Alaska.  
 1968 *Sears, Roebuck and Co. Consumers Guide, Catalogue No. 104, 1897*. Reprint of 1897 edition. Chelsea House Publishers, New York.  
 1969 *Sears, Roebuck and Co. Consumers Guide, Catalogue No. 117, 1908*. Reprint of 1908 edition. DBI Books, Northbrook, Illinois.  
 1993 *Sears, Roebuck and Co. Consumers Guide, Catalogue No. 111, 1902*. Reprint of 1902 edition. Gramercy Books, New York.

## Sherwood, Morgan B.

- 1992 *Exploration of Alaska, 1865-1900*. University of Alaska Press, Fairbanks.

## Shotridge, Florence

- 1913 The Life of a Chilkat Indian Girl. *The University of Pennsylvania Museum Journal* 4(3): 101-103.

## Shotridge, Louis

- 1913 House Posts and Screens and Their Heraldry. *The University of Pennsylvania Museum Journal* IV (3): 101-103.  
 1919a War Helmets and Clan Hats of the Tlingit Indians. *The University of Pennsylvania Museum Journal* X (1): 43-48.  
 1919b Keyt-Gooshe "Killer Whale's Dorsal Fin. *The University of Pennsylvania Museum Journal* X (4): 213-216.  
 1920 Ghost of Courageous Adventurer. *The University of Pennsylvania Museum Journal* XI (1): 11-26.  
 1921 Tlingit Woman's Root Basket. *The University of Pennsylvania Museum Journal* XII (3): 162-178.  
 1929 The Bride of Tongass: A Study of the Tlingit Marriage Ceremony. *The University of Pennsylvania Museum Journal* XX (2): 131-156.

## Sittig, Marshall

- 1991 *Handbook of Toxic and Hazardous Chemicals and Carcinogens*. Noyes Publications, Park Ridge, New Jersey.

## Skagway Deed Records [Alaska] (SDR)

- 1902 [Land] Patent from the United States to J. Bernard Moore. June 21, 1902. Deed Book 5:158-160.  
 1903a Deed from John Moore et ux. to Wm. Moore. April 9, 1903. Deed Book 5:445-447.  
 1903b Indenture between J. Bernard Moore and Minnie Moore [signed July 28, 1902]. May 21, 1903. Deed Book 5:467-469.  
 1904 Deed from J. B. Moore to Minnie E. Moore, et al. July 11, 1904. Deed Book 6: 234-235.  
 1914a Indenture between James Bernard Moore and Harriet S. Pullen. February 10, 1914. Deed Book 9:163.  
 1914b Deed from Minnie E. Roskamp, nee Minnie Moore, et al. to Hazel G. Kirmse. September 14, 1914. Deed Book 9:224.



- 1914c Indenture between J. Bernard Moore and H.S. Pullen [signed December 8, 1914]. February 2, 1915. Deed Book 9:246-247.
- 1987 Deed from Jack Kirmse to the National Park Service, Tract 101-42. July 20, 1987. New Deed Book 2: 569.

Southeast Native Subsistence Commission

- 1997 Place Names Project, Haines-Klukwan Database. On file at Sealaska Corporation, Juneau, Alaska.

Spray, Lafe E.

- 1911 "Skagway: Gem of Alaska." *Alaska-Yukon Magazine*, November 1911, pp. 219-221.

Spude, Catherine Holder; Douglas D. Scott; Frank Norris

- 1993 *Archeological Investigations in Skagway, Alaska, Volume 4: Father Turnell's Trash Pit*. U.S. Dept. of the Interior, National Park Service, Denver, Colorado.

Spude, Robert

- 1983 *Skagway, District of Alaska, 1884-1912: Building the Gateway to the Klondike*. Anthropology and Historic Preservation, Cooperative Park Studies Unit, Occasional Paper No. 36. University of Alaska, Fairbanks.

Stanley, Samuel

- 1958 *Historical Changes in Tlingit Social Structure*. Ph.D. dissertation, University of Chicago.

Stirn, Carl P.

- 1990 *Turn-of-the-Century Dolls, Toys and Games: The Complete Illustrated Carl P. Stirn Catalog from 1893*. Dover Publications, New York.

Strahler, Arthur N. and Alan H.

- 1979 *Elements of Physical Geography* (Second Edition). John Wiley & Sons, Inc., New York.

Swanton, John R.

- 1908 "Social Condition, Beliefs, and Linguistic Relationship of the Tlingit Indians." *26th Annual Report of the Bureau of American Ethnology: 1904-1905*. Government Printing Office, Washington, D.C.

*Tacoma Daily Ledger*

- 1907 Building News, May 19, page 17.

*Tacoma News Tribune* [In text, *TNT*]

- 1941 Church Schools, February 26, 1941.

Taylor, Smith & Taylor Co.

- n.d. *The China Book Showing the Princess Dinner Set and Specialties*. Taylor, Smith & Taylor Co., East Liverpool, Ohio.

*The Skagway News* [In text, *TSN*]

- 1999 Skagway Visitor Arrival Statistics, 1983-1998, March 12, 1999.

Thornton, Thomas F.

- 1998 "Introduction: Who Owned Southeast Alaska? Answers in Goldschmidt and Haas," in *Haa Aani, Our Land, Tlingit and Haida Land Rights and Use*, pp. xiii-xxii. Walter Goldshmidt and Theodore H. Haas, authors [1946]. University of Washington Press, Seattle.

Toulouse, Julian H.

- 1971 *Bottle Makers and their Marks*. Thomas Nelson, Inc., New York.

United States Bureau of the Census (USBC)

- 1900 *United States Manuscript Census*, District of Alaska. Microfilm, National Archives, Washington, D.C.
- 1910 *United States Manuscript Census*, District of Alaska. Microfilm, National Archives, Washington, D.C.
- 1920 *United States Manuscript Census*, District of Alaska. Microfilm, National Archives, Washington, D.C.

United States Patent Office

- 1889 Patent No. 415,067, November 12, p.1012. *Official Gazette of the United States Patent Office, October-December*. National Archives, Washington, D.C., on microfilm.
- 1903 Patent No. 730,500, June 9, p. 1510. *Official Gazette of the United States Patent Office, October-December*. National Archives, Washington, D.C., on microfilm.

Willard, Mrs. Eugene S.

- 1995 *Carrie M. Willard Among the Tlingits, The Letters of 1881-1883*. Mountain Meadow Press, Sitka, Alaska.

Wilson, Rex L.

- 1981 *Bottles on the Western Frontier*. University of Arizona Press, Tucson, Arizona.

Yehle, Lynn A., and Richard W. Lemke

- 1972 *Reconnaissance Engineering Geology of the Skagway Area, Alaska, with Emphasis on Evaluation of Earthquake and Other Geologic Hazards*. U.S. Dept. of the Interior, Geological Survey. Ms. on file at Klondike Gold Rush NHP, Skagway, Alaska.

Yukon Historical & Museums Association

- 1995 *The Kohklux Map*. Yukon Historical & Museums Association in association with Klukwan Village Council, Council for Yukon Indians, Yukon Archives and Aboriginal Language Services, Whitehorse, Yukon Territory, Canada.

Zumwalt, Betty

- 1980 *Ketchup, Pickles, Sauces - 19th Century Food in Glass*. Mark West Publishers, Fulton, California.



## APPENDIX 1 - Moore House Chronological Site History

Date	Event
?? - ≈10,000 BP <sup>1</sup>	Glacier ≈5,000' thick filled Skagway valley; evidence of earlier faunal/floral occupation removed.
≈10,000 BP - ≈3,000 BP	Glacier retreat; valley below sea level; surrounding steep slopes eroded into water leading to accretion of sediments.
≈3,000 BP - ≈??	Reestablishment of ground surface - isostatic rebound left rock-filled valley with braided streams Tidal areas gradually retreated southward.
?? - ≈1,200 BP	Reestablishment of fauna/flora in valley: fluvial deposition combined with rebound and accretion; streams became more channeled allowing some soil buildup In stream channels minerals like mica washed out; larger rocks present, but sand finer than glacial till sand.
≈1,200 BP	Reestablishment of fauna/flora in valley: eruption of the White River volcano, about 400-500 miles from Skagway, may have either deposited ash in the area, or changed weather patterns enough to create a thin layer of whitish, fine sand from aeolian deposition (deposition by wind action).
≈1,200 BP - ≈700 BP	Reestablishment of fauna/flora in valley: fluvial deposition - streams became more channeled; seasonal flooding washed out finely sorted sand/silt on which organic material reestablished itself until the next flooding episode.
≈700 BP-1887	Early human occupation/use of Skagway valley: seasonal use by Chilkoot Tlingit for hunting, fishing, and berry picking; possibly also used mountain pass trail for trading with Athaspascan groups from the Interior.
1887-1896	Moore log <b>cabin</b> built (16.75' x 15.25') with wood sills resting on wooden piers, seasonally occupied.
July 1888	Dug trench around cabin and banked up dirt around it.
June 1896	Log cabin floored.
1896 - July 1897	1 1/2 story frame <b>house</b> (16' x 14'), ≈2.5' south of cabin; open spaces for windows/door; stairway to upper floor along north wall of central room (shadow still visible).
July - Sept. 1897 (SE-32) <sup>2</sup>	Area between <b>cabin/house</b> enclosed; front of cabin possibly dismantled so it could be used as a room. Corral built on northeast side of cabin; wire fence enclosed Moore property <b>Privy #1</b> built east of cabin. <b>House:</b> windows and front door added.
Winter 1897 -1898 (unnumbered photo)	<b>House:</b> 6' long front porch and 14' x 17' single story room (kitchen) added on east side <b>Cabin:</b> ≈ 10' x 16' lean-to addition to east side (now is Shed #2).
April 29, 1898	Picket <b>fence</b> surrounded yard area directly east of house; enclosed privy #1

<sup>1</sup> "BP" refers to the number of years before the present (1998).

<sup>2</sup> Refers to numbered photos in KLGO research library.

Date	Event
(SO-16)	Fence directly northwest of privy juts out into a point over streambed (seen clearly in June 1898 photo). Large one story building east of fence enclosing east yard area.
June 1898 (SO-10)	One story shed ( <b>Shed #1</b> ) erected along fence in west yard <b>House:</b> 14' x 16.33' single story room (parlor) added on southwest side; house (but not trim) painted orange gold (oil-based) <b>Cabin:</b> one story shed, ca. 25 sq. ft., added to rear (north side) Picket <b>fence</b> enclosed space north of cabin between fenced east yard and shed in rear of cabin.
June 1899 (SO-89)	Picket <b>fence</b> on east side extended south along property line, dividing Moore land from large one story building adjacent to east yard.
July 10, 1899 (SO-102; MR-21)	Picket <b>fence</b> replaced wire fence on south and west sides of property; woodpile northwest of house (sometime before cabin moved).
January - May 1900 (SO-55)	<b>Cabin</b> moved west of house; cabin additions on north and east removed <b>House:</b> thin layer of white paint on siding; gray-blue or white lead paint on boards and trim. <b>Yard fence</b> along east side of house gone Cabin lean-to moved about 50' east to become shed with birdhouse on roof ( <b>Shed #2</b> ) <b>Privy #1</b> moved when lean-to moved east (assume moved to Privy #2. location) Rock-bordered walkway from house to 5th Avenue; fence-like structure in southeast yard. Pole next to <b>Shed #1</b> .
Summer 1900 (SO-98)	<b>House:</b> 1 1/2 story addition added to northeast side; new roof, hipped on west end; brick chimneys added <b>Privy #2</b> north of shed #2, and 32' east of shed #3.
Spring/summer 1901 (SO-9)	10' x 15' shed constructed directly east of house ( <b>shed #3</b> ). <b>House:</b> porch added on east side of house; metal flue on east end; room on northwest corner of house present; window on top of 1 1/2 front of house enlarged Picket <b>fence</b> along north property line, fence still retained point over streambed; wooden boardwalk replaced rock-lined walkway in front of house.
1902	<b>House:</b> yellow-green oil paint on siding and windowsills; window sash and frames painted mint-green.
1904 (MR-5)	<b>House:</b> Siding painted a pale blue; trim finish painted dark green <b>Landscaping:</b> trees planted, house trim painted, boardwalk added to front yard.
1904 -1907	Bernard Moore family leaves Skagway; house probably only occupied seasonally by Moores after 1904; 1906-1907 rental family in house; 1907-1910-unknown if vacant or occupied.
1910 -1977	Kirmse occupation of <b>house</b> (purchased in 1914): various remodeling episodes; unknown paint episodes; flower garden and fence in front of front porch; yard on east side of cabin used as flower garden; circular flower bed in front yard, close to street; gradual buildup of yard midden
1910 - 1917 (SO-45 & SO-124)	<b>Privy #3</b> on east wall of shed #3; swing in front yard; building in adjacent east property removed



Date	Event
≈1917	<b>House:</b> plumbing - construction of cesspool or other feature related to utilities north of house, 4" metal water pipe; brick fireplace, chimney, and new windows added to southwest parlor room; front porch made longer with more windows (present configuration); house painted white with green trim. <b>Fence:</b> Moore fence up in May 1914 in a straight line across rear of property; removed in September deed transfer Kirmse later erected a new, high, straight fence about three feet north of Moore's fence.
≈ 1940	<b>House:</b> foundation work - new piers and joists installed; entire perimeter of house excavated; two trenches dug under house Red asphalt siding installed.
19-- -1977	<b>Shed #1</b> removed (fire? deliberate destruction?) (could be pre-WW2).
1962	<b>House:</b> plumbing – bathroom and kitchen; probably added the 6" sewer pipe on east and north sides of house; picture window from NBA replaced sash window in southeast room.
1979 - present	<b>NPS - House:</b> wallpaper removed and interior fiberglass insulation installed (1980); exterior red asphalt siding removed, roofing replaced and chimneys rebuilt (1981); repainted house blue/gray Removed Kirmse flower garden fence from front of porch area Rehabilitated Moore <b>cabin</b> ; various archeological excavations; possible fill placed on west side of house in cabin area.
≈1985	NPS work: Styrofoam placed on top of 6" sewer pipe; electrical conduit installed north of house to cabin.



## APPENDIX 2 - Manufacturers' Marks

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
<b>CERAMICS</b>							
Alfred Meakin, Ltd.	Staffordshire, England	MENTONE/[WREATH]/ALF[RED] MEAK[IN]/ENGLA[ND]	Saucer	1897	1930	94-054 94-130	39066 39471
Alfred Meakin, Ltd.	Staffordshire, England	ROYAL IRONSTONE CHINA/[TM]/ALFRED MEAKIN, STAFFORDSHIRE, ENGLAND	Saucer, Teacup	1897	1990	94-116	39136
Bazzett Studio, P.C. China Co.	Seattle, Washington	BAZZETT STUDIO, P.C. CHINA CO., SEATTLE	Saucer, Teacup	1907	1956	95-061	35843
C. T. Maling & Sons	Northumberland, England	[INSIDE TRIANGLE] ..TM (VERTICALLY)/[Outside Triangle] ESTA [BD 17]62/ENGLAND	Pitcher	1891	1908	93-078	34376
English Registry Mark	England	IV (at top of diamond)/P/Rd (in middle of diamnd)/8 (at bottom of diamond)/T TE (below diamond)	Bowl, Soup	1851	1851	93-078	34366
Haviland & Co.	France	(1) Havil[and] (in red); (2) Havil[and] (in green)	Cup	1893	1930	94-047	39112
Haviland & Co.	France	HAVILAND & CO.	Saucer	1893	1930	93-032	130
Homer Laughlin	East Liverpool, Ohio	HOMER L[AUGHLIN]/ AMER[ICAN BEAUTY]	Saucer, Teacup	1907	1915	93-078	34370
Homer Laughlin	East Liverpool, Ohio	HL (Monogram)/Homer Laughlin/The Angelus	Saucer, Teacup	1909	1909	94-088	39130
Homer Laughlin	East Liverpool, Ohio	(Bird & upside down lion)/Homer Laughlin	Saucer, Teacup	1890	1900	93-119	35187
Johnson Bros.	Hanley, England	[TM=Crown]/JOHN[SON BROS]	Plate, Dessert	1887	1913	94-133	39477
Johnson Bros.	Hanley, England	[Small remnant of trademark green crown]	Plate/saucer	1900	1913	94-119	39194
Johnson Bros.	Hanley, England	[TM=Crown]/JOHNSON [BROS]/ ENGLA[ND]	Plate	1914	1975	95-046	35770
Johnson Bros.	Hanley, England	[TM=Crown]/JOHNSON BROS/ENGLAND	Saucer, Teacup	1891	1913	93-122	35371

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
Johnson Bros.	Hanley, England	[TM=Crown]/[JOH]NSO[N BROS]/ ENGL[AND]/PATD APRIL 15 [????]	Bowl, Finger or Berry	1903	1913	94-054	39068
Johnson Bros.	Hanley, England	[TM=Crown]/[JOH]NSON BROS/ [ENGLA]ND	Plate/saucer	1914	1975	94-052	39065
Karlsbad	Bohemia, Czechoslovakia	[TM=Double-Headed Eagle]/KARLSBAD	Saucer, Teacup			93-076	35289
Knowles, Taylor & Knowles	East Liverpool, Ohio	WARRANTED/[TM=Eagle in Crest]/ [K].T. & K./GRANITE	Chamberpot	1890	1907	94-063	37543
Knowles, Taylor & Knowles	East Liverpool, Ohio	[TM=Eagle in Crest]/VITREOUS PORC[ELAIN]/K.T. & K. CO./425	Plate/saucer	1905	1905	94-037	39099
Limoges	France	S&L/France	Saucer, Teacup	1892	1930	94-068	39085
Philip Rosenthal & Co.	Bavaria, Germany	(Script):Rosen\/(w/Crown in middle of marks) thale (w/underline under word)	Saucer, Teacup	1907	1956	95-061	35843
Plainemaison	France	LIMOGES/***/FRANCE	Plate, Dessert	1890	1910	93-078	34369
Sarrequemes	Germany	[Wreath]/Made in Germany/(outside stamped mark): Sarreguemies	Bowl, Shallow Redware	1893	1975	93-078	34365
Spode	Staffordshire, England	(Script): S[P]ODE	Doll	1822	1933	94-015 94-016	39090 39091
Unknown	Unknown	(In Banner): LUR..EVILLE	Hollowware, Decorative (Ashtray?)			93-078	34378
W.H. Grindley & Co.	Tunstall, England	(Inside Wreath):ENGLAND/ W.H. GRINDLEY & CO.	Bowl	1914	1925	94-061	39084
W.H. Grindley & Co.	Tunstall, England	(Inside Wreath):ENGLAND/ W.H. GRINDLEY & CO.	Plate	1914	1925	95-004	35459
W.S. George	Canonsburg, Pa	LIDO../S.	Saucer	1932	1959	94-129	39337

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
<b>GLASS</b>							
American Bottle Co./ Emerson Drug Co.	Baltimore, Md	BASE: 1262/12; HEEL: AB CO. BOTTLE: BROMO-SELTZER/EMERSON DRUG CO./ BALTIMORE, MD.	Bottle, Medicine	1888	1906	94-071	37439
American Bottle Co./ Emerson Drug Co.	Baltimore, Md	BASE: 1261/17; HEEL: A B CO; BOTTLE: BROMO-SELTZER/EMERSON DRUG CO./ BALTIMORE, MD.	Bottle, Medicine	1888	1906	94-071 94-072	37440 37573
American Bottle Co./ Emerson Drug Co.	Baltimore, Md	BASE: 1261/35;HEEL: A B CO BOTTLE: BROMO-SELTZER/EMERSON/DRUG CO./ BALTIMORE, MD.	Bottle, Medicine	1888	1906	94-072	37573
Ball Bros. Co.	Muncie, Indiana	[GENUIN]E BOYD	Lid Liner, Preserving Jar	1916	1975	94-130	39395
Berney-Bond Glass Co.	Bradford, Clarion, Hazelhurst, Pa	BBGCo	Bottle, Liquor	1905	1918	94-133	39491
Berney-Bond Glass Co.	Bradford, Clarion, Hazelhurst, Pa	BBG Co/324	Bottle, Liquor	1905	1918	93-118	35165
Brockway Machine Bottle Co.?	Brockway, Pa	BASE: B	Bottle, Liquor	1907	1933	93-078	34382
Brockway Machine Bottle Co.?	Brockway, Pa	BASE: B/16	Flask	1907	1918	94-048	37884
Buck Glass Co.	Baltimore, Md	HEEL: 28 BASE: B	Bottle	1909	1918	94-061	37525
Cannington Shaw & Co.	St. Helens, England	C.S. & Co. LTD.	Bottle, Sauce			93-078	34385
Crown Perfumery Co.	London, England	THE CROWN/PERFUMERY/COMPANY/ LONDON	Bottle, Perfume	1872	1929	93-031	33345
Curtice Brothers Co.	Rochester, N.Y.	BODY: CURTICE BROTHERS CO/ PRESERVERS/ROCHESTER NY CAP: PATENTED SEPT 25TH AP	Bottle, Condiment	1888	1929	93-078	34381



Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
Edgar F. Breffit & Co.	Ryebread Hill, York, England	E.B. & Co. LD/8774	Bottle, Liquor	1880	1913	93-043	34767
Frank E. Reed & Co.	New York, N.Y.	BASE: F.E.R. & CO.	Bottle, Medicine	1898	1898	94-066 94-066 94-067	37393 37394 37408
Frank E. Reed & Co.	New York, N.Y.	BASE: F.E.R. & CO.	Bottle, Medicine	1898	1929	93-032	33451
Gill Bros.	Steubenville, Ohio	BASE: [HORSESHOE (half present)]	Tumbler	1908	1908	93-118	35167
Illinois Glass Co.	Oakland, Calif	BASE: I [in DIAMOND] [in O]	Bottle, Soda	1929	1956	93-022	34001
Illinois Glass Co.	Alton, Ill	BASE: I [in DIAMOND]	Bottle, Medicine	1920	1929	94-037	37727
Illinois Glass Co.	Alton, Ill	BASE: I [in DIAMOND]	Bottle, Medicine	1916	1929	94-065	37375
Lea & Perrins	Worcester, England	WORCESTERSHIRE SAUCE//LEA & PERRINS; BASE: J 15 D/S	Bottle & Stopper	1877	1920	93-122	35339
Northwest Glass Co.	Seattle, Washington	523/NW 44/5	Bottle, Beer	1944	1944	93-118	35106
Obear-Nestor Glass Co.	East St. Louis, Ill	[LISTER]INE	Bottle, Mouthwash	1894	1918	93-118	35150
Owens-Illinois Glass Co.	Oakland, Calif.	BASE: 2/[DIAMOND W/OVAL IN MIDDLE]/..	Container	1929	1956	93-057A	33596
Owens-Illinois Glass Co.	Toledo, Ohio	I (in an O)/D-9/M-1652/AJ6	Bottle, Vodka	1954	1992	93-117	35085
Paul Westphal	New York, N.Y.	Paul Westphal/Auxiliator/For The Hair/ New York	Bottle, Hair Tonic	1875	1918	93-125	35204
Unknown	Unknown	BASE: R [IN TRIANGLE]/X; HEEL: 8//34	Bottle, Soda			94-108	36467
Unknown	Unknown	BASE: I	Container	1887	1918	93-050	37462
Unknown	Unknown	M [in a Diamond]	Bottle, Medicine		1918	93-122	35335

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
Whitall Tatum Co.	New York, N.Y.	BASE: WT ...	Bottle, Medicine	1887	1918	94-125	38511
Whitall Tatum Co.	New York, N.Y.	BASE: WT CO/USA	Vial, Poison	1902	1912	93-024	34107
<b>PATENTS</b>							
A. Fargo, Assigned to C. Tremain; Brunt?	Poughkeepsie, N.Y./ East Liverpool, Ohio	BRUNT/PAT/FEB/1920	Insulator (Porcelain Split Knob)	1920	1930	94-085	36636
Boston Garter Co.	Boston, Mass	VELVET GRIP/BOSTON GARTER/ PAT 12-18-00	Garter	1900	1914	93-118	35138
Charles W. Stinson	New York, N.Y.	LINDSEY/PAT JULY 2, 95/FELT FINISH/ AUGUST 9, 98	Garter Supporter	1898	1912	93-121	35267
Christina J. Haley	New York, N.Y.	PAT. JUNE 23, 1885	Hose Sleeve/ Garment Supporter	1885	1899	93-121 93-127	35274 35299
Gorham Manufacturing Co.	Providence, Rhode Island	PAT 1908 GORHAM [ANCHOR] ELECTRO PLATE	Spoon	1908	1922	94-065	39555
Johann F.E.W. Schmidt	Dresden, Germany	[NO]V. 12 1889	Lamp, Kerosene	1889	1903	94-119	39550
<b>MUNITIONS</b>							
Peters Cartridge Co.	Kings Mill, Ohio	P	Cartridge, Rim-fire	1895	1946	93-026	34197
Peters Cartridge Co.	Kings Mill, Ohio	PETERS/30/USG	Cartridge, Center-fire	1922	1930	94-077	38714
Union Metallic Cartridge Co./ Remington Arms	Bridgeport, Ct	No/U.M.C. Co./12/ARROW	Shotgun Shell	1905	1915	94-049	37465

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
Union Metallic Cartridge Co./ Remington Arms.	Bridgeport, Ct	U.M.C./38 S&W.	Cartridge, Center-fire	1890	1911	93-016	33896
Union Metallic Cartridge Co./ Remington Arms	Bridgeport, Ct	U.M.C./41 SHORT	Cartridge, Center-fire	1867	1911	93-018	34059
Union Metallic Cartridge Co./ Remington Arms	Bridgeport, Ct	U.M.C./44 COLT	Cartridge, Center-fire	1869	1911	94-088	36528
Union Metallic Cartridge Co./ Remington Arms	Bridgeport, Ct	U	Cartridge, Rim-fire	1885	1983	93-014 93-017 93-018 94-057 94-068A 94-103	34630 33960 34059 37211 37560 36513
United States Cartridge Co.	Lowell, Mass	US	Cartridge, Rim-fire	1869	1936	94-076 94-081	38668 36609
Winchester Repeating Arms Co.	New Haven, Ct	H	Cartridge, Rim-fire	1859	1975	93-017 93-018 93-022 94-049 94-060 94-074 94-075 94-076 94-081 94-086 94-133A	33961 34058 34004 37466 37503 38611 38689 38669 36608 36659 39543
Winchester Repeating Arms Co.	New Haven, Ct	W..[.R.A.CO./32 S&W]	Cartridge, Rim-fire	1878	1944	94-023	35514
Winchester Repeating Arms Co.	New Haven, Ct	W.R.A. Co./38-55/W.H.V.	Cartridge, Center-fire	1900	1922	94-037	38001

Manufacturer	Location	Mark	Object Name	Beginning Date	Ending Date	Lot #	Art #
Winchester Repeating Arms Co.	New Haven, Ct	WRA Co/38-55	Cartridge, Center-fire	1895	1922	94-053	37478
<b>MISCELLANEOUS</b>							
Alaska Nome Railway	Nome, Alaska	ALASK[A]/NOME/RAILWAY	Token	1900	1910	93-002	34651
Boston Rubber Shoe Co.	Boston, Mass	(IN RING)BOSTON RUBBER SHOE CO./ (INSIDE)BOSTON U.S.A.	Boot	1897	1897	94-085	36652
Dickinson Hard Rubber Co.	Springfield, Mass	D.H.R. Co./1875	Button	1875	Unk.	93-058	33605
E. McIlhenny Co.	New Iberia, La	E. McILHENNY/NEW IBERIA, LA	Cap, Tabasco Bottle	1882	1909	93-043	34800
Ideal (Toy Co.?)	New Jersey	Ideal (Script in a circle)/MADE IN U.S.A./2	Cap, Plastic Bottle	1940	1992	93-117	35092
Lemon Hart	England	LEMON HART/EST/1804/RUM	Cap, Rum Bottle	1912	1960	93-017	33955
Rogers Bros.	Hartford, Ct	1847 ROGERS BROS. A1 [A STAR]	Tablespoon	1895	1905	94-119	39562
Unknown	Morgan, England	BATTERSEA/ROUND/F/MORGAN/ ENGLAND	Crucible	1852	1910	93-112	34447
Wm. A. Rogers Ltd.	Niagra Falls, N.Y.; North Hampton, Mass	OXFORD SILVER PLATED CO.	Tablespoon	1894	1929	93-031	33343
Yalestowne Manufacturing Co.	Stamford, Conn	YALES TOWNE MFG. C[O.]// [ST]AMFORD, CONN U.S.A.	Hasp, Bicycle Lock	1902	1902	93-005	34703





## APPENDIX 3 - Structural Artifact Summary

Deposit	001	002	003	004	005	999	Totals	Total s (%)
<b>Fragments:</b>								
1985 Dist	111	276	5	130	9	0	531	6%
Post-1940	477	701	50	417	25	6	1676	18%
1940 Trench	532	620	23	458	6	0	1639	18%
Pre-1940 Trench	18	8	0	4	0	0	30	0%
Pre-1940	207	315	11	195	8	0	736	8%
Kirmse dump	236	524	22	41	3	8	834	9%
Kirmse dump #2	46	233	5	66	11	2	363	4%
Kirmse privy	118	798	24	114	15	7	1076	12%
Moore dump	66	610	11	48	1	1	737	8%
Moore privy	5	7	0	73	0	0	85	1%
Moore	4	54	4	17	1	0	80	1%
Shed 1	170	439	40	17	19	2	687	8%
Southwest Yard	63	154	2	195	6	0	420	5%
Boardwalk	51	142	8	47	2	0	250	3%
<b>Totals</b>	2104	4881	205	1822	106	26	9144	
<b>Totals (%)</b>	23%	53%	2%	20%	1%	0%		
<b>MNI:</b>								
1985 Dist	73	271	5	48	6	0	403	7%
Post-1940	96	700	49	90	22	5	962	16%
1940 Trench	96	616	22	62	5	0	801	13%
Pre-1940 Trench	11	8	0	3	0	0	22	0%
Pre-1940	62	300	11	44	6	0	423	7%
Kirmse dump	69	522	22	17	3	3	636	11%

<b>Deposit</b>	<b>001</b>	<b>002</b>	<b>003</b>	<b>004</b>	<b>005</b>	<b>999</b>	<b>Totals</b>	<b>Total s (%)</b>
Kirmse dump #2	30	226	5	31	7	1	300	5%
Kirmse privy	69	761	23	72	5	2	932	15%
Moore dump	26	590	8	31	1	1	657	11%
Moore privy	3	7	0	29	0	0	39	1%
Moore	4	54	4	7	1	0	70	1%
Shed 1	71	432	39	13	8	1	564	9%
Southwest Yard	11	8	0	3	2	0	24	0%
Boardwalk	19	141	7	17	2	0	186	3%
<b><i>Totals</i></b>	640	4636	195	467	68	13	6019	
<b><i>Totals (%)</i></b>	11%	77%	3%	8%	1%	0%		

## APPENDIX 4 - Food-Related Artifacts, by Fragment Count

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>FOOD STORAGE:</b>																
Can, sanitary	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Can, fish	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0%
Can, other cyl	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	0%
Frag, hole-in-cap	0	5	0	0	0	69	0	151	7	19	23	0	0	0	274	9%
Frag, sanitary	0	0	0	0	0	47	27	0	0	0	0	0	0	0	74	2%
Frag, fish	0	0	0	0	0	36	0	15	0	0	1	9	0	0	61	2%
Frag, other cyl	0	5	0	0	2	243	26	59	13	0	1	1	0	0	350	11%
Frag, oblong	0	0	0	0	0	4	0	0	7	0	0	26	0	0	37	1%
Frag, unidentified	0	0	0	0	0	2000	0	15	3	0	0	0	0	0	2018	63%
Roll key opener	1	0	0	0	1	1	0	1	2	0	1	0	0	0	7	0%
Wrapper, foil	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0%
Wrapper, cellophane	7	10	1	0	0	0	0	0	0	0	0	0	0	1	19	1%
Wrapper, plastic	2	18	0	0	0	0	0	0	0	0	0	0	0	0	20	1%
Handle, wire	0	0	1	0	0	2	0	0	0	0	0	0	0	0	3	0%
Crockery, storage	2	7	0	0	1	32	0	1	0	0	0	1	5	0	49	2%
Crockery, jar- whole	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Crockery, jar-frag	0	0	0	0	0	121	0	0	29	0	0	2	0	0	152	5%
Jar, glass	2	6	0	2	6	0	0	1	0	50	0	34	0	0	101	3%
Jar, lid/liner	0	0	0	0	0	3	0	1	2	0	0	1	0	0	7	0%
Gasket, rubber	0	0	0	0	0	3	0	3	0	0	0	0	0	0	6	0%

A 4-2

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Stopper, cork	0	0	0	0	0	3	0	1	0	0	0	0	0	0	4	0%
<b>TOTALS</b>	15	52	2	2	10	2564	53	249	65	69	27	77	5	1	3191	
<b>TOTALS (%)</b>	0%	2%	0%	0%	0%	80%	2%	8%	2%	2%	1%	2%	0%	0%		
<b>FOOD PREPARATION:</b>																
Crockery, bowl	0	0	1	0	0	2	0	0	1	0	0	23	0	0	27	34%
Barrel, mustard	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1%
Bottle, catsup	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Bottle, condiment	0	0	2	0	2	26	0	0	1	0	1	1	0	0	33	41%
Bottle, sauce, stopper	0	0	0	0	1	1	0	0	1	0	0	0	0	0	3	4%
Cap, bottle	0	3	1	0	2	1	0	0	0	0	0	1	0	0	8	10%
Jar, condiment lid	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%
Coffeepot, filter	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1%
Cutter, cheese	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Pan, baking	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%
Pot	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	4%
<b>Totals</b>	0	4	4	0	5	31	0	1	3	1	1	30	0	0	80	
<b>Totals (%)</b>	0%	5%	5%	0%	6%	39%	0%	1%	4%	1%	1%	38%	0%	0%		
<b>Food Serving:</b>																
<i>Whiteware, undecorated</i>																
Bowl, base	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1%
Bowl, rim	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Bowl, body	3	0	0	0	0	18	1	8	0	0	0	0	8	0	38	19%
Bowl, srvg., base	0	0	0	0	0	0	0	45	0	0	0	0	0	0	45	23%
Cup, base	1	0	0	1	0	0	1	0	0	0	0	0	0	0	3	2%
Cup, rim	0	0	0	0	1	1	0	0	1	0	0	0	0	0	3	2%
Cup, gilt rim	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Cup, handle	0	2	0	0	0	2	0	0	0	0	0	0	0	0	4	2%
Plate, base	1	0	0	0	0	5	0	1	0	0	0	0	0	0	7	4%
Plate, rim	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	3%
Plate, gilt rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%
Plate, body	0	1	0	0	1	22	0	0	0	0	0	0	0	0	24	12%
Plate/saucer, base	0	0	1	0	0	0	2	1	0	0	0	1	0	0	5	3%
Plate/saucer, rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%
Plate/saucer, body	0	4	0	0	0	2	0	0	3	0	0	0	0	0	9	5%
Dish, base	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	2%
Dish, rim	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	1%
Dish, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Dish, body	6	5	0	0	5	5	0	1	2	0	0	0	16	0	40	20%
<b>Subtotals</b>	15	14	2	1	7	62	4	56	6	0	0	3	26	0	196	
<b>Subtotals (%)</b>	8%	7%	1%	1%	4%	32%	2%	29%	3%	0%	0%	2%	13%	0%		<b>16.8%<sup>1</sup></b>
<b>Whiteware, molded</b>																
Lid, Tureen	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	2%

<sup>1</sup>

Percentage shown for each ceramic category is percentage of total ceramic sherds recovered.



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Bowl, rim	0	2	0	0	0	0	0	2	0	0	0	0	0	0	4	2%
Cup, rim	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0%
Plate, complete	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Plate, base	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	1%
Plate, rim	0	0	0	0	0	10	0	3	0	0	0	2	0	0	15	7%
Plate, gilt rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Plate, body	0	0	0	1	0	14	0	98	0	0	0	0	0	0	113	55%
Saucer, base	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1%
Saucer, rim	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0%
Saucer, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
Saucer, body	0	0	0	0	0	17	0	0	0	0	0	0	0	0	17	8%
Plate/saucer, base	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1%
Plate/saucer, rim	0	2	0	0	0	1	0	2	1	0	0	1	0	0	7	3%
Plate/saucer, body	0	2	0	0	14	7	0	0	0	0	0	4	0	0	27	13%
Dish, rim	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1%
Dish, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
Dish, body	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1%
<b>Subtotals</b>	0	8	0	1	14	57	0	107	2	0	0	14	1	0	204	
<b>Subtotals (%)</b>	0%	4%	0%	0%	7%	28%	0%	52%	1%	0%	0%	7%	0%	0%		<b>17.4%</b>
<b>Whiteware, painted/ transferprint</b>																
Pitcher, body	0	2	0	0	1	197	0	0	1	0	0	2	0	0	203	69%
Bowl, gilt base	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0%
Bowl, body	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Cup, whole	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0%
Plate, base	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1%
Plate, rim	0	0	0	0	0	3	0	0	1	0	0	0	1	0	5	2%
Plate, gilt rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Plate, body	0	0	0	0	0	2	0	0	0	0	0	0	8	0	10	3%
Saucer, base	0	0	0	0	0	3	1	0	1	0	0	1	0	0	6	2%
Saucer, rim	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	1%
Saucer, gilt rim	0	0	0	0	0	2	0	0	0	0	0	1	0	0	3	1%
Saucer, body	0	0	0	0	0	14	4	0	2	0	0	14	0	0	34	12%
Saucer, nappy complete	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1%
Saucer, nappy(rim)	0	0	0	0	0	4	0	2	0	0	0	0	0	0	6	2%
Plate/saucer, rim	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1%
Plate/saucer, body	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	1%
Dish, body	0	1	0	0	0	3	0	0	0	0	0	4	1	0	9	3%
<b>Subtotals</b>	0	4	0	0	1	231	9	2	7	0	0	29	11	0	294	
<b>Subtotals (%)</b>	0%	1%	0%	0%	0%	79%	3%	1%	2%	0%	0%	10%	4%	0%		<b>25.1%</b>
<b>Whiteware, decalcomania</b>																
Bowl, rim	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2%
Cup, base	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Cup, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Cup, body	0	0	0	0	0	30	0	0	1	0	0	0	0	0	31	27%
Cup, handle	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Hollowware, base	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2%
Hollowware, body	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4%
Plate, base	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	2%
Plate, rim	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1%
Plate, gilt rim	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1%
Plate, body	0	0	0	0	0	0	0	8	0	0	0	0	16	0	24	21%
Saucer, complete	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	2%
Saucer, base	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Saucer, rim	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Saucer, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Saucer, body	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13	12%
Saucer, nappy, rim	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	2%
Plate/saucer, rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%
Plate/saucer, gilt rim	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1%
Plate/saucer, body	0	0	0	0	0	0	0	8	0	0	0	8	0	0	16	14%
Dish, body	0	1	1	0	0	3	0	0	0	0	0	0	0	0	5	4%
<b>Subtotals</b>	0	16	1	0	0	37	0	21	2	0	0	18	18	0	113	
<b>Subtotals (%)</b>	0%	14%	1%	0%	0%	33%	0%	19%	2%	0%	0%	16%	16%	0%		<b>9.7%</b>
<b>SUBTOTALS - WHITEWARE</b>																
Undecorated	15	14	2	1	7	62	4	56	6	0	0	3	26	0	196	24%
Molded	0	8	0	1	14	57	0	107	2	0	0	14	1	0	204	25%
Painted/TP	0	4	0	0	1	231	9	2	7	0	0	29	11	0	294	36%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Decalcomania	0	16	1	0	0	37	0	21	2	0	0	18	18	0	113	14%
<b>SUBTOTALS</b>	15	42	3	2	22	387	13	186	17	0	0	64	56	0	807	
<b>SUBTOTALS (%)</b>	2%	5%	0%	0%	3%	48%	2%	23%	2%	0%	0%	8%	7%	0%		<b>69%</b>
<b><i>Ironstne/Grntewre, Undecorated</i></b>																
Bowl, rim	0	0	0	0	0	5	0	0	0	0	0	0	1	0	6	5%
Bowl, body	0	0	1	0	0	12	3	4	4	0	0	0	0	0	24	20%
Cup, base	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1%
Cup, rim	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	2%
Cup, body	0	0	0	0	7	0	0	0	0	0	0	2	0	0	9	7%
Hollowware, rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Hollowware, body	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	2%
Plate, rim	1	4	0	0	1	0	0	0	0	0	0	0	0	0	5	4%
Plate, body	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	4%
Saucer, base	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3	2%
Saucer, rim	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Saucer, gilt rim	0	0	1	0	0	2	0	0	0	0	0	0	0	0	3	2%
Plate/saucer, base	0	4	0	0	0	1	0	1	0	0	0	0	0	0	6	5%
Plate/saucer, rim	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	2%
Plate/saucer, body	0	2	0	0	0	8	0	10	0	0	0	0	0	0	20	16%
Dish, base	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	2%
Dish, body	0	5	3	0	0	18	0	2	1	0	0	0	1	0	30	24%
<b>Subtotals</b>	1	22	5	0	12	50	3	20	5	0	0	3	2	0	123	
<b>Subtotals (%)</b>	1%	18%	4%	0%	10%	41%	2%	16%	4%	0%	0%	2%	2%	0%		<b>10.5%</b>

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<i>Ironstne/Grntewre, Molded</i>																
Bowl, complete	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
Bowl, base	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	17%
Bowl, rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4%
Cup, rim	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	13%
Cup, body	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4%
Saucer, rim	0	1	0	0	0	0	0	0	0	0	0	3	0	0	4	17%
Saucer, gilt rim	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	17%
Plate/saucer, rim	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4%
Platter, base	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	13%
Platter, body	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4%
<i>Subtotals</i>	0	1	0	0	0	5	0	8	4	0	0	4	1	0	23	
<i>Subtotals (%)</i>	0%	4%	0%	0%	0%	22%	0%	35%	17%	0%	0%	17%	4%	0%		<b>2.0%</b>
<i>Ironstne/Grntewre, Painted/Transfrprnt</i>																
Dish, pickle, gilt	0	0	0	0	0	0	0	24	0	0	0	0	0	0	24	46%
Lid, Tureen, body/handle	0	0	0	0	0	26	0	0	0	0	0	0	0	0	26	50%
Saucer, complete	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2%
Plate/saucer, body	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2%
<i>Subtotals</i>	0	0	1	0	0	26	0	24	1	0	0	0	0	0	52	
<i>Subtotals (%)</i>	0%	0%	2%	0%	0%	50%	0%	46%	2%	0%	0%	0%	0%	0%		<b>4.4%</b>
<i>Ironstne/Grntewre, Decalcomania</i>																
Cup, whole, gilt rim	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Saucer, base	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6%
Saucer, rim	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	12%
Plate/saucer, base	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	12%
Plate/saucr,gilt rim	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6%
Plate/saucer, body	0	2	0	0	0	5	0	0	0	0	0	0	0	0	7	41%
Dish, body	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	18%
<b>Subtotals</b>	0	4	3	0	0	7	0	1	2	0	0	0	0	0	17	
<b>Subtotals (%)</b>	0%	24%	18%	0%	0%	41%	0%	6%	12%	0%	0%	0%	0%	0%		<b>1.5%</b>
<b>SUBTOTALS –IRONSTONE/ GRANITEWARE</b>																
Undecorated	1	22	5	0	12	50	3	20	5	0	0	3	2	0	123	57%
Molded	0	1	0	0	0	5	0	8	4	0	0	4	1	0	23	11%
Painted/TP	0	0	1	0	0	26	0	24	1	0	0	0	0	0	52	24%
Decalcomania	0	4	3	0	0	7	0	1	2	0	0	0	0	0	17	8%
<b>SUBTOTALS</b>	1	27	9	0	12	88	3	53	12	0	0	7	3	0	215	
<b>SUBTOTALS (%)</b>	0%	13%	4%	0%	6%	41%	1%	25%	6%	0%	0%	3%	1%	0%		<b>18%</b>
<i>Porcelain, Undecor.</i>																
Bowl, gilt rim	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3%
Bowl, body	0	1	0	0	1	0	0	0	0	0	0	0	6	0	8	21%
Cup, rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Cup, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Cup, body	0	0	0	0	0	2	0	0	1	0	0	1	0	0	4	10%
Cup, handle	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Hollowware, body	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	5%
Plate, complete <sup>2</sup>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Plate, base	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	10%
Plate, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Saucer, base	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3%
Saucer, rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Saucer, gilt rim	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	8%
Saucer, body	0	0	0	0	0	1	0	0	0	5	0	0	0	0	6	15%
Saucer, butter	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3%
Dish, rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Dish, body	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	5%
<b>Subtotals</b>	0	6	0	0	2	10	0	1	2	8	0	2	8	0	39	
<b>Subtotals (%)</b>	0%	15%	0%	0%	5%	26%	0%	3%	5%	21%	0%	5%	21%	0%		<b>3.3%</b>
<b>Porcelain, Molded</b>																
Lid, spec. dish	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	24%
Cup, handle	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	6%
Saucer, base	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6%
Saucer, rim	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	12%
Saucer, gilt rim	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3	18%
Saucer, body	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	24%
Saucer, nappy,	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6%

2

Although undecorated, the plate was glazed pink on its outer band and had a gilt-edged rim.

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
base/rim																
Dish, body	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	6%
<i>Subtotals</i>	0	2	0	0	1	13	1	0	0	0	0	0	0	0	17	
<i>Subtotals (%)</i>	0%	12%	0%	0%	6%	76%	6%	0%	0%	0%	0%	0%	0%	0%		<b>1.5%</b>
<i>Porcelain, Painted/Trnsfrprnt</i>																
Bowl, body	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1%
Cup, base	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Cup, rim	0	2	0	0	0	2	0	0	0	0	0	0	0	0	4	6%
Cup, gilt rim	0	1	0	0	0	4	1	0	0	0	0	2	0	0	8	12%
Cup, body	0	2	0	0	0	0	3	0	0	0	0	0	0	0	5	7%
Plate, base	0	0	0	0	0	3	0	1	0	0	0	0	0	0	4	6%
Plate, rim	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	3%
Plate, gilt rim	0	0	0	0	0	3	0	1	0	0	0	1	0	0	5	7%
Saucer, complete	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3%
Saucer, base	0	2	0	0	0	2	0	0	0	0	0	0	0	0	4	6%
Saucer, rim	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	3%
Saucer, gilt rim	0	2	0	0	0	7	0	1	1	0	0	1	1	0	13	19%
Saucer, body	0	3	0	0	0	2	0	0	1	0	0	1	0	0	7	10%
Dish, base	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Dish, rim	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Dish, gilt rim	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1%
Dish, body	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3	4%
Dish, pickle rim	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Dish, spec, base	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1%
Dish, spec, body	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	3%
<b>Subtotals</b>	0	17	0	0	1	30	4	3	5	0	0	7	1	0	68	
<b>Subtotals (%)</b>	0%	25%	0%	0%	1%	44%	6%	4%	7%	0%	0%	10%	1%	0%		<b>5.8%</b>
<b>Porcelain, Decalcomania</b>																
Cup, rim	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	13%
Cup, body	0	0	0	0	0	6	0	0	0	0	0	0	0	0	6	26%
Saucer, complte gilt rim	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4%
Saucer, base	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4%
Saucer, rim	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	9%
Saucer, gilt rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
Saucer, body	0	2	0	0	0	4	0	0	0	0	0	0	3	0	9	39%
<b>Subtotals</b>	0	5	0	0	0	14	0	1	0	0	0	0	3	0	23	
<b>Subtotals (%)</b>	0%	22%	0%	0%	0%	61%	0%	4%	0%	0%	0%	0%	13%	0%		<b>2.0%</b>
<b>SUBTOTALS - PORCELAIN</b>																
Undecorated	0	6	0	0	2	10	0	1	2	8	0	2	8	0	39	27%
Molded	0	2	0	0	1	13	1	0	0	0	0	0	0	0	17	12%
Painted/TP	0	17	0	0	1	30	4	3	5	0	0	7	1	0	68	46%
Decalcomania	0	5	0	0	0	14	0	1	0	0	0	0	3	0	23	16%
<b>SUBTOTALS</b>	0	30	0	0	4	67	5	5	7	8	0	9	12	0	147	
<b>SUBTOTALS (%)</b>	0%	20%	0%	0%	3%	46%	3%	3%	5%	5%	0%	6%	8%	0%		<b>13%</b>
<b>Stoneware, Painted</b>																

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Ladle handle, pantd	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.1%
<b>TOTAL CERAMIC SERVING WARE</b>																
Whiteware	15	42	3	2	22	387	13	186	17	0	0	64	56	0	807	69%
Ironstone/Grntwre	1	27	9	0	12	88	3	53	12	0	0	7	3	0	215	18%
Porcelain	0	30	0	0	4	67	5	5	7	8	0	9	12	0	147	13%
Stoneware	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
<b>SUBTOTALS</b>	16	99	12	2	38	543	21	244	36	8	0	80	71	0	1,170	
<b>SUBTOTALS (%)</b>	1%	8%	1%	0%	3%	46%	2%	21%	3%	1%	0%	7%	6%	0%		
<i>OTHER FOOD SERVING:</i>																
Enamelware, cup	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Styrofoam, cup	0	12	0	0	0	0	0	0	0	0	0	0	0	0	12	
Styrofoam, bowl	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
<i>Subtotals</i>	3	12	0	0	0	0	0	0	0	0	0	1	0	0	16	
<i>Subtotals (%)</i>	19%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%		
<i>Glassware:</i>																
Plate, rim	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
Plate, body	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3%
Saucer, rim	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1%
Dish, serving, body	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	8%
Cup, handle	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1%
Glass, drnking, base	0	1	0	0	0	1	0	0	2	0	0	2	0	0	6	8%
Glass, drnking, rim	1	0	4	0	4	13	1	0	0	0	0	1	0	0	24	31%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Glass, drnking, decorative (gilt/pntd)	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1%
Glass, drnking, body	0	6	8	0	3	2	1	0	1	0	0	0	1	0	23	29%
Glass, stemmed	0	1	0	0	0	12	0	0	0	0	0	1	0	0	13	17%
<i>Subtotals</i>	2	14	12	0	7	31	2	2	3	0	0	5	0	0	78	
<i>Subtotals (%)</i>	3%	18%	15%	0%	9%	40%	3%	3%	4%	0%	0%	6%	0%	0%		
<i>Flatware:</i>																
Fork	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	8%
Teaspoon	4	0	0	0	0	0	1	1	0	0	0	0	0	0	6	46%
Tablespoon	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4	31%
Knife, table	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	8%
Knife, carving, walrus tusk	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	8%
<i>Subtotals</i>	4	0	0	0	0	0	2	4	2	0	0	1	0	0	13	
<i>Subtotals (%)</i>	24%	0%	0%	0%	0%	0%	12%	24%	12%	0%	0%	6%	0%	0%		
<b>TOTAL FOOD SERVING:</b>																
Whiteware	15	42	3	2	22	387	13	186	17	0	0	64	56	0	807	63%
Ironstone/Grntware	1	27	9	0	12	88	3	53	12	0	0	7	3	0	215	17%
Porcelain	0	30	0	0	4	67	5	5	7	8	0	9	12	0	147	12%
Stoneware	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
Enamlwre/styrfoam	3	12	0	0	0	0	0	0	0	0	0	1	0	0	16	1%
Glassware	2	14	12	0	7	31	2	2	3	0	0	5	0	0	78	6%
Flatware	4	0	0	0	0	0	2	4	2	0	0	1	0	0	13	1%
<b>TOTALS</b>	25	125	24	2	45	574	25	250	41	8	0	87	71	0	1,277	

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
TOTALS (%)	2%	10%	2%	0%	4%	45%	2%	20%	3%	1%	0%	7%	6%	0%		
<b>FOOD REMAINS:<sup>3</sup></b>																
Bone, beef	41	22	15	1	8	28	20	21	3	2	0	21	3	3	188	26%
Bone, pig	0	2	1	0	0	1	0	4	0	0	0	0	0	0	8	1%
Bone, sheep	3	12	1	0	2	5	1	5	5	0	0	9	0	2	45	6%
Bone, pig/sheep	4	20	10	0	4	44	12	19	15	0	4	20	4	2	158	22%
Bone, rabbit	0	0	1	0	0	4	0	2	0	7	0	0	0	0	14	2%
Bone, small mammal	0	1	0	0	1	2	0	2	0	2	0	0	0	0	8	1%
Bone, unidentifiable	6	33	15	1	10	48	16	26	46	0	0	9	0	3	213	29%
Bone, bird	1	2	3	0	1	20	2	7	5	1	0	0	0	0	42	6%
Bone, chicken	0	0	0	0	0	10	3	5	4	0	0	9	0	0	31	4%
Bone, turkey	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0%
Bone, fish	0	0	0	0	0	8	0	4	1	0	0	1	0	0	14	2%
Subtotals	55	92	46	2	26	170	54	95	79	13	4	70	7	10	723	
Subtotals (%)	8%	13%	6%	0%	4%	24%	7%	13%	11%	2%	1%	10%	1%	1%		
Shell, clam	9	6	0	0	0	27	1	1	1	0	0	5	0	0	50	37%
Shell, crab	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7	5%
Shell, egg	0	x	0	0	0	x	x	0	x	0	0	x	0	0	0	---
Seed, fruit	1	3	3	0	1	10	1	4	5	41	0	2	1	0	72	53%
Seed, nut	0	0	0	0	0	0	0	0	1	3	0	2	0	0	6	4%

3

Totals are higher than those shown in Huelsbeck faunal report, table 4, appendix 6, this report.

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>Totals</b>	10	9	3	0	1	44	2	5	7	44	0	9	1	0	135	
<b>Totals (%)</b>	7%	7%	2%	0%	1%	33%	1%	4%	5%	33%	0%	7%	1%	0%		
<b>BEVERAGE CONTAINERS:</b>																
Bottle, Amber	8	10	22	0	7	42	7	145	2	1	0	10	7	0	261	11%
Bottle, Aqua	0	6	1	0	1	19	0	107	0	0	0	9	3	0	146	6%
Bottle, Clear	1	53	19	0	3	55	1	54	1	0	0	4	1	0	192	8%
Bottle, Clear (SCA)	0	5	0	0	0	135	0	28	1	0	0	6	1	0	176	7%
Bottle, Clear (Sel)	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0%
Bottle, Green	0	0	2	0	0	12	47	1	0	0	1	1	0	0	64	3%
Bottle, Emerald	0	30	3	0	0	31	7	1	4	0	0	203	0	2	281	11%
Bottle, Olive	1	104	4	0	3	64	29	1	1	0	0	2	2	1	212	9%
Bottle, Pale Aqua/Grn	2	1	13	0	0	9	63	738	0	0	0	2	0	0	828	34%
Decanter	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0%
Flask, Clear	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0%
Flask, Clear (SCA)	0	0	0	0	0	57	0	0	0	9	1	0	0	0	67	3%
Flask, Clear (Sel.)	0	1	0	0	0	0	0	0	0	0	0	101	0	0	102	4%
Cap, Crown	3	20	6	0	0	13	4	8	0	0	0	8	0	3	65	3%
Cap, Bottle	0	1	0	0	0	0	0	0	0	0	1	0	0	1	3	0%
Cap, Threaded	0	1	1	0	0	0	0	1	0	0	0	0	0	0	3	0%
Stopper, Cork	0	0	0	0	0	1	0	0	0	3	0	1	0	0	5	0%
Foil from bottle	9	16	6	0	0	0	10	0	2	0	0	0	0	1	44	2%
Label/Seal	1	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0%
Pull tab	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Opener, crown cap	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0%
<b>TOTALS</b>	25	250	77	2	14	444	168	1,085	12	14	3	347	14	8	2,463	
<b>TOTALS (%)</b>	1%	10%	3%	0%	1%	18%	7%	44%	0%	1%	0%	14%	1%	0%		
<b>FOOD-RELATED, UNKNOWN USE:</b>																
Container, amber	2	7	0	0	0	45	12	7	0	0	0	6	2	1	82	18%
Container, aqua	5	7	6	0	1	4	2	9	2	0	0	2	6	0	44	10%
Container, colorless	1	16	0	0	1	13	0	0	10	1	0	6	11	0	59	13%
Container, SCA	3	11	3	0	3	28	24	2	2	0	0	10	4	1	91	20%
Container, selenium	4	8	0	0	5	2	0	16	0	0	0	0	0	0	35	8%
Container, green	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	0%
Container, emerald	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0%
Container, olive	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0%
Cntr, pale aqua/green	6	4	0	1	2	19	23	64	6	0	0	4	0	0	129	29%
Porcelain, hollow.	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	1%
<b>TOTALS</b>	21	54	9	1	12	111	66	100	20	1	1	28	23	2	449	100%
<b>TOTALS (%)</b>	5%	12%	2%	0%	3%	25%	15%	22%	4%	0%	0%	6%	5%	0%		
<b>GRAND TOTALS-FOOD-RELATED ARTIFACTS</b>																
<b>Food Storage</b>	15	52	2	2	10	2,564	53	249	65	69	27	77	5	1	3,191	42%
<b>Food Preparation</b>	0	4	4	0	5	31	0	1	3	1	1	30	0	0	80	1%
<b>Food Serving</b>	25	125	24	2	45	574	25	250	41	8	0	87	71	0	1,277	17%
<b>Food Remains</b>	10	9	3	0	1	44	2	5	7	44	0	9	1	0	135	2%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Beverage Containers	25	250	77	2	14	444	168	1,085	12	14	3	347	14	8	2,463	32%
Food-Related, Unk	21	54	9	1	12	111	66	100	20	1	1	28	23	2	449	6%
GRAND TOTALS	96	494	119	7	87	3,768	314	1,690	148	137	32	578	114	11	7,595	
GRAND TOTALS (%)	1%	7%	2%	0%	1%	50%	4%	22%	2%	2%	0%	8%	2%	0%		



## APPENDIX 5 - Food-Related Artifacts, by Minimum Number Count

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>FOOD STORAGE:</b>																
Can, sanitary	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0%
Can, fish	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	1%
Can, other cyl	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	1%
Frag, hole-in-cap	0	1	0	0	0	22	0	4	1	2	1	0	0	0	31	12%
Frag, sanitary	0	0	0	0	0	18	1	0	0	0	0	0	0	0	19	8%
Frag, fish	0	1	0	0	0	6	0	1	0	0	1	1	0	0	10	4%
Frag, other cyl	0	0	0	0	0	25	1	2	1	0	1	1	0	0	31	12%
Frag, oblong	0		0	0	0	2	0	0	1	0	0	2	0	0	5	2%
Frag, unidentified	0	0	0	0	1	56	0	1	1	0	0	0	0	0	59	24%
Roll key opener	1	0	0	0	1	1	0	1	2	0	1	0	0	0	7	3%
Wrapper, foil	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1%
Wrapper, cellophane	1	6	1	0	0	0	0	0	0	0	0	0	0	1	9	4%
Wrapper, plastic	2	6	0	0	0	0	0	0	0	0	0	0	0	0	8	3%
Handle, wire	0	0	1	0	0	2	0	0	0	0	0	0	0	0	3	1%
Crockery	1	2	0	0	1	10	0	1	0	0	0	1	1	0	17	7%
Crockery, jar-whole	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1%
Crockery, jar-frag	0	1	0	0	0	6	0	0	2	0	0	1	0	0	10	4%
Jar, glass	1	4	0	1	2	2	0	0	0	2	0	8	0	0	20	8%
Jar, lid/liner	0	0	0	0	0	3	0	2	0	0	0	1	0	0	6	2%
Gasket, rubber	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	1%
Stopper, cork	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	1%
<b>Totals</b>	7	22	2	1	5	155	2	15	11	4	5	18	1	1	249	

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>Totals (%)</b>	3%	9%	1%	0%	2%	62%	1%	6%	4%	2%	2%	7%	0%	0%		
<b>FOOD PREPARATION:</b>																
Crockery, bowl	0	0	1	0	0	2	0	0	1	0	0	1	0	0	5	14%
Barrel, mustard	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3%
Bottle, catsup	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Bottle, condiment	0	0	2	0	2	5	0	0	2	0	1	1	0	0	13	35%
Bottle, sauce, stopper	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	5%
Cap, bottle	0	3	1	0	2	1	0	0	0	0	0	1	0	0	8	22%
Jar, condiment lid	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3%
Coffeepot, filter	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3%
Cutter, cheese	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3%
Pan, baking	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3%
Pot	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8%
<b>Totals</b>	0	4	4	0	5	10	0	1	3	1	1	8	0	0	37	
<b>Totals (%)</b>	0%	11%	11%	0%	14%	27%	0%	3%	8%	3%	3%	22%	0%	0%		
<b>FOOD SERVING:</b>																
<i>Whiteware, undecorated</i>																
Bowl	1	0	0	0	0	1	1	1	0	0	0	0	1	0	5	12%
Bowl, serving	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2%
Cup	1	1	0	1	1	1	1	0	1	0	0	0	0	0	7	16%
Cup, gilt edge	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2%
Plate	1	1	0	0	1	4	0	1	0	0	0	0	0	0	8	19%
Plate, gilt edge	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Plate/saucer	0	1	1	0	0	0	1	1	1	0	0	1	0	0	6	14%
Dish	4	1	1	0	1	1	0	1	1	0	0	3	0	0	13	30%
Dish, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2%
<i>Subtotals</i>	7	5	2	1	3	8	3	5	3	0	0	5	1	0	43	
<i>Subtotals (%)</i>	16%	12%	5%	2%	7%	19%	7%	12%	7%	0%	0%	12%	2%	0%		<b>23%<sup>1</sup></b>
<i>Whiteware, molded</i>																
Lid, Tureen	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4%
Bowl	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	8%
Cup	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4%
Plate	0	0	0	1	0	2	0	2	0	0	0	2	0	0	7	27%
Plate, gilt edge	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4%
Saucer	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3	12%
Saucer, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
Plate/saucer	0	2	0	0	1	1	0	1	1	0	0	2	0	0	8	31%
Dish	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
Dish, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
<i>Subtotals</i>	0	3	0	1	1	8	0	4	2	0	0	6	1	0	26	
<i>Subtotals (%)</i>	0%	12%	0%	4%	4%	31%	0%	15%	8%	0%	0%	23%	4%	0%		<b>14%</b>
<i>Whiteware, painted/transferprint --</i>																
Pitcher	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4%
Bowl, gilt	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4%

1

Percentage shown for each ceramic category is percentage of estimated minimum number of ceramic vessels recovered.

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Cup	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4%
Plate	0	1	0	0	0	3	0	1	0	0	0	0	1	0	6	23%
Plate, gilt edge	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4%
Saucer	0	0	0	0	0	2	1	0	1	0	0	0	0	0	4	15%
Saucer, gilt edge	0	0	0	0	0	2	0	0	0	0	0	1	0	0	3	12%
Saucer, nappy	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	12%
Plate/saucer	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	8%
Dish	0	1	0	0	0	1	0	0	0	0	0	1	1	0	4	15%
<i>Subtotals</i>	0	2	0	0	0	9	2	2	3	0	0	5	3	0	26	
<i>Subtotals (%)</i>	0%	8%	0%	0%	0%	35%	8%	8%	12%	0%	0%	19%	12%	0%		<b>14%</b>
<i>Whiteware, decalcomania</i>																
Bowl	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6%
Cup	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	12%
Cup, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6%
Hollowware	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6%
Plate	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	12%
Plate, gilt edge	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6%
Saucer	0	1	0	0	0	1	0	0	0	0	0	1	0	0	3	18%
Saucer, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6%
Saucer, nappy	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6%
Plate/saucer	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6%
Dish	0	1	1	0	0	1	0	0	0	0	0	0	0	0	3	18%
<i>Subtotals</i>	0	2	1	0	0	5	0	3	1	0	0	4	1	0	17	
<i>Subtotals (%)</i>	0%	12%	6%	0%	0%	29%	0%	18%	6%	0%	0%	24%	6%	0%		<b>8.9%</b>

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>SUBTOTALS - WHITEWARE</b>																
Undecorated	7	5	2	1	3	8	3	5	3	0	0	5	1	0	43	38%
Molded	0	3	0	1	1	8	0	4	2	0	0	6	1	0	26	23%
Painted/TP	0	2	0	0	0	9	2	2	3	0	0	5	3	0	26	23%
Decalcomania	0	2	1	0	0	5	0	3	1	0	0	4	1	0	17	15%
<b>SUBTOTALS</b>	7	12	3	2	4	30	5	14	9	0	0	20	6	0	112	
<b>SUBTOTALS (%)</b>	6%	11%	3%	2%	4%	27%	4%	13%	8%	0%	0%	18%	5%	0%		<b>59%</b>
<b><i>Ironstne/Grntewre, Undecorated</i></b>																
Bowl	0	0	1	0	0	2	1	1	1	0	0	0	1	0	7	23%
Cup	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	6%
Hollowware	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3	10%
Plate	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3	10%
Plate, gilt edge	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3%
Saucer	0	1	0	0	0	1	0	1	0	0	0	0	0	0	3	10%
Saucer, gilt edge	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	6%
Plate/saucer	0	1	0	0	0	1	0	1	0	0	0	0	0	0	3	10%
Dish	0	2	1	0	0	1	0	1	1	0	0	0	1	0	7	23%
<b>Subtotals</b>	1	6	3	0	4	7	1	4	2	0	0	1	2	0	31	
<b>Subtotals (%)</b>	3%	19%	10%	0%	13%	23%	3%	13%	6%	0%	0%	3%	6%	0%		<b>16%</b>
<b><i>Ironstne/Grntewre, Molded</i></b>																
Bowl	0	0	0	0	0	1	0	1	0	0	0	1	0	0	3	27%
Cup	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	18%
Saucer	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	18%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Saucer, gilt edge	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	18%
Plate/saucer	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9%
Platter	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	9%
<b>Subtotals</b>	0	1	0	0	0	3	0	2	2	0	0	2	1	0	11	
<b>Subtotals (%)</b>	0%	9%	0%	0%	0%	27%	0%	18%	18%	0%	0%	18%	9%	0%		<b>5.8%</b>
<b><i>Ironstne/Grntewre, Painted/Transfrprnt</i></b>																
Dish, pickle, gilt	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	25%
Lid, Tureen	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	25%
Saucer	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	25%
Plate/saucer	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	25%
<b>Subtotals</b>	0	0	1	0	0	1	0	1	1	0	0	0	0	0	4	
<b>Subtotals (%)</b>	0%	0%	25%	0%	0%	25%	0%	25%	25%	0%	0%	0%	0%	0%		<b>2.1%</b>
<b><i>Ironstne/Grntewre, Decalcomania</i></b>																
Cup, gilt edge	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	17%
Saucer	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	33%
Plate/saucer	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	17%
Plate/saucer, gilt edge	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17%
Dish	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17%
<b>Subtotals</b>	0	1	1	0	0	2	0	1	1	0	0	0	0	0	6	
<b>Subtotals (%)</b>	0%	17%	17%	0%	0%	33%	0%	17%	17%	0%	0%	0%	0%	0%		<b>3.1%</b>
<b>SUBTOTALS -IRONSTONE/GRANITEWARE</b>																
Undecorated	1	6	3	0	4	7	1	4	2	0	0	1	2	0	31	60%
Molded	0	1	0	0	0	3	0	2	2	0	0	2	1	0	11	21%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Painted/TP	0	0	1	0	0	1	0	1	1	0	0	0	0	0	4	8%
Decalcomania	0	1	1	0	0	2	0	1	1	0	0	0	0	0	6	12%
<b>SUBTOTALS</b>	1	8	5	0	4	13	1	8	6	0	0	3	3	0	52	
<b>SUBTOTALS (%)</b>	2%	15%	10%	0%	8%	25%	2%	15%	12%	0%	0%	6%	6%	0%		<b>27%</b>
<i>Porcelain, Undecor.</i>																
Bowl, gilt edge	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5%
Bowl	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	10%
Cup	0	0	0	0	0	3	0	0	1	0	0	1	0	0	5	25%
Cup, gilt edge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	5%
Hollowware	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5%
Plate	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
Plate, gilt rim	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	10%
Saucer	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2	10%
Saucer, gilt edge	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	10%
Saucer, butter	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5%
Dish	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	10%
<b>Subtotals</b>	0	2	0	0	2	8	0	1	2	2	0	1	2	0	20	
<b>Subtotals (%)</b>	0%	10%	0%	0%	10%	40%	0%	5%	10%	10%	0%	5%	10%	0%		<b>10%</b>
<i>Porcelain, Molded</i>																
Lid, spec. dish	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	13%
Cup	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	13%
Saucer	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	13%
Saucer, gilt edge	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3	38%
Saucer, nappy	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	13%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Dish	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	13%
<i>Subtotals</i>	0	2	0	0	1	4	1	0	0	0	0	0	0	0	8	
<i>Subtotals (%)</i>	0%	25%	0%	0%	13%	50%	13%	0%	0%	0%	0%	0%	0%	0%		<b>4.2%</b>
<i>Porcelain, Painted/Trnsfrprnt</i>																
Bowl	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3%
Cup	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3	9%
Cup, gilt edge	0	1	0	0	0	1	1	0	0	0	0	2	0	0	5	14%
Plate	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	6%
Plate, gilt edge	0	0	0	0	0	1	0	1	0	0	0	1	0	0	3	9%
Saucer	0	2	0	0	0	4	0	0	0	0	0	0	0	0	6	17%
Saucer, gilt edge	0	1	0	0	0	4	0	1	1	0	0	1	1	0	9	26%
Dish	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	6%
Dish, gilt edge	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3%
Dish, pickle	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3%
Dish, specialty	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	6%
<i>Subtotals</i>	0	8	0	0	1	13	1	2	3	0	0	6	1	0	35	
<i>Subtotals (%)</i>	0%	23%	0%	0%	3%	37%	3%	6%	9%	0%	0%	17%	3%	0%		<b>18%</b>
<i>Porcelain, Decalcomania</i>																
Cup	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	11%
Saucer	0	3	0	0	0	2	0	0	0	0	0	0	1	0	6	67%
Saucer, gilt edge	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	22%
<i>Subtotals</i>	0	3	0	0	0	4	0	1	0	0	0	0	1	0	9	
<i>Subtotals (%)</i>	0%	33%	0%	0%	0%	44%	0%	11%	0%	0%	0%	0%	11%	0%		<b>4.7%</b>
<b>SUBTOTALS - PORCELAIN</b>																

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Undecorated	0	2	0	0	2	8	0	1	2	2	0	1	2	0	20	28%
Molded	0	2	0	0	1	4	1	0	0	0	0	0	0	0	8	11%
Painted/TP	0	8	0	0	1	13	1	2	3	0	0	6	1	0	35	49%
Decalcomania	0	3	0	0	0	4	0	1	0	0	0	0	1	0	9	13%
<b>SUBTOTALS</b>	0	15	0	0	4	29	2	4	5	2	0	7	4	0	72	
<b>SUBTOTALS (%)</b>	0%	21%	0%	0%	6%	40%	3%	6%	7%	3%	0%	10%	6%	0%		<b>38%</b>
<i>Stoneware, Painted</i>																
Ladle handle, pantd	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	<b>0.5%</b>
<b>TOTAL CERAMIC SERVING WARE</b>																
Whiteware	7	12	3	2	4	30	5	14	9	0	0	20	6	0	112	59%
Ironstone/Grntwre	0	1	1	0	0	2	0	1	1	0	0	0	0	0	6	3%
Porcelain	0	15	0	0	4	29	2	4	5	2	0	7	4	0	72	38%
Stoneware	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1%
<b>SUBTOTALS</b>	7	28	4	2	8	62	7	19	15	2	0	27	10	0	191	
<b>SUBTOTALS (%)</b>	4%	15%	2%	1%	4%	32%	4%	10%	8%	1%	0%	14%	5%	0%		
<i>OTHER FOOD SERVING:</i>																
Enamelware, cup	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	14%
Styrofoam, cup	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	71%
Styrofoam, bowl	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14%
<i>Subtotals</i>	1	5	0	0	0	0	0	0	0	0	0	1	0	0	7	
<i>Subtotals (%)</i>	14%	71%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%		
<i>Glassware:</i>																
Plate	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3%
Saucer	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Dish, serving	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3%
Cup	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3%
Glass, drinking	1	4	2	0	3	7	1	0	2	0	0	2	1	0	23	70%
Glass, drnking, decorative	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3%
Glass, stemmed	0	1	0	0	0	3	0	0	0	0	0	1	0	0	5	15%
<i>Subtotals</i>	2	6	2	0	3	11	1	1	2	0	0	4	1	0	33	
<i>Subtotals (%)</i>	6%	18%	6%	0%	9%	33%	3%	3%	6%	0%	0%	12%	3%	0%		
<i>Flatware:</i>																
Fork	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9%
Teaspoon	2	0	0	0	0	0	1	1	0	0	0	0	0	0	4	36%
Tablespoon	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4	36%
Knife, table	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9%
Knife, carving, walrus tusk	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	9%
<i>Subtotals</i>	2	0	0	0	0	0	2	4	2	0	0	1	0	0	11	
<i>Subtotals (%)</i>	18%	0%	0%	0%	0%	0%	18%	36%	18%	0%	0%	9%	0%	0%		
<b>TOTAL FOOD SERVING:</b>																
Whiteware	7	12	3	2	4	30	5	14	9	0	0	20	6	0	112	46%
Ironstone/Grntware	0	1	1	0	0	2	0	1	1	0	0	0	0	0	6	2%
Porcelain	0	15	0	0	4	29	2	4	5	2	0	7	4	0	72	30%
Stoneware	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
Enamlwre/styrfoam	1	5	0	0	0	0	0	0	0	0	0	1	0	0	7	3%
Glassware	2	6	2	0	3	11	1	1	2	0	0	4	1	0	33	14%
Flatware	2	0	0	0	0	0	2	4	2	0	0	1	0	0	11	5%
<b>TOTALS</b>	12	39	6	2	11	73	10	24	19	2	0	33	11	0	242	



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
TOTALS (%)	5%	16%	2%	1%	5%	30%	4%	10%	8%	1%	0%	14%	5%	0%		
FOOD REMAINS: <sup>2</sup>																
Bone, beef	36	20	15	1	8	26	20	20	3	1	0	16	3	3	172	25%
Bone, pig	0	1	1	0	0	1	0	4	0	0	0	0	0	0	7	1%
Bone, sheep	2	6	1	0	2	4	1	5	4	0	0	3	0	2	30	4%
Bone, pig/sheep	4	20	10	0	4	44	10	17	11	0	3	20	4	2	149	22%
Bone, rabbit	0	0	1	0	0	2	0	2	0	5	0	0	0	0	10	1%
Bone, small mammal	0	1	0	0	1	2	0	2	0	2	0	0	0	0	8	1%
Bone, unidentifiable	6	33	15	1	10	48	16	26	46	0	0	9	0	3	213	31%
Bone, bird	1	2	3	0	1	20	2	7	5	1	0	0	0	0	42	6%
Bone, chicken	0	0	0	0	0	10	3	5	4	0	0	9	0	0	31	5%
Bone, turkey	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0%
Bone, fish	0	0	0	0	0	8	0	4	1	0	0	1	0	0	14	2%
Subtotal	49	83	46	2	26	165	52	92	74	10	3	59	7	10	678	
	7%	12%	7%	0%	4%	24%	8%	14%	11%	1%	0%	9%	1%	1%		
Shell, clam	9	6	0	0	0	23	1	1	1	0	0	5	0	0	46	38%
Shell, crab	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7	6%
Shell, egg <sup>3</sup>	0	0	0	0	0	x	x	0	x	0	0	x	0	0	0	----
Seed, fruit	1	3	2	0	1	9	1	3	5	34	0	2	1	0	62	51%
Seed, nut	0	0	0	0	0	0	0	0	3	1	0	2	0	0	6	5%

<sup>2</sup> MNI figures are equivalent to those used in Huelsbeck, appendix 6, table 4, this report.

<sup>3</sup> Presence/absence only.

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
Totals	10	9	2	0	1	39	2	4	9	35	0	9	1	0	121	
Totals (%)	8%	7%	2%	0%	1%	32%	2%	3%	7%	29%	0%	7%	1%	0%		
BEVERAGE CONTAINERS:																
Bottle, Amber	1	4	0	0	1	5	2	15	2	1	0	2	0	0	33	13%
Bottle, Aqua	0	2	0	0	1	3	0	7	0	0	0	1	2	0	16	6%
Bottle, Clear	1	1	2	0	1	6	1	2	1	0	0	1	1	0	17	7%
Bottle, Clear (SCA)	0	3	0	0	0	5	0	2	1	0	1	1	1	0	14	5%
Bottle, Clear (Sel)	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	1%
Bottle, Green	0	0	0	0	0	2	1	1	0	0	1	1	0	0	6	2%
Bottle, Emerald	0	2	0	0	0	3	1	1	1	0	0	10	0	1	19	7%
Bottle, Olive	1	3	2	0	2	2	1	1	1	0	0	2	1	1	17	7%
Bottle, Pale Aqua/Grn	1	2	2	0	0	2	3	23	0	0	0	1	0	0	34	13%
Decanter	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0%
Flask, Clear	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0%
Flask, Clear (SCA)	0	0	0	0	0	3	0	0	0	5	1	0	0	0	9	4%
Flask, Clear (Sel.)	0	1	0	0	0	0	0	0	0	0	0	2	0	0	3	1%
Cap, Crown	3	14	4	0	0	10	3	4	0	0	0	8	0	3	49	19%
Cap, Bottle	0	1	0	0	0	0	0	0	0	0	1	0	0	1	3	1%
Cap, Threaded	0	1	1	0	0	0	0	1	0	0	0	0	0	0	3	1%
Stopper, Cork	0	0	0	0	0	1	0	0	0	3	0	1	0	0	5	2%
Foil from bottle	2	6	3	0	0	0	3	0	2	0	0	0	0	1	17	7%
Label/Seal	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1%
Pull tab	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1%
Opener, crown cap	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
<b>Totals</b>	10	42	14	2	5	44	15	58	9	9	4	30	6	7	255	
<b>Totals (%)</b>	4%	16%	5%	1%	2%	17%	6%	23%	4%	4%	2%	12%	2%	3%		
<b>FOOD-RELATED, UNKNOWN USE:</b>																
Container, amber	1	1	0	0	0	2	2	1	0	0	0	4	2	1	14	15%
Container, aqua	1	3	1	0	1	3	1	1	1	0	0	1	1	0	14	15%
Container, colorless	1	1	0	0	1	2	0	0	6	1	0	1	1	0	14	15%
Container, SCA	2	2	2	0	1	2	1	1	2	0	0	6	1	1	21	22%
Container, selenium	2	2	0	0	2	1	0	3	0	0	0	0	0	0	10	11%
Container, green	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2%
Container, emerald	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1%
Container, olive	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1%
Container, pale aqua /pale green	2	2	0	1	1	1	1	1	4	0	0	2	0	0	15	16%
Porcelain, hollow.	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2%
<b>Totals</b>	9	12	3	1	6	11	8	8	13	1	1	14	5	2	94	100%
<b>Totals (%)</b>	10%	13%	3%	1%	6%	12%	9%	9%	14%	1%	1%	15%	5%	2%		
<b>GRAND TOTALS-FOOD-RELATED ARTIFACTS</b>																
<b>Food Storage</b>	7	22	2	1	5	155	2	15	11	4	5	18	1	1	249	25%
<b>Food Preparation</b>	0	4	4	0	5	10	0	1	3	1	1	8	0	0	37	4%
<b>Food Serving</b>	12	39	6	2	11	73	10	24	19	2	0	33	11	0	242	24%
<b>Food Remains</b>	10	9	2	0	1	39	2	4	9	35	0	9	1	0	121	12%
<b>Beverage Containers</b>	10	42	14	2	5	44	15	58	9	9	4	30	6	7	255	26%
<b>Food-Related, Unk</b>	9	12	3	1	6	11	8	8	13	1	1	14	5	2	94	9%
<b>GRAND TOTALS</b>	48	128	31	6	33	332	37	110	64	52	11	112	24	10	998	

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moor dump	Moor privy	Moor	Shed 1	SW yard	Bd walk	Total	Total (%)
GRAND TOTALS (%)	5%	13%	3%	1%	3%	33%	4%	11%	6%	5%	1%	11%	2%	0.01		

## APPENDIX 6 - Zooarcheology and the Occupants of the Moore House

David R. Huelsbeck  
Pacific Lutheran University  
May 5, 1996

### INTRODUCTION

The National Park Service has been working to improve the infrastructure in the Klondike Gold Rush National Historical Park in Skagway, Alaska for more than a decade. Historical and archeological research has preceded and accompanied construction. This report is part of that research and describes the identification and analysis of zooarcheological remains recovered in 1988, 1993, 1994, and 1995 from the property around the Moore House.

Analysis of animal remains increasingly is an important part of archeological analysis in general (Brewer 1992; Crabtree 1990; Lyman 1982, 1987a; and references therein) and in North American historical sites in particular (Crabtree 1985, Jolley 1983, Landon 1996, and references therein). One indication of this growing importance is the use of zooarcheological data to address complex issues such as socioeconomic status. Another indication is the increasing sensitivity to a variety of factors in the analysis of status (compare Schulz and Gust 1983a with Huelsbeck 1989, 1991; Lyman 1987b; Schmitt and Zeier 1993). It is now recognized that faunal data must be considered in conjunction with other data sets if archeologists hope to recognize and understand the nuances of something as complex as status in the archeological record. The purpose of this report is to describe the faunal remains data and to present analyses of aspects of the data that can be articulated with information from other data sets.

Several of the authors listed above advocate a particular approach to zooarcheological research. Different approaches appear to be better suited to particular research questions and contexts. The approach used here to integrate complex variables and provide articulation points for information from other data is a consumer behavior research framework (Huelsbeck 1991). This research framework emphasizes I. factors that affect availability, II.

factors that affect consumer choices, III. classification of the faunal remains into categories that reflect the conditions of availability and choice, and finally, IV. considering the impact of taphonomic forces and recovery techniques on the recovered materials (Huelsbeck 1991).

### FACTORS THAT AFFECT AVAILABILITY

#### Geography - Local

Skagway is located on Lynn Canal near the head of Taiya Inlet fjord. It is near the northern edge of the Moist Maritime Climatic Zone, but averages only 28 inches of precipitation per year. The climate is very conducive to gardening, but the available space is limited. Wild animal populations were decimated quickly during the gold rush (Adams and Brauner 1991). Some animals were raised in town, particularly before the gold rush (Rhodes 1988:284). Some animals continued to be raised for food after the collapse of the gold rush boom. It is possible to detect the difference between commercial and home butchered bones in an assemblage of faunal remains (Huelsbeck 1988).

The bulk of the meat consumed in Skagway was imported from the outside and purchased from retail butchers. Skagway's somewhat isolated location makes it susceptible to isolating events. Harsh weather, particularly in winter, occasionally prevented shipments from reaching Skagway and caused shortages and inflated prices. Harsh conditions also sometimes prevented shipments destined for the interior from leaving Skagway, causing surpluses and deflated costs (Rhodes 1988:288). Seasonal variations in prices may have occurred regularly, and the faunal analyst must be sensitive to the possibility of atypical single event deposits.

Meat imports arrived in Skagway as livestock and as processed meats (salted, frozen) (Rhodes 1988). It seems likely that livestock would be more suscep-



tible to price fluctuations. The presence of butcher waste (heads and feet) could reflect home raised meat animals or commercially butchered livestock. The archeological context of the faunal remains should help to distinguish between domestic and commercial activities.

### **Geography - Regional**

Because most of the meat consumed in Skagway was imported from outside of Alaska, it is important to consider the source of that meat. Some of it came from a variety of areas, but most of the meat came from the Northwest United States (Rhodes 1988:287). The source region for the meat is important because frequency there affects the availability and price of different meats. Price is affected by factors besides supply, such as demand; but supply is an important factor.

Many authors have noted that Americans on average consumed more pork than beef in the late 19th and throughout the first half of the twentieth century. This pattern is reversed in the West (Schulz 1979:57 and references therein), and Rhodes (1988) notes that beef is more abundant than pork in Skagway deposits. Was something different about the food preferences of Westerners, or is there a "materialist" explanation?

Ross (1980) examines the historical development of meat consumption patterns in the US. He notes that hogs are efficient users of concentrated feeds, while cattle and sheep are more suited to range land (1980:187). Cattle production began to increase after 1870 as ranchers expanded onto the Great Plains. Increased transportation opportunities, expanding rail lines and refrigerator cars, and markets for cattle by-products such as leather, all contributed to the profitability of cattle production (Ross 1980:202-3). Hog production continued at relatively high levels because of the export market. By the early 1900s, open range land was disappearing and the relative cost of beef production began to rise. Consequently, per capita consumption of beef declined and from the 1920s until after World War II, Americans consumed more pork than beef (Ross 1980:206).

This brief history is from the perspective of the country as a whole and is only partly representative of the West and Northwest. Before World War II, the major market for western livestock was to the east

(Hickman 1923); so records of the Chicago market are pertinent. However, there were population centers within the region and therefore local markets. Prices in those local markets (and consumption patterns) undoubtedly were affected by a wide range of factors (Ross 1980), but hogs have never been a very important aspect of Northwest agriculture. Writing in 1942, Merriam (p. 403) states that "market demands for hogs in the Pacific Northwest are in excess of the local supply, and additional shipments are made from eastern Montana and even farther ..." Although a detailed history of the livestock industry in the Pacific Northwest is beyond the scope of this paper, a brief examination of the relative abundance of cattle, sheep, and pigs will shed light on consumption patterns in Skagway.

The Northwest livestock industry began in the 1820s with the import of cattle (from California?) to supply fur-trading posts and later military forts (Farrar 1923, Merriam 1942). The number of cattle rapidly increased, and by 1855 it is estimated that there were 200,000 head in Walla Walla country (Merriam 1942). By 1880 the open range was suffering from overgrazing and settlers had fenced most of the best land. As cattle production became more difficult, sheep production increased (Fahey 1986). Sheep could utilize poorer range and fit into the fallow cycle of grain growers, eating stubble, weeds in fallow fields, and weeds along fencerows.

By 1920 sheep outnumbered beef cattle in Washington State by more than 3:1 and in the region by almost 5:1 (table 1). As human populations in the region increased, more intensive forms of animal husbandry became economically feasible and the number of dairy cattle and hogs increased (table 1). The region lacks rich cornfields for fattening swine, and in 1942 the region was only feeding "some 500,000 to 600,000 hogs annually" (Merriam 1942:408).

The changing economics of raising livestock were accompanied by changes in livestock management. "The former practice was to stock the ranges to the limit of their carrying capacity and keep the steers on the range until they were 3 to 5 years of age and sell them off grass weighing 1,300 to 1,600 pounds" (Hickman 1923:93). Ranges declined in area and carrying capacity, and the market began to favor younger animals. The cattle industry responded and

**Table 1 - Historic Livestock Populations in the Northwest**  
(in thousands)

	IDAHO		WASHINGTON		OREGON	
	1910	1920	1910	1920	1910	1920
Beef	371.4	523.0	222.4	202.5	557.7	575.3
Dairy	924.3	215.3	201.5	403.1	184.6	297.2
Sheep	3018.4	2395.8	478.5	648.3	2700.9	2013.6
Hogs	181.2	249.6	14.0	24.3	220.6	272.7

(Hickman 1923:84)

shifted to marketing “yearlings and two year olds weighing 900 to 1,200 pounds” (Hickman 1923:93). According to the literature reviewed for this report, this shift was well underway by 1910 and virtually complete by 1920. The number of cattle on the range remained virtually unchanged between 1920 and 1940 (Merriam 1942:403).

### Price

The price of meat as a factor affecting availability has received a great deal of attention from zooarcheologists. The best kind of data for this kind of examination is a record of prices in the local/regional meat markets. Data of this quality rarely are available and most authors rely on Schulz and Gust (1983b). They documented that while beef prices varied during the nineteenth century the rank order of the prices of the various wholesale cuts of beef remained virtually unchanged.

Schulz and Gust did not gather the data necessary to incorporate pork and lamb/mutton into their price rank model. Unfortunately, no one has yet published this information. When this information is available, it may be possible to develop price scales that will allow the quantitative integration of purchase price data on beef, pork, and lamb/mutton. This approach was adopted by Henry (1983) using contemporary Phoenix prices, but it appears to be somewhat premature. Hattori and Kosta (1990) found that the price of individual cuts of pork varied widely depending on the quality of the pig. They found that “prime” packed pork (the lowest grade) included leg and arm bones (ham and butt), which are usually

considered to be “high” priced cuts. So the analyst must exercise caution when salt-pork is a likely source of pig bones in the faunal assemblage (such as the nineteenth century in general, and gold rush Skagway in particular?).

The relative price of different wholesale cuts of pork and lamb/mutton may not have varied during the early twentieth century; but it is not safe to make this assumption, particularly when it is clear that the relative prices of beef, pork and lamb have fluctuated (table 2). Between 1900 and 1945 at Chicago, beef was least expensive sometimes; but more often pork was least expensive, and occasionally lamb was least expensive.

What are the implications of all this price variation for the analysis of Skagway faunal remains? During the Gold Rush Period, Skagway experienced dramatic fluctuations in the supply of and demand for meat. The analyst should exercise extreme caution when attempting to infer price/availability information. Once the “boom” passed, it probably is safe to use the Schulz and Gust (1983a, 1983b) rankings of beef wholesale cuts. Given the nature of livestock production in the Northwest, it seems likely that lamb/mutton in Skagway was somewhat less expensive compared to pork than is indicated by the Chicago prices (table 2). The rank order of the different cuts as outlined by Henry can be used (with caution), but the integration of information from the three categories can only be done on a qualitative basis for the time being (table 3).

**Table 2 - Chicago Prices: Cattle, Pork, Lamb**  
(average price in dollars per hundredweight)

	<b>Cattle</b>	<b>Pork</b>	<b>Lamb</b>
1900	5.15	5.05	--
1905	5.05	5.25	6.80
1910	6.80	8.90	7.55
1915	8.40	7.10	9.00
1920	13.30	13.91	14.60
1925	10.16	11.81	15.66
1930	10.95	9.47	9.69
1935	10.26	9.27	9.02
1940	10.43	5.71	9.66
1945	16.18	14.66	14.90

(Bureau of the Census 1976:521-522)

### **Other Factors Affecting Availability**

A number of other factors such as interest in and skill at hunting and fishing affect the availability of various meats. Probably the most important remaining variable is whether or not food animals were raised by the land owners being studied. Home “grown” meat is more available than its market price would suggest. Historical sources list a variety of animals present in Skagway and owned by the Moores before the gold rush (Rhodes 1988:284). Faunal remains from post-gold rush deposits suggest that chickens and at least one hog were raised and consumed (Huelsenbeck 1988).

### **FACTORS AFFECTING CHOICE**

Purchasing power is one of the most important variables affecting choice. Those with more purchasing power tend to buy some expensive cuts more often than they purchase less expensive cuts. Meat purchases must be considered in the context of other consumer behavior because meat purchases are subject to different constraints compared to more permanent acquisitions, such as ceramics (Huelsenbeck 1991, Schmitt and Zeier 1993). Previous zooarcheological analyses of Skagway archaeofauna have identified purchasing power as one of the variables contributing to the structure of the faunal assemblage (Huelsenbeck 1993, 1994).

Religion and ethnicity are variables that have been identified as contributing factors in a number of faunal analyses (Huelsenbeck 1991 and references therein). In Skagway, Father Turnell’s trash pit did not yield clear indications of Catholic meatless Fridays (Huelsenbeck 1993), nor have other faunal assemblages yielded clear indications of ethnicity.

Indications of different foodways have been encountered in Skagway faunal assemblages. Father Turnell favored single-serving portions such as steaks and chops, while the Mascot Saloon favored cuts requiring lengthy moist heat cooking techniques (Huelsenbeck 1993, 1987). The saloon assemblage is thought to reflect the low cost, labor efficient production of free lunches for patrons in contrast to the dinners of a Jesuit priest, the son of an Italian count. Rhodes (1988:303) noted differences in the frequency of steaks, roasts, and boiling cuts between gold rush and post-1900 deposits, but a close examination of the meat cut information (page 282) to bring it in line with the classification system used below, reveals that most of the steaks are round or blade steaks requiring slow moist cooking. This reduces the differences between the two assemblages. The absence of cuts that are appropriate for frying could be due to the relatively small sample sizes.

Table 3 - Rank Order of Wholesale Cuts

Schulz & Gust	Henry	This report
<b>BEEF</b>	<b>BEEF</b>	<b>BEEF</b>
short loin	full loin	rib, loin, sirloin
rib, sirloin	rib	
round	round	round, rump, chuck
rump	rump	
chuck	tail	
arm, short rib	chuck	ribs, brisket
brisket, plate	foreshank	
neck	plate	
shank	neck	shank, neck
feet, head	feet	
	hindshank	
<b>PIG/SHEEP</b>	<b>SHEEP/GOAT</b>	<b>PIG/SHEEP</b>
none offered	loin	chop/steak
	rack	leg/roast
	chuck	ribs/brisket
	leg	shank/hock
	breast	neck/feet
	neck/head	
	<b>PORK</b>	
	loin	
	ham/leg	
	ribs	
	Boston butt	
	picnic shoulder	
	feet	
	head/neck	

## FACTORS AFFECTING IDENTIFICATION AND CLASSIFICATION

Very few of the bones in the assemblage under consideration here are sufficiently complete for confident, reliable identification of genus and species. Nearly all of the bones that could be identified to species are from domestic animals: cattle - *Bos taurus*; sheep - *Ovis aries*; and pig - *Sus scrofa*. Most of the remaining bones are from animals that were approximately the same size as cattle and sheep and exhibit evidence of commercial butchering.

The evidence indicating a twentieth century, commercial butchery pattern (described below) provides the units of classification for the identified bones and bone fragments. Lyman (1977) demonstrated that using meat amounts based on entire animals, rather than on butchering units (or wholesale cuts), could be very misleading. Huelsbeck (1989, 1991) demonstrated that the use of meat amounts based on wholesale cuts could be equally misleading if the much smaller retail cuts were the unit purchased and consumed. Retail cuts inferred from physical evidence in the faunal assemblage will be the units of classification used herein.

## TAPHONOMY AND RECOVERY TECHNIQUE

These factors must be considered in the analysis of any faunal assemblage because they force us to consider what might be missing from the assemblage. If taphonomic factors and/or recovery technique is (or could be) responsible for the absence of a particular category of faunal remains (such as fish bones), the analyst should not conclude that those animals were not consumed.

## FORMAT OF THE REPORT

A substantial collection of faunal remains has been recovered from the property surrounding the Moore House in Skagway, Alaska. This report describes and analyzes those remains. This introduction describes a consumer behavior research framework for meat purchase/consumption in Skagway. The report continues with a description of the recovered assemblages. First, recovery technique and taphonomy are considered to assess the "strength" of negative evidence. Then the "positive" evidence is described. Data related to taxonomic classification and cuts of

meat are considered first, and then these classes are used in the description of the assemblage and subassemblages. This information is used to assess factors affecting availability and choice. Finally, the Moore House faunal assemblage is placed in the larger context of Skagway history through comparison with other faunal assemblages from Skagway.

## THE COLLECTION

A total of 678 bone fragments and 53 shellfish shell fragments were recovered during excavations in 1988, 1993, 1994, and 1995 (table 4). Most of the bones could not be identified to species, but most could be assigned to a size-class. Based on species-specific identifications here and at other Skagway sites, it is very likely that most of the "beef" bones are from domestic cattle and that most of the "pig/sheep" bones are from domestic sheep.

The collection as a whole has been organized into 10 subassemblages based on the spatial location around the Moore house and on the potential for association with the Moore family (pre-1900) or the Kirmse family (occupants of the Moore House from 1910 until 1977). Table 5 identifies the subassemblages, and tables 6 and 7 list the breakdown of the entire collection by subassemblage, using counts and percentages respectively. These data are discussed below.

## NATURE OF THE DATA

The recovery techniques employed in this project include surface collection, excavation, screening with 1/8-inch mesh screen, and flotation. The relationship between screen size and recovery of small materials has been documented many times. The flotation samples did not yield very many bone fragments, and they did not yield a disproportionate number of small bones from small animals such as fish. It seems likely that the faunal assemblage that was collected does accurately reflect the faunal remains that were in the ground.

Most of the bones are in fairly good condition. Very few appear to have been adversely affected by soil conditions. A few are rather soft and break easily, but most of even the most fragile bones are in good shape. It seems likely that few bones were lost, once the bones were in the ground. Very few of the



Table 4 - Moore House Faunal Remains

Taxon	Number of Specimens	Taphonomic Category	Evidence Count
cow	3	dog-gnawed	49
beef	169	rodent-gnawed	11
pig	7	both	5
sheep	30		
pig/sheep	149	burned	
small mammal	18	white	79
indeterm. mammal	213	grey	3
		black	5
bird	75		
fish	14		
Total bone	<u>678</u>		
clam	46		
crab	7		
Total shell	<u>53</u>		

Table 5 - Subassemblages and Descriptions

Subassemblage	Excavation Units
A. Moore Dump, pre-1914	145N98E, 142N98E feat 24,
B. Kirmse Dump, 1914-1930s	142N98E, lev 1-3, Feature 23
C. Units adjacent to house (mixed)	90N58E, 92N45E, 95N47E, 122N40E, 125N86E, 125N91E
D. 1988, adjacent to house	89N91E, 94N81E
E. Units north of house (disturbed, mixed, Kirmse Dump 2 [1900-1920])	131N74E, 134N74E, 136N74E 139N47E, 131N68E, 131N71E
F. Dump Periphery, 1914-1930s	139N81E, 139N92E, 139N95E 140N103E, 140N110E
G. Kirmse Privy, ca. 1910-1917	130N116E, 128N118E l. 1-8 132N123E, 131N118E l. 1-8
H. Moore Privy, 1897-1900	131N118E, 128N118E lev. 9-11
I. Perimeter and periphery (mixed)	65N0W, 81N15E, 119N142E 128N95E
J. Shed and south of shed (mixed)	Surface, subquadrants 134N109E, 122N100E, 122N110E

Table 6 - Faunal Remains by Subassemblage, Counts

Taxon	Subassemblage									
	A	B	C	D	E	F	G	H	I	J
cow	1	0	1	0	1	0	0	0	0	0
beef	6	2	30	2	33	52	19	1	3	21
pig	0	0	1	0	0	2	4	0	0	0
sheep	4	0	12	1	3	0	5	0	0	5
pig/sheep	11	9	21	2	4	52	22	2	4	22
small mam	0	2	1	0	0	4	4	7	0	0
indeterm	46	3	39	7	16	45	44	0	1	12
bird	9	13	7	1	1	20	12	2	0	10
fish	2	4	0	0	0	3	4	0	0	1
clam	0	0	0	0	6	29	6	0	0	5
crab	1	1	0	0	0	5	0	0	0	0
<b>Totals</b>										
bone	79	33	112	13	58	178	114	12	8	71
shell	1	1	0	0	6	34	6	0	0	5
<b>Taphonomy</b>										
<u>gnawed</u>										
dog	1	0	3	1	4	16	9	1	2	12
rodent	0	2	2	0	0	0	3	1	0	3
both	0	2	2	0	0	0	0	0	0	1
<u>burned</u>										
white	29	4	0	4	8	21	12	0	0	1
grey	0	0	0	0	0	0	3	0	0	0
black	0	0	0	0	1	4	0	0	0	0

recovered bones are complete; most are saw-cut and/or broken. There is evidence of burning and of dogs and rodents gnawing on the bones. Clearly, processing the meat and disposal of the bones had an impact on the faunal assemblage. Disposal practices are considered next. Butchering and cooking are discussed further below.

A total of 49 bones exhibit tooth marks or other distinct evidence of being gnawed on by dogs or similar animals, 11 bones were gnawed by rodents, and 5 bones exhibit evidence of both kinds of gnaw-

ing. Many bones are broken, and this also could be the result of dogs. In the collection as a whole, approximately 8% of the bones exhibit evidence of dog-gnawing and 2.5% exhibit evidence of rodent gnawing. The sub-assemblage that was mostly surface collected under the shed contains the largest proportion of gnawed bones (16/68, 23.5%). The pre-1914 dump deposit has the lowest proportion of gnawed bones (1/79, 1.3%). The other subassemblages have about the same proportion of gnawed bones as the whole collection. This is true for bones deposited in sheet midden, dump, and

Table 7 - Faunal Remains by Subassemblage, Percentages

TAXON	Subassemblage									
	A	B	C	D	E	F	G	H	I	J
cow	1.3	0.0	0.9	0.0	1.8	0.0	0.0	0.0	0.0	0.0
beef	7.6	6.1	26.8	15.4	56.9	29.2	16.7	8.3	37.5	29.6
pig	0.0	0.0	0.9	0.0	0.0	1.1	3.5	0.0	0.0	0.0
sheep	5.1	0.0	10.7	7.7	5.2	0.0	4.4	0.0	0.0	7.0
pig/sheep	13.9	27.3	18.8	15.4	6.7	29.2	19.3	16.7	50.0	31.0
small mam	0.0	6.1	0.9	0.0	0.0	2.2	3.5	58.3	0.0	0.0
indeterm	58.2	9.0	34.8	53.8	27.6	25.3	38.6	0.0	12.5	16.9
bird	11.4	39.4	6.2	7.7	1.8	11.3	10.5	16.7	0.0	14.1
fish	2.5	12.1	0.0	0.0	0.0	1.7	3.5	0.0	0.0	1.4

privy. It seems likely that a common first step in the disposal of bones was to discard them on the surface of the ground where dogs and other scavengers had access to them (or perhaps they were regularly given to the dogs).

Slightly more than 13% of the collection exhibits clear evidence of burning. Most of those fragments can be described as calcined; they have turned completely white. Most of the sub-assemblages with more than 15 bones have approximately the same proportion of burned bones as the whole collection. The lowest frequency of burned bones occurs in the surface assemblage from under the shed and from the units adjacent to the house. The highest proportion of burned bones (39%) is in the pre-1914 dump assemblage. This assemblage exhibits the largest proportion of small unidentifiable fragments of mammal bone. This is not surprising, considering the fragmenting effect of intense burning on bones (Lyman 1994). The burning must have been an intense trash disposal fire because it requires temperatures greater than 600 degrees centigrade to calcine or whiten bone fragments (Lyman 1994:386); if it was a

cooking fire, the meat overlying the bone must have been thoroughly destroyed.

The pre-1914 dump appears to be the result of gathering together bones (and other trash). Many, but not all, of the bones were burned; it is unlikely that the fish bones would have survived even incomplete burning. The burning may or may not have taken place in the dump based on the evidence available. In the other subassemblages, it appears that there were two possible first steps in disposal: tossed out on the surface or burned. Some of the bones on the surface could have been collected for burning, but some were not (gnawed bones occur in every assemblage). Burned bones and others (gnawed or otherwise) were occasionally deposited in a privy or dump.

These disposal practices are likely to have had an impact on the surviving faunal collection. Burning and gnawing are density dependent taphonomic processes (Lyman 1994); bones that are denser survive better than bones that are less dense. In the collection as a whole, fragments of dense bone from medium and large mammals are much more common

than the less dense bones of birds, fish, and small mammals. This does not prove that birds and fish are under-represented in the collection (relative to cattle and sheep and the relative amounts actually consumed). However, it does indicate that the small numbers of bird and fish bones could be the result of consumption patterns or disposal practices, or both. The presence of eggshell in many of the assemblages suggests that chickens may be under-represented; but if they were being raised primarily for eggs, it is possible that relatively few chickens were consumed. This analysis proceeds assuming that the relative frequency of beef-sized and pig/sheep-sized bones has not been significantly affected, but that birds and fish probably are at least somewhat under-represented in the faunal collection.

## IDENTIFICATION AND CLASSIFICATION OF THE COLLECTION

### Taxonomic Identification

Relatively few of the recovered bones could be identified to species. Three cow, seven pig, and 30 sheep bones were identified (table 4). Most of the bones are from medium-sized or large mammals and probably represent sheep or cattle. Most of the pig/sheep-sized bones probably are from sheep, considering the relatively low availability of pork in the Northwest described above and considering the size of the bones (somewhat small for pig). A few of the bones are so small that they may be from goats. The frequency of "beef" bones and "pig/sheep" bones is approximately equal in all of the subassemblages except one (table 6). The elevated frequency of beef in the assemblages is the result of one femur fragment that is broken into 24 pieces. The frequency of specific cuts are examined below. Other mammals represented in the collection include a mouse-sized rodent, a couple of rabbits, a possible lynx, and a possible domestic rabbit.

The bird bones are highly fragmented, but most are from chicken-sized birds and probably are from chickens. One or two turkeys, one chicken-sized bird that is not a chicken, and one or two smaller birds are represented. The fish include a couple of trout and a salmonid that is large enough to be a small salmon. One small non-salmonid and a larger fish (perhaps a rockfish, genus *Sebastes*?) complete the fish portion of the collection. Shellfish include butter clam

(*Saxidomus giganteus*), littleneck clam (*Protothaca staminea*), and crab (*Cancer* sp.).

### Butchering Pattern

Most of the fauna represented in the collection probably were purchased from a meat market. Nearly all of the butcher marks are saw cuts and the saw cuts are located in accordance with the contemporary commercial butchering pattern (Levie 1970; Lyman 1977). Carcasses were divided into left and right halves and eventually subdivided into portions that today's shoppers would recognize: steaks, chops, roasts, and so on. (Rombauer and Rombauer Becker 1975:450-452, and Settlement Cookbook Company 1976:267,284, 288, 292). One difference between the butchering pattern evident in this collection and in today's meat counter is that the Skagway butcher frequently missed the middle of the vertebrae as the carcass was divided longitudinally.

Skagway's butchers may have defined the shank differently from how it is defined today. Contemporary butchers do not include the distal metapodial with the shank. There are a number of pig/sheep-sized distal metapodial fragments. The distal metapodial normally is considered butcher waste along with the articulating phalanges. No phalanges were recovered. The presence of distal metapodials and the complete absence of phalanges suggests that the phalanges were not present and that the distal metapodials should not be considered butcher waste.

Using measurements taken from the bones in this collection it is possible to provide a little more detail about a few specific cuts (table 8). Cuts besides those listed in table 8 were not recovered in sufficient numbers to warrant statistical description; measurements were recorded and are listed in the list of faunal identifications. Most of the cuts in the assemblage are very consistent. Round steaks are 13mm thick with a standard deviation of less than 3mm. Short loin steaks (T-bone and porterhouse) are 22.9mm thick with a standard deviation of just more than 7.5mm. Beef ribs are the one element that varies widely. Only ribs with saw cuts at both ends are included here, so the long ribs in rib steaks/roasts are not included. The bones suggest that two kinds of rib cuts are present: short ribs - about 65mm long and back ribs - about 150mm long. A length of 100mm is used in this report to separate short ribs from back ribs.

The pig/sheep cuts are fairly consistent. The greater variation exhibited by the rib category is to be expected given, the variation in the length of ribs in an individual animal. It is interesting to note that the pig/sheep steaks that could not be identified as humerus or femur are thinner than the definite arm chops. More data are needed to ascertain whether they are leg steaks or just arm chops that were cut too thin to permit identification of the bone (my preferred answer at this time).

### Consumption Patterns

As noted above, bones from cattle-sized animals are approximately as common as bones from pig/sheep-sized animals. One might expect this to indicate the consumption of more beef than lamb/mutton because cattle are much bigger than sheep. However, the bones in this collection represent 35% more lamb/mutton/pork than beef (based on the way meat amounts are calculated here - table 9). These calculations used the minimum number of retail cuts represented by the bones and multiplied that number by an average number of pounds of meat per cut. Obviously, there is room for inaccuracy to enter this calculation. However, pig and sheep bones are somewhat less dense than cattle bones; more easily destroyed than cattle bones; and still lamb/mutton/pork is as common or more common than beef.

In Gold Rush Period deposits examined so far, beef is more common than lamb/mutton/ pork with one exception. In both deposits sampled at the Mascot Saloon and in the lower levels at the Peniel Mission, beef outnumbers lamb/mutton/pork almost 3 to 1 (Huelsbeck 1987, 1988). Rhodes (1988) lists almost equal numbers of identified cattle and sheep/pig bones (14:16), but the cattle bones represent more roasts and round steaks, whereas the pig/sheep bones represent more shanks and hocks (1988:281). The lower levels at Block 37 yielded bones representing 28 pounds of beef and 24 pounds of lamb/mutton/pork (Huelsbeck 1988). However, 17 of the 24 pounds are from a pig that probably was raised and butchered on the property. In general, beef was more commonly consumed in gold rush Skagway.

The upper levels at Peniel Mission yielded relatively few bones, but cattle-size bones and beef are more common than lamb/mutton/pork (Huelsbeck 1988; Rhodes 1988). The faunal remains from Block 39 indicate approximately equal amounts of beef and lamb/mutton/pork (in Huelsbeck 1998). The collection of faunal remains from Father Turnell's trash pit may be too small for reliable comparisons, but beef is almost four times more abundant than lamb/mutton/pork (Huelsbeck 1993:47).

**Table 8 - Statistical Description of Selected Retail Cuts**

<b>BEEF</b>			
<b>Bone</b>	<b>Cut</b>	<b>Average Thickness (mm)</b>	<b>Standard Deviation (mm)</b>
femur	round steak	13.275	2.90
lumbar vert.	short loin steak	22.900	7.58
vert. indet.	steak	25.370	9.74
rib		95.250	50.49
rib<100mm	short rib	65.390	10.20
rib>100mm	back rib	147.500	50.49
<b>PIG/SHEEP</b>			
<b>Bone</b>	<b>Cut</b>	<b>Average Thickness (mm)</b>	<b>Standard Deviation (mm)</b>
humerus	arm chop	15.12	4.38
humerus/femur	arm/leg steak	11.08	3.53
vertebra	chop	19.86	4.95
rib	rib	59.29	19.46



Table 9 - Represented Cuts and Meat Weights

Portion	lbs.	A	B	C*	E	F	G	J
<b>BEEF</b>								
steak	1.0	2.0	1.0	14.0	5.0	18.0	7.0	7.0
sirloin steak	3.0	0.0	0.0	6.0	0.0	12.0	3.0	0.0
arm/rnd steak	3.0	0.0	0.0	0.0	15.0	9.0	3.0	0.0
roast	5.0	0.0	0.0	5.0	0.0	10.0	5.0	10.0
short rib	0.5	0.5	0.5	1.5	0.0	2.0	1.0	0.5
back rib	1.5	1.5	1.5	1.5	1.5	4.5	3.0	3.0
shank x-cut	0.5	1.0	0.0	1.5	0.5	1.0	1.5	0.5
neck slice	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.0
<b>Total beef</b>		5.0	3.0	29.5	17.0	57.0	24.0	21.0
<b>PIG/SHEEP</b>								
chop/steak	0.5	3.0	1.5	5.5	0.5	11.5	3.0	5.5
leg	5.0	0.0	5.0	15.0	0.0	10.0	30.0	20.0
half leg	2.5	2.5	2.5	2.5	2.5	0.0	2.5	0.0
roast	3.6	3.6	3.6	10.8	7.2	14.4	7.2	3.6
ribs	0.5	1.0	0.0	0.5	0.0	1.5	0.5	0.5
brisket/breast	3.6	0.0	0.0	3.6	0.0	3.6	0.0	0.0
shank	0.8	3.2	0.0	4.8	1.6	3.2	3.2	1.6
ham hock	1.25	0.0	0.0	2.5	0.0	2.5	2.5	0.0
neck slice	0.25	0.25	0.0	0.5	0.0	0.25	0.5	0.25
pig's feet	0.25	0.0	0.0	0.0	0.0	0.0	0.25	0.0
pig's head	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0
<b>Total pig/sheep</b>		13.6	12.6	45.2	11.8	52.0	49.7	31.5
<b>OTHER</b>								
rabbit	1.5	0.0	0.0	1.5	0.0	3.0	1.5	0.0
chicken	3.0	6.0	3.0	0.0	3.0	18.0	3.0	6.0
turkey	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
other bird	varies	3.0	0.0	0.0	0.0	0.0	0.0	0.0
fish	varies	3.3	1.0	0.0	0.0	7.5	2.5	1.0
clam/crab	.02/.5	0.5	0.0	0.2	0.0	0.6	0.4	.06

\* Subassemblages D, H, and I are omitted here because of small size.

More research is needed to clarify the significance of this pattern but two important factors can be noted. Before 1900-1910, the Northwest produced more beef than lamb/mutton. After 1900-1910, the sheep industry developed rapidly, and the beef industry changed. It seems likely that when detailed statistics on the livestock industry in the Northwest are found,

they will reveal shifts in the relative abundance and relative prices of beef-lamb/mutton around 1910. It also seems likely that more stable transportation (and supply) connections in the post-Gold Rush Period make it easier to "see" individual differences in purchasing power, taste, and so on, in the archeological record.

## FACTORS AFFECTING AVAILABILITY

### Age of Livestock

The history of the Northwest livestock industry suggests that early deposits in Skagway should be dominated by cattle more than 3 or 4 years old and sheep more than 1 or 2 years old. After 1910-1920, most of the cattle should be less than 2 or 3 years old, and the frequency of lamb (sheep less than 1 year old) should increase. There are too few ageable bones from the pre-1914 deposits at the Moore House to evaluate the average age of cattle and sheep. The later deposits yielded enough data to discuss, but the picture is less certain than might be desired. There are 16 cattle bones where epiphyseal fusion could be evaluated. One bone is from an animal more than 5 years of age. Ten bones are from animals less than 5 years, 4 bones are from animals less than 3.5 years, and 1 is from an animal less than 1.5 years old (Silver 1970). There are 2 sheep bones (sheep-sized are included here) that definitely are from lambs less than 1 year old. There are 6 bones definitely from sheep more than 1 year, including 1 more than 3 years old and 1 more than 5 years old. Another 23 sheep bones are ageable, but indicate animals younger than 5, 3.5 and 2 years. Ten of these are from animals more than 3 - 6 months old (Silver 1970). My guess is that many of these bones are from sheep more than 1 year old, but this guess cannot be demonstrated at this time. Meat packing and/or shipping records may shed some light on this issue.

Age patterns based on osteological data from other Skagway deposits are similarly hampered by small samples. The Mascot Saloon assemblages yielded only animals more than 1 year old (Huelsenbeck 1987). The Peniel Mission site gold rush deposits yielded one sheep definitely more than 3 years old, and 10 bones from animals more than 1 and/or under 3 years of age (Huelsenbeck 1988). The Block 39 deposits yielded sheep that are under 2 or 3 years of age (but older than 1?), and one cattle bone from an individual older than 1 or 1.5 years. It would appear that lamb and young beef cattle were available after 1910, at least to the relatively well-off occupants of the Moore House. It also is clear that mutton and beef from older cattle was being consumed in Skagway after 1910.

### Local Production

There is very little evidence that conclusively demonstrates local animal husbandry in the Moore House faunal assemblage. The collection contains sheep and sheep-sized bones (distal metapodials and tarsals) that are normally discarded as butcher waste today. This author would expect phalanges to be recovered if this was home butchering but they were not. In addition, if sheep were raised and butchered on the property, professional tools and technique were employed in the process (unlike at Block 39). However, given the presence of very young and very old individuals, the possibility of home-raised livestock (and professional butchering) perhaps cannot be conclusively ruled out.

The presence of chicken cranial elements and eggshell that probably is chicken suggests strongly that chickens were being raised. Chicken cranial and foot elements and eggshells have been recovered during excavations elsewhere in Skagway, but not everywhere (not in Father Turnell's trash pit for example). Meat markets may have sold whole chickens, so the evidence is persuasive but not conclusive. If the tentative identification of domestic rabbit in the early Moore privy is accurate, this may be evidence of locally produced meat (a pet wouldn't be buried in a privy??). The faunal assemblage from Block 37 (Huelsenbeck 1988) contained 17 pig bones, none of which exhibited saw marks. Other faunal remains in the assemblage did bear saw cuts. This was interpreted as a home-butchered and probably home-raised pig.

The Moore House faunal assemblage contains very few wild food animals. There are a few fish, shellfish, birds, and rabbits. Bones from non-domesticated species are present in all of the faunal assemblages from Skagway that have been examined so far. Fish, bird, and rabbit bones are fragile compared to cattle and sheep bones. These animals may have contributed a larger portion of the diet than is indicated by the faunal remains, but it is likely that beef and mutton were the most common meats consumed in Skagway.

### Overall Availability

The historic evidence summarized above suggests that beef and mutton would have been more commercially available in Skagway than pork during the first

couple of decades of Skagway's existence. Beginning around 1910, lamb and mutton should have become more available; pork somewhat more available; and the beef, while readily available, should have come from younger animals. The faunal remains support this picture in general, but mutton and beef from older cattle is still very common after 1910. It may be that Skagway's small size and distance from production centers made it possible for producers to send lower quality animals north more often. Raising some food animals locally and hunting and fishing also affected the availability of meat consumed in Skagway.

### FACTORS AFFECTING CHOICE

A great many factors, including personal taste, can impact the choice of different kinds of meat and meat cuts. As described above, religion and ethnicity have not been identified as factors affecting choice in faunal analyses of Skagway. Foodways and purchasing power have been so identified.

The pre-1914 assemblages under consideration here are very small. They contain a mix of single serving cuts and multiple serving cuts (table 10). Cuts requiring longer cooking times are somewhat more common than cuts that can be fried. In the post-1914 deposits, both single serving and multiple serving cuts are represented, and cuts that can be fried (steaks and chops) account for almost 50% of the collection. The Moore House assemblage, like the Block 39 assemblage, falls somewhere between Father Turnell's emphasis on single serving portions

and the Mascot Saloon's emphasis on boiling/multiple serving cuts.

The post-1914 Moore House assemblage does differ somewhat from the Block 39 assemblage in spite of the similarity in foodways. Relatively fewer beef-steaks and more roasts and round steaks were recovered from Block 39 than from the Moore House. Rib, T-bone, and porterhouse steaks usually are more expensive per pound than round steaks and roasts, so differences in purchasing power may be indicated. However, this calculation is based on numbers of retail cuts and does not consider the different quantities of meat associated with those cuts.

Calculating the pounds per cost preference category yields a somewhat different picture (table 11). Slightly more of the Moore House purchased beef was in the highest price category, 4% more than Block 39, but, somewhat more of the lamb/mutton purchased by the residents of Block 39; was from the two highest price categories, almost 10% more than at the Moore House. The final interpretation here hinges on whether lamb/mutton was more or less expensive than beef. Nearly equal quantities of beef and lamb/mutton are represented by the Block 39 collection, but the Moore House faunal assemblage represents almost 25% more lamb/mutton than beef. In Chicago, lamb was somewhat more expensive than beef until about 1930 and then less expensive through 1945. If beef was less expensive, then the Moore House assemblage suggests greater purchasing power than the "middle-class" Block 39 assemblage because more lamb/ mutton was consumed.

**Table 10 - Cuts and Cooking Method, Percentages**

	Pre-1914 Moore		Post-1914 Kirmse		Block 39	
	Beef	Pig/sheep	Beef	Pig/sheep	Beef	Pig/sheep
steak/chop (fry)	33.3	35.3	47.7	45.5	34.5	52.2
roasts	16.7	7.6	12.1	28.9	20.0	30.4
round steak (moist heat)	0.0	----	10.2	----	14.5	----
shank/rib (in liquid)	50.0	47.1	30.0	25.6	31.0	17.4

Table 11 - Meat per Cost Preference Category

Moore House post-1910			Block 39 post-1910	
Category	Pounds	Percentage	Pounds	Percentage
		<b>BEEF</b>		
steak/sirloin	75.0	43.9	23.0	40.0
rnd stk/roast	63.0	36.8	25.0	43.5
ribs/brisket	27.0	15.8	7.5	13.0
shank/neck	6.0	3.5	2.0	3.5
Subtotal	171.0		57.5	
		<b>PIG/SHEEP</b>		
chop/steak	27.5	13.0	12.0	19.8
leg/roast	145.4	68.8	43.8	72.4
ribs/brisket	10.2	4.8	---	0.0
shank/hock	24.7	11.7	4.0	6.6
neck/feet	3.5	1.7	0.7	1.2
Subtotal	211.3		60.5	

- Moore House figures include meat from assemblages D and I, not listed in table 9.
- Block 39 beef shanks counted as entire shanks in Huelsbeck 1994, here are counted as shank cross-cuts, 1 pound, not 10 pounds, each.

The situation may be more complicated than can be assessed by comparing average beef and lamb prices. Maybe high-cost cuts of beef cost more than high-cost cuts of lamb or mutton. More specific information is needed. It is clear, however, is that the residents of the Moore House and the residents of Block 39 exercised their purchasing power differently.

### SUMMARY AND CONCLUSIONS

A total of 663 bone fragments and 52 shellfish shell fragments were recovered during excavation on the property around the Moore House. Most of these faunal remains are associated with the Kirmse occupation of the property (post-1914), but a few are associated with the Moores (pre-1910).

### Taphonomy

A variety of recovery techniques were employed yielding comparable recovery rates of small, low density faunal remains; it is unlikely that significant quantities of small fragile remains were "missed" during excavation.

Disposal practices did have an impact on the bones that survived to be collected. Bones were gnawed, broken, and burned. These are density-dependent functions and undoubtedly affected bird and fish bones more than cattle and sheep bones. It seems likely that these small taxa are somewhat under-represented compared to the medium and large mammals when amounts of represented meat are calculated.

### Identification and Classification

Most bones could not be identified to species but they could be attributed to animal size classes. Based

on specific identifications here and in other Skagway archeofaunas, it is likely that most of the bones from large animals are from cattle and that most of the bones from medium-sized animals are from sheep. The butchering pattern employed by Skagway's butchers differed only a little from the contemporary butchering pattern, even the dimensions of retail cuts appear to be very similar to those of today. Meat consumption patterns in Skagway varied through time and space. Using the number of identified bones as the measurement suggests that beef and pig/sheep are equally common; but when the meat represented by the minimum number of retail cuts is considered, differences emerge. In Gold Rush Period deposits, beef is more common except at Block 39, where bones from one probably home-raised and butchered hog tip the balance to pig/sheep. Post-gold rush deposits are better represented by excavated faunal assemblages; and here, too, variation in quantities of represented meat is evident. Beef is much more common in the upper levels at the Peniel Mission, about equal to lamb/mutton/pork at Block 39 and less common at the Moore House.

### **Availability**

At the time of the gold rush, the livestock industry in the Northwest produced more beef than mutton and produced few lambs or hogs. By 1920, the industry was shifting to more sheep, younger sheep and cattle, and slightly more hogs. Age data from the bones suggest that these changes were apparent in Skagway, but Skagway probably lagged behind the contiguous 48 states in these trends. The increasing availability of sheep probably had an impact on meat consumption in Skagway but this effect is complicated by factors affecting choice.

Some meat was produced in Skagway according to the zooarcheological evidence. The occupants of the Moore House probably kept chickens, but there is little in the faunal remains to suggest that other

animals were raised there. A small number of wild animals are represented in the faunal collections; it is unknown whether they were purchased or captured.

### **Choice**

None of the zooarcheological studies of Skagway collections has yielded indications that ethnicity or religion affected meat consumption patterns. Foodways, preferences for certain food preparation techniques, were observed. Cuts requiring lengthy moist heat are common in gold rush deposits, especially at the Mascot Saloon where they are thought to have been the basis of free lunches for saloon patrons. Father Turnell preferred single serving cuts, and the residents of Block 39 and the Moore House consumed a mixture of large and small cuts requiring a variety of cooking techniques.

Differences in purchasing patterns were observed, and these may be related to purchasing power. The relatively well-off Jesuit priest, Father Turnell, purchased more of the more expensive cuts. The residents of Block 39 appear rather "middle-class" in their purchases. The Kirmsees, living at the Moore House, purchased more expensive beef and less expensive lamb/mutton compared to the residents of Block 39. This could reflect differences in taste, and/or it may have a clear economic connection when more specific information concerning relative prices of beef/lamb/mutton is available.

### **Conclusion**

The analysis of the faunal remains from the Moore House and elsewhere in Skagway has provided a great deal of information about life in Skagway. Like most archeological data sets, these analyses also raise many questions. Perhaps many of these questions will be answered in other data sets. I hope that zooarcheological "answers" will be supported by other analyses.



## REFERENCES CITED

Adams, William Hampton, and David R. Brauner

- 1991 *Archaeological Overview of Skagway, Alaska*. Report on file, Klondike Gold Rush National Historical Park, Skagway, Alaska.

Brewer, Douglas J.

- 1992 Zooarchaeology Method, Theory, and Goals. In, *Archaeological Method and Theory*, volume 4:195-244, edited by Michael Schiffer, University of Arizona Press, Tucson.

Bureau of the Census

- 1976 *Historical Statistics of the U.S., Colonial Times to 1970*. U.S. Department of Commerce, Washington, D.C.

Crabtree, Pam S.

- 1985 Historic Zooarchaeology: Some Methodological Considerations. *Historical Archaeology* 19(1):76-78.
- 1990 Zooarchaeology and Complex Societies: Some Uses of Faunal Analysis for the Study of Trade, Social Status, and Ethnicity. *Archaeological Method and Theory* 2:155-205, edited by Michael Schiffer, University of Arizona Press, Tucson.

Fahey, John

- 1986 *The Inland Empire: Unfolding Years 1879-1929*. University of Washington Press, Seattle.

Farrar, Victor

- 1923 Historical Summary. In *The Economic Resources of the Pacific Northwest*, pages 21-45. Edited by H. Lewis and S. Miller. Lowman and Hanford Co., Seattle.

Hattori, Eugene M., and Jerre L. Kosta

- 1990 Packed Pork and Other Foodstuffs from the California Gold Rush. In *The Hoff Store Site and Gold Rush Merchandise from San Francisco, California*, edited by Allen G. Pastron and Eugene M Hattori. Special Publication Series No. 7:82-93. Society for Historical Archeology, California, Pennsylvania.

Henry, Susan L.

- 1983 Dietary Patterns. In *City of Phoenix, Archaeology of the Original Townsite, Block 28-North*, pages 353-378, edited by John S. Cable, Susan L. Henry, and David E. Doyel. Soil Systems Publications in Archeology Number 2.

Hickman, C.W.

- 1923 The Livestock Industry of the Northwest. In *The Economic Resources of the Pacific Northwest*, pages 69-98, edited by Howard T. Lewis and Stephen I. Miller. Lowman and Hanford, Seattle.

Huelsbeck, David R.

- 1987 Faunal Remains from the Mascot Saloon Site. Manuscript on file, National Park Service, Skagway.
- 1988 Faunal Remains from Two Sites in Skagway. Manuscript on file, National Park Service, Skagway.

- 1989 Zooarchaeological Measures Revisited. *Historical Archaeology* 23(1):113-117.
- 1991 Faunal Remains and Consumer Behavior. What Is Being Measured? *Historical Archaeology* 25(2):62-76.
- 1993 Faunal Analysis in *Archaeological Investigations in Skagway, Alaska, Volume 4: Father Turnell's Trash Pit*, Klondike Gold Rush National Historical Park, Skagway, Alaska, by Catherine Holder Spude, Douglas D. Scott, Frank Norris, David R. Hulesbeck (sic), Linda Scott Cummings, and Kathryn Puseman. U.S. Government Printing Office, Denver.
- 1994 Faunal Remains from Block 39, Skagway, Alaska. Manuscript on file, National Park Service, Skagway, Alaska.
- 1998 Faunal Remains from Block 39, Skagway, Alaska. Appendix 3 in *Archaeological Investigations in Skagway, Volume 6: Residential Life on Block 39*. U.S. Department of the Interior, National Park Service, Skagway, Alaska.

Jolley, Robert L.

- 1983 North American Historic Sites Zooarchaeology. *Historical Archaeology* 17(1):64-79.

Landon, David B.

- 1996 Feeding Colonial Boston: A Zooarchaeological Study. *Historical Archeology* 30(1).

Levie, Albert

- 1970 *The Meat Handbook*. Avi Publishing, Westport, Connecticut.

Lyman, R. Lee

- 1977 Analysis of Historic Faunal Remains. *Historical Archaeology* 11:67-73.
- 1979 Available Meat from Faunal Remains: A Consideration of Techniques. *American Antiquity* 44(3):536-546.
- 1982 Archaeofaunas and Subsistence Studies. *Advances in Archaeological Method and Theory* 5:331-393, edited by Michael Schiffer, Academic Press, New York.
- 1987a Archaeofaunas and Butchery Studies: A Taphonomic Perspective. *Advances in Archaeological Method and Theory* 10:249-337, edited by Michael Schiffer, Academic Press, New York.
- 1987b On Zooarchaeological Measures of Socioeconomic Position and Cost-Efficient Meat Purchases. *Historical Archaeology* 21(1):58-66.
- 1994 *Vertebrate Taphonomy*. Cambridge University Press, Cambridge.

Merriam, Willis B.

- 1942 Livestock in the Pacific Northwest. In *The Pacific Northwest*, pages 398-410, edited by Otis W. Freeman and Howard H. Martin. John Wiley and Sons, New York.

Rombauer, Irma, and Marion Rombauer Becker

- 1975 *Joy of Cooking*. Bobbs-Merrill Co., New York.

Rhodes, Diane Lee

- 1988 *Archaeological Investigations in Skagway, Alaska, Volume 3: The Peniel Mission and the Mill Creek Dump*. Klondike Gold Rush National Historical Park. U.S. Government Printing Office, Denver.

Ross, Eric B.

- 1980 Patterns of Diet and Forces of Production: An Economic and Ecological History of the Ascendancy of Beef in the United States Diet. In *Beyond the Myths of Culture: Essays in Cultural Materialism*, pages 181-225, edited by Eric Ross. Academic Press, New York.

Schmitt, Dave N., and Charles D. Zeir

- 1993 Not by Bones Alone: Exploring Household Composition and Socioeconomic Status in an Isolated Mining Community. *Historical Archaeology* 27(4):20-38.

Schultz, Peter D.

- 1979 Historical Faunal Remains from Panamint City: Notes on Diet and Status in a California Boom Town. *Pacific Coast Archaeological Quarterly* 15(4):55-63.

Schulz, Peter D., and Sherri M. Gust

- 1983a Faunal Remains and Social Status in 19<sup>th</sup>-Century Sacramento. *Historical Archaeology* 17(1):44-53.  
1983b Relative Beef Cut Prices in the Late Nineteenth Century. A Note for Historic Sites Faunal Analysis. *Pacific Coast Archaeological Society Quarterly* 19(1):12-18.

Settlement Cookbook Company

- 1976 *The Settlement Cookbook*, third edition/newly revised. Simon and Schuster, New York.

Silver, I.A.

- 1970 The Aging of Domestic Animals. In *Science in Archaeology*, edited by Don Brothwell and Eric Higgs, pp. 283-302.



## APPENDIX 7 - Pollen, Phytolith, and Parasite Analysis of Privy, Dump, and Yard Deposits from Moore House Site

Linda Scott Cummings and Thomas E. Moutoux  
Paleo Research Laboratories, Denver, Colorado

Paleo Research Labs Technical Report 97-56, December 1997

### INTRODUCTION

Privies associated with Moore House and Kirmse House, as well as trash dumps, were examined for pollen, phytoliths, starch granules, and/or parasites. Ten pollen/parasite samples were examined to identify foods and medicines that may have been ingested. Weeds, cultivated plants, and native vegetation also are expected to be visible in these samples. Evidence of parasite eggs was sought to identify any parasitic infestation that might have been present. Two trash deposits also were examined for phytoliths to increase our knowledge of plants present and possibly discarded.

### METHODS

#### Pollen

A chemical extraction technique based on flotation is the standard preparation technique used in this laboratory for the removal of pollen from the large volume of sand, silt, and clay with which they are mixed. This particular process was developed for pollen extraction from soils where preservation has been less than ideal and pollen density is low.

Hydrochloric acid (10%) was used to remove calcium carbonates present in the soil, after which samples were screened through 150-micron mesh. The samples were rinsed until neutral by adding water, letting the samples stand for 2 hours, then pouring off the supernatant. A small quantity of sodium hexametaphosphate was added to each sample once it reached neutrality; then the beaker was again filled with water and allowed to stand for 2 hours. The samples were again rinsed until neutral, filling the beakers only with water. This step was added to remove clay before heavy liquid separation.

Then samples were dried then pulverized. Zinc bromide (density 2.1) was used for the flotation process. The samples were mixed with zinc bromide and centrifuged at 1500 rpm for 10 minutes to separate organic from inorganic remains. The supernatant containing pollen and organic remains was decanted and diluted. Zinc bromide was again added to the inorganic fraction to repeat the separation process. After rinsing the pollen-rich organic fraction obtained by this separation, all samples received a short (20 minute) treatment in hot hydrofluoric acid to remove any remaining inorganic particles. The samples were then acetolated for 3 minutes to remove any extraneous organic matter.

A light microscope was used to count pollen to a total of 53 to 202 pollen grains at a magnification of 400-600x. Pollen preservation in those samples varied from good to poor. Comparative reference material collected at the Intermountain Herbarium at Utah State University and the University of Colorado Herbarium was used to identify pollen to the family, genus, and species level, where possible.

Pollen aggregates were recorded during identification of the pollen. Aggregates are clumps of a single type of pollen, and may be interpreted to represent pollen dispersal over short distances, or the introduction of portions of the plant represented into an archeological setting. Aggregates were included in pollen counts as single grains, as is customary. The presence of aggregates is noted by an "A" next to the pollen frequency on the pollen diagram. A plus (+) on the pollen diagram indicates the pollen type was observed outside the regular count while scanning the remainder of the microscope slide. Scanning was particularly important in an effort to observe parasite eggs.



Indeterminate pollen includes pollen grains that are folded, mutilated, and otherwise distorted beyond recognition. These grains are included in the total pollen count, as they are part of the pollen record.

### Phytoliths

Extraction of phytoliths from these sediments also was based on heavy liquid floatation. Approximately 50 ml of sediment was added to 50 ml of sodium hexametaphosphate (0.1 molar solution) to suspend the clays. The sample was then sieved through 150-micron mesh. The sample was allowed to settle for two hours; then the supernatant was poured off, which contained clay. This settling time allowed the phytoliths to settle to the base of the beaker. The samples were mixed with water, allowed to settle for two hours, and the supernatant discarded several times, until the supernatant was clear. Liquid bleach was added to the sample and allowed to sit overnight to destroy the organic fraction in the sample. Rinses were continued to remove the bleach, then the remaining clays. The last two times the sample was allowed to settle, the time was reduced to one hour. This procedure removed most of the clays. Once most of the clays were removed, the silt and sand size fraction was dried. The dried silts and sands were then mixed with zinc bromide (density 2.3) and centrifuged to separate the phytoliths, which float, from the other silica, which do not. Phytoliths, in the broader sense, may include opal phytoliths and calcium oxalate crystals. Calcium oxalate crystals are formed by *Opuntia* (prickly pear cactus) and are separated rather than destroyed, using this extraction technique, since it employs no acids. If calcium carbonates are present, use of glacial acetic may be employed to dissolve calcium carbonates without destroying any calcium oxalates present. Any remaining clay was floated with the phytoliths and further removed by mixing with sodium pyrophosphate and distilled water. The samples were then rinsed with distilled water, then alcohol to remove the water. After several alcohol rinses, samples were mounted in Cinnamaldehyde for counting with a light microscope at a magnification of 500x.

## ETHNOBOTANICAL REVIEW

Historic records provide information concerning use of plants by people living in the last few centuries. Some of this information is drawn from accounts

documenting Native American uses of plants, while other accounts document Anglo plant use. Ethnographic sources outside the study area were consulted to permit a more exhaustive review of potential uses for each plant. For this privy study, pollen was sorted into groups that represent probable weedy plants, probable medicinal plants, and probable foods.

### Weedy Plants

Muensch (1987:3) describes weeds as "those plants that grow where they are not wanted. Whether a plant of a given species is considered a weed depends not only on its characteristics and habitats, but also on its relative position with reference to other plants and man." Weeds are often able to thrive in diverse and adverse circumstances. They are commonly found in disturbed places or places undesirable to other plants. Many weed species produce enormous quantities of seeds, and these seeds are often widely dispersed. Other weed species are capable of reproducing vegetatively. These factors combine to produce a plant that is very successful in competition with other plant species. The word "weed" is assigned here to those plants that exhibit weedy characteristics and were most likely not eaten by the users of this privy.

### Low-spine Asteraceae

Low-spine Asteraceae includes *Ambrosia* (ragweed), *Iva* (sumpweed), and *Xanthium* (cocklebur). Of these plants, *Ambrosia* is the most likely in this setting. Ragweed (also wild tansy, hogweed, bitterweed, mayweed, hay fever weed, and blackweed) is an annual that grows in cultivated fields, old meadows, pastures, waste places, and gardens. Ragweed pollen is responsible for many cases of fall hayfever (Muensch 1987:423-425).<sup>1</sup>

### Brassicaceae (Mustard Family)

Wild mustards may be found in waste places, grain fields, pastures, neglected fields, cultivated areas, in ditches, and along banks of streams. The Brassicaceae pollen recovered from this privy was small and finely reticulated, which is more characteristic of weedy mustards than cultivated members of this family, which are discussed under foods (Martin 1972:64-65; Muensch 1987:232-236).

***Erysimum* (Worm-seed mustard, Treacle mustard, Spreading mustard)**

Two species of winter annual or annual plants (*E. cheiranthoides* and *E. repandum*) have been introduced from Europe. They often grow in “grain fields, new meadows, cultivated fields and gardens” and on gravelly or sandy soils, in lawns, and in waste places (Muenscher 1987:246-247). *Erysimum cheiranthoides* is noted to be widespread across the northern United States and southern Canada, while *E. repandum* grows farther south from Washington and Oregon to California and spreading across to the Atlantic states (Muenscher 1987:246-247).

**Liguliflorae (Dandelion, Chicory, and so on)**

Members of the Liguliflorae or Chicory tribe of Asteraceae include such plants as dandelion, chicory, and prickly lettuce. These plants may be weedy annuals, biennials, or perennials and grow in a variety of disturbed grounds. *Lactuca* (prickly lettuce, milk thistle) also includes the cultivated lettuce. Most species within the Liguliflorae are weedy, herbaceous plants found in a variety of habitats, some of which include cultivated fields, meadows, waste places, old fields, pastures, gardens, and lawns (Muenscher 1987:422, 480-484).

***Polygonum* (Knotweed, Smartweed)**

*Polygonum* includes both knotweed and smartweed. These plants contain an acrid juice that causes smarting. Most species are annuals, but a few are perennials. The peppery leaves of certain species may be eaten raw in salads or cooked like spinach. *Polygonum* can become troublesome weeds, but are important foods for songbirds, gamebirds, and waterfowl. *Polygonum* species are partial to moist soils in pastures and cultivated fields, along ditches, and on trampled ground about yards, paths, roadsides, and waste places. *Polygonum aviculare* (knotweed) grows on seashores and in salt marshes, as well as in both alkaline and non-saline soils inland (Fernald 1950:580; Kirk 1975:56; Martin 1972:40-42; Muenscher 1987).

***Rumex* (Dock, Sorrel)**

*Rumex* (dock, sorrel) are mostly perennials with edible leaves and leaf stems. Some species are native to the United States, while others were introduced from Europe. *R. acetosa* (sour dock, garden sorrel) is a European dock that is sometimes grown in gardens

as a potherb. Native species sometimes become weeds in meadows and pastures, especially on low, wet ground. *Rumex* plants are widespread in meadows, pastures, fields, lawns, swampy or marshy places, and along roadsides (Martin 1972:38-39; Muenscher 1987:172-180).

***Trifolium* (Clover)**

Many species of *Trifolium* (clover) have been introduced from Europe, although others are native to North America. *T. repens* (four-leaf clover) is a familiar weed found in lawns. *T. pratense* is one of the most common perennial clovers and is planted as a hay and pasture crop. Clovers are high in protein and may be eaten raw, but are best when boiled or soaked in salt water for several hours. A tea may be made by steeping dried flowers in hot water. Clovers are found in a variety of habitats including old fields, roadsides, prairies, dry woods, gardens, and lawns (Kirk 1975:100-101; Martin 1972:67; Niering and Olmstead 1979:540-542; Peterson 1977:56).

**Valerianaceae (Valerian Family) and Dipsacaceae (Teasel Family)**

Valerianaceae includes *Valerianella* (corn-salad, lambs lettuce, milk-grass) as the primary weedy plant. This winter annual or biennial may be found in meadows, pastures, old fields, and waste places. It was introduced from Europe as a salad plant. *Dipsacus* (teasel, card teasel, Venus-cup, card thistle, gipsy-combs), *Knautia arvensis* (*Scabiosa arvensis*) (field scabious), and *Succisa* (Devils-bit, Southern scabious) represent the Dipsacaceae. *Dipsacus* was introduced from Europe and grows as a biennial in pastures, old fields, and waste places. It is most abundant in the northeastern United States and south to North Carolina, Tennessee, and

Missouri. It grows infrequently in western United States to the Pacific Coast. *Knautia*, a perennial, is found in old fields, meadows, pastures, and waste places and prefers dry, gravelly, or stony soils. It is most common from Newfoundland to North Dakota, south to New England and Pennsylvania, and also was introduced from Europe. *Succisa australis* (Devils-bit, Southern scabious) is a perennial preferring moist, sandy, or gravelly meadows. It is widespread in the northeastern United States and was introduced from Europe.

## **Foods and Medicines**

### **Apiaceae (Celery family)**

The Apiaceae (celery) family contains about 275 genera, several of which originated in the Mediterranean region. This family contains a number of plants of economic importance. *Pastinaca sativa* (parsnip) is valued as a vegetable. *Petroselinum crispum* (parsley), *Foeniculum vulgare* (fennel), *Anthiscus cerefolium* (chervil), and *Anethum graveolens* (dill) are cultivated for their leaves as spices, and *Apium graveolens* (celery) for its blanched leaf-stalks. Several members are valued for their “seeds” for use as flavoring, including dill, fennel, celery, *Carum carvi* (caraway), *Pimpinella anisum* (anise), *Coriandrum sativum* (coriander), and *Cuminum cyminum* (cumin). These “seeds” are not really seeds, but complete fruits. *Centilla*, *Bupleurum* (thoroughway), and *Angelica* are useful medicinal plants. Other members of the family are common weeds and wild-flowers (Hickey and King 1981:298; McGee 1984:206-208; Niering and Olmstead 1979; Ody 1993). *Daucus carota* (wild carrot, Queen Anne’s lace) is the ancestor of the garden carrot. The cultivated varieties have larger and fleshier roots than the wild forms and are eaten fresh or cooked as vegetables. *Daucus carota* is a biennial that was introduced from Eurasia. The plant is now widespread throughout North America and is considered a troublesome weed. *Daucus* can be found growing wild in old meadows, pastures, dry fields, and waste places (Hedrick 1972:232; Muenscher 1987:325-327; Niering and Olmstead 1979:330).

### ***Artemisia* (Wormwood, Mugwort, Absinthe)**

*Artemisia* (wormwood, mugwort, absinthe) may be a perennial or annual weed growing in waste places, gardens, and/or cultivated fields. *Artemisia* has been used to promote uterine evacuations, for amenorrhoea, and hysteria. German physicians have used mugwort for epilepsy. Wormwood has been used as a stomach tonic and an anthelmintic. It aids digestion and is helpful against flatulence. Apparently, its virtues also include action against putrefaction and as an antacid. Wormwood also has been used for such conditions as hypochondriasis, gout, scurvy, calculus, and hepatic and splenic obstructions. Wormwood also has been used as a diuretic, discutient, and an antispasmodic in epilepsy. Wormwood and vinegar have been used to treat wounds, bruises, and sprains, apparently lessening the pain. In addition, brewers are said to have added wormwood

fruits, which are very bitter, to their hops to make beer headier. Absinthe was used to make a stimulating beverage, particularly when combined with other aromatic plants. One such liqueur was named “Wermuth” (preserver of mind). However, drinking absinthe liqueur apparently lead to addiction, which often produced tremblings, numbness, loss of muscular power, delirium, loss of intellect, general paralysis, and sometimes death. Inferior absinthe generally was adulterated with copper, producing a green color. It is likely that the symptoms associated with drinking too much absinthe resulted from copper poisoning. Wormwood also had a reputation of driving away fleas, moths, and insects. The plant was collected when in seed and scattered on the floor to prevent fleas. It was laid with clothes and furs to keep away moths and insects. Wormwood also was used to counteract the effects of poisoning by hemlock, toadstools, and seadragon bites (Grieve 1981:858-861; Millsbaugh 1974:344-350; Muenscher 1987:430-432).

### ***Citrus* (Bergamot, Citron, Grape fruit, Lemon, Lime, Orange, Pummelo)**

The genus *Citrus* encompasses many different plants. With the exception of recent hybrids such as grapefruit, members of the citrus family are native to Southeast Asia and were first cultivated in India. Oranges were introduced to Arabia from India during the ninth century, then were carried westward by the Moors during or shortly after the eleventh century. Crusaders found various citrus fruits to be abundant in Palestine; and during the fourteenth century, oranges and lemons were common in Italy. Citron, now known only in candied form, was brought to Europe by Alexander the Great during the third century B.C. *Citrus* must have been an early introduction to the New World, since Humboldt (1889 Vol.3:171) in Hedrick (1972:173) notes “it would seem as if the whole island of Cuba had been originally a forest of palm, lemon and wild orange trees.” In 1791, Bartram (1791) in Hedrick 1972:174) reports oranges growing abundantly in Florida. Father Baegert reports oranges in both Louisiana and California in 1751. Bergamot was noted as being important in the perfume industry. Some *Citrus*, such as tangerine and mandarine, may have been imported from Asia. Kumquats were cultivated in China and Japan. *Citrus* contain little starch, so they don’t sweeten much after picking. Color change is triggered by cold weather while the fruit is still on the

tree; consequently, fruit grown in the tropics remain green. Vitamin C content is highest in the skin and albedo (white layer under the skin), and much lower in the juice (Hedrick 1972:173-176; McGee 1984:181-182).

### ***Eugenia* (Clove)**

*Eugenia* (clove) is an evergreen tree that is a member of the Myrtaceae family and a native to the Moluccas. The cloves, commonly used as a spice in cooking, are the unexpanded flower buds of this tree. Cloves originally were known throughout the Mediterranean countries. Cloves were imported into Europe during the Middle Ages and were sold at Frankfurt, Germany, around 1450 (Hedrick 1972:259). Cloves may be used in a variety of ways, including baking, seasoning hams, and in the preparation of foods, such as spaghetti and lasagna.

### ***Fragaria* (Strawberry)**

*Fragaria* (strawberry) is found growing naturally in both Eurasia and the Americas, with the American varieties producing larger berries. In the eighteenth century, a French engineer named Frezier brought some of the large American species back to Europe and began breeding today's modern varieties (McGee 1984:183-184). Wild strawberries are smaller and more flavorful than the domesticated ones. The leaves and berries are rich in Vitamin C, and a leaf tea was used to prevent scurvy and to treat diarrhea. Crushed wild strawberries also were once used to whiten the complexion, remove freckles, and to treat mild sunburn (Ody 1993:60). Wild strawberries are perennial herbs found in meadows, fields, woods, hillsides, and forest edges (Angell 1981:20; Kirk 1975:90). Strawberries are commonly eaten fresh, or cooked in pies, jams, jellies, and preserves.

### **Lamiaceae (Mint Family)**

The Lamiaceae (mint) family consists of about 180 genera of terrestrial herbs or undershrubs. This family is characterized by square stems and hair-like oil glands on the surfaces of leaves and stems, which are often used as flavorings. Many genera are grown as culinary herbs and are used for flavoring, including *Mentha* (mint), *Salvia officinalis* (sage), *Thymus vulgaris* (thyme), *Satureja* (savory), *Ocimum basilicum* (basil), *Hyssopus officinalis* (hyssop), *Majorana hortensis* (marjoram), and *Rosmarinus* (rosemary). Distillation from rosemary, *Lavendula* (lavendar), and *Pogostemon* (patchouly) is used to

obtain oils and perfumes. Many species also were used medicinally. *Leonuris* (motherwort) is a perennial herb that was introduced from Europe. It is reported to have sedative, hypotensive, and antispasmodic effects, and has been used to treat insomnia, neuralgia, spasms, fevers, and stomachaches. A leaf tea was used as an aid in childbirth, for asthma, and for heart palpitations. *Leonuris* is often found growing as a weed in pastures, waste places, and along roadsides (Fernald 1950:1228; Foster and Duke 1990:162; Krochmal and Krochmal 1978:136).

### **Cereal (Wheat and other Cereal Grains)**

Cereal grains include such diverse grains as wheat, rye, barley, and oats. *Triticum* (wheat) was one of the first cultivated plants, and it was the most important cereal in ancient Mediterranean civilizations. Today, there are over 30,000 varieties of wheat, and it is the most widely cultivated plant in the world. Early wheat was parched, ground, and made into a gruel. It also was fermented to make a type of beer. The Spanish brought wheat to Mexico in 1529, where it spread as an agricultural crop among the native peoples. Wheat grows best in cool weather, so crops could be grown in winter during the traditionally scarce time of year. Wheat is used for making bread because wheat's storage proteins form a complex called gluten when they are ground up and mixed with water. Gluten makes the dough stick together and gives it the ability to retain gases, resulting in the ability to make raised bread. The three types of modern wheat most commonly grown are based on hardness of the kernel, which is a measure of protein content. Durum semolina is the hardest and is used to make pasta products. Hard flour contains little free starch and is used for bread. Soft flour has high starch content and weak gluten and is used for pastries, biscuits, cookies, and cakes (Heiser 1990:63-74; McGee 1984:234, 285-285). Barley (*Hordeum vulgare*) was one of the first plants domesticated in the Near East. In addition to being a valuable food for both humans and animals, barley is important in making malt for brewing and distilling. Rye (*Secale cereale*) and oats (*Avena sativa*) are more recent domesticates. Rye usually is mixed with wheat to make bread, since it has too little gluten to make good bread alone. Oats are highly nutritional, containing 15-16 percent protein and approximately 8 percent oils. Oats have been a popular breakfast cereal and an important animal feed, particularly for horses (Heiser 1990:106-108).



***Vitis* (Grape)**

*Vitis* (grape) is a native of Asia Minor and North America that has been cultivated for wine and table grapes. The Egyptians are believed to have first cultivated grapes 6,000 years ago. The majority of wines and table grapes are made from varieties of the European *Vitis vinifera*. American jelly, grape juice, and northeastern wines are made from Concord grapes, a variety of the American *Vitis labrusca* (McGee 1984:187). Many other species of *Vitis* are native to the United States and produce edible fruit, which can be purple, blue, black, or amber. Wild grapes are often too tart to be eaten raw, but are used in jams, jellies, and juices (Angell 1981:156).

Generally, wild grapes need more sweetening than cultivated grapes and contain plenty of pectin before fully ripe (Peterson 1977:198). Young grape leaves can be cooked as greens or used to wrap meat for baking. Internally and externally, leaves were used to cure snake bites and internal organ disorders. "In various parts of the world, including the West in pioneer times, grape leaves soaked in water were used as a poultice for wounds" (Kirk 1975:263). Wild grapes are found throughout the Southwest and Northeast United States growing in thickets and edges of woods (Medsker 1966:53-59).

***Ribes* (Currant)**

*Ribes* pollen indicates that currants or gooseberries were eaten or the debris put into the privies. Both currants and gooseberries tend to retain dried blossoms until harvest, so it is possible to introduce *Ribes* pollen into the human digestive tract through eating currants and gooseberries, even if these berries have been cooked for jelly or pie. Currants grow on thornless bushes in long clusters. All currants are rich in pectin and might have been important in making jelly in historic times. Currants are considered best when cooked into sauce, jelly, or pie fillings. Gooseberry bushes have thorns, as do some types of berries, which are rich in pectin. Gooseberries are harder to pick from the bush than currants. The berries are popular for pies, sauce, or jelly (Angell 1981:36-38, 146-150).

***Sambucus* (Elderberry)**

*Sambucus* (elderberry) berries are usually purplish-black, but can be red, blue, and purple. The red berries are reported to be poisonous. Fresh berries of most species are rank smelling and mildly unpleasant

tasting; however, the berries can be prepared in pastries, preserves, and wines. The berries also can be dried to remove the unpleasant odor and taste. They are then added to muffins, fruit stews, and pie fillings. Elderberries are high in Vitamins A and C, thiamine, calcium, and niacin, and contain iron and potassium. *Sambucus canadensis* flowers are sometimes mixed with batter and baked into cakes. The bark of *Sambucus* shrubs was simmered in lard to make an ointment for chafed skin, rashes, abrasions, ulcers, and burns. The fruits and flowers were poulticed for treating rheumatism, sores, and burns. Flowers were steeped in hot water to make a tea for treating fevers, while a flower tea made with peppermint was used to treat stomachaches. Flower water also was used for sunburns and as an eyewash. Berries were fermented to make a tonic wine and a cooling lotion for feverish patients (Angier 1986:113-117; Krochmal and Krochmal 1978:198-199; Peterson 1977:172). *Sambucus* plants are found in rich damp soils along stream banks, in roadside ditches, in thickets and open woods, and on mountain slopes where there is adequate moisture (Angell 1981; Kirk 1975; Medsker 1966; Peterson 1977).

**Other*****Medicago sativa* (Alfalfa)**

*Medicago sativa* (alfalfa) is one of the oldest known forage legumes. Because legume plants form a symbiotic relationship with certain soil bacteria that supply the plant with essential nutrients and enrich the soil, alfalfa often is grown as a rotation crop. The five types of alfalfa grown commercially include common, Turkestan, variegated, non-hardy types, and spreading or creeping types. *Medicago sativa* is a deep-rooted herbaceous plant that commonly grows to a height of two to three feet (McGee 1984:228; Phillips Petroleum Company 1963:93, 111).

***Pueraria* (Kudzu)**

*Pueraria lobata* (kudzu-vine) was introduced from east Asia for its farinaceous, tuberous roots and for fiber. It has been valued as a quick-growing ornamental climber. The high-climbing, twining stems become ligneous and may grow up to 1 inch thick. It grows on the borders of wood and fields, spreading rapidly in the southeastern states (Fernald 1950:940). Kudzu has developed a reputation of being a very aggressive weed capable of covering small structures and non-moving objects very rapidly.



***Sporormiella* (Dung fungal spore)**

The fungal spore, *Sporormiella*, represents a dung fungus that becomes more abundant in Historic Period sediments following the historic introduction of grazing animals. Its increasing presence in historic samples has been noted in numerous palynological studies (Davis 1987). *Sporormiella* fungal spores are not confined to introduced grazers dung, but also occur in dung from moose, wild sheep, deer, elk, caribou, and rabbits. The increase of *Sporormiella* spores in historic sediments may relate to changing land use patterns and increase in the length of time that herds of animals occupy any given area.

**PARASITES**

*Trichuris trichiura* (whipworm) resembles a buggy whip and may average 40 millimeters (nearly 16 inches) in length for the female. They have a thinner wall than do *Ascaris* eggs, which were not recorded in this study. Unlike *Ascaris* (roundworm), which lives free and unattached in the small intestine, whipworm lives primarily in the cecum, where it attaches itself to the intestinal wall. In heavy infestations, however, they may be found along the entire colon including the rectum. Whipworms are longer lived than roundworms, living for several years and producing eggs for discharge in the feces. Eggs develop into an infective larval stage within the eggshell in three to six weeks. Adverse conditions may delay development for several months or even years. Once embryos are ingested, larvae hatch in the jejunum, penetrating the intestinal villus, where it will develop for three to ten days. The adolescent worm moves into the cecum, where it develops into an adult. Ninety days are required between ingestion and production of a gravid female (Beck and Davies 1976:84-86).

Infections are common in areas of high humidity and hard clay soils, which hold moisture. Dense shade and warm climate are both necessities. Infection is usually heaviest among children, since hand to mouth contact in areas of soil pollution is a common vector in spreading these parasites. Whipworm eggs are less resistant to environmental changes, so infection may be more spotty than *Ascaris* (roundworm), with which it often co-occurs (Beck and Davies 1976: 84-86).

Light infestations with whipworm may produce no symptoms. Abdominal pain sometimes mimicking appendicitis, vomiting, constipation, fever, distension and flatulence, headache, backache, anorexia, and weight loss have all been associated with infestation by this parasite. If the infection is heavy, bloody diarrhea and emaciation may result. Prolapse of the rectum may also occur with heavy worm burdens. Fatalities are rare, even in malnourished and neglected children. Whipworm is more difficult to treat than roundworm, since the worms are embedded in the intestine (Beck and Davies 1976:84-86).

**PHYTOLITH REVIEW**

Phytoliths are silica bodies produced by plants when soluble ground water silica is absorbed by the roots and carried up to the plant via the vascular system. Evaporation and metabolism of this water result in silica precipitation in and around the cellular walls. Opal phytoliths, which are distinct and decay-resistant plant remains, are deposited in the soil as the plant or plant parts die and break down. They are, however, subject to mechanical breakage, erosion, and deterioration in high pH soils. Phytoliths are usually introduced directly into plant-decayed soil. Phytolith transportation occurs primarily by animal consumption, man's gathering of plants, or by erosion or transportation of the soil by wind, water, or ice.

Types of grass short-cell phytoliths recovered from this site may be lumped into festucoid and chloridoid. Phytoliths tabulated to represent "total phytoliths" include all forms representing grasses and dicots. Frequencies for all other bodies recovered are calculated by dividing the number of each type recovered by the "total phytoliths."

The festucoid class of phytoliths is ascribed primarily to the Subfamily Pooideae and occur most abundantly in cool, moist climates. However, Brown (1984) notes that festucoid phytoliths are produced in small quantity by nearly all grasses. Therefore, while they are typical phytoliths produced by the Subfamily Pooideae, they are not exclusive to this subfamily. Chloridoid phytoliths are found primarily in the Subfamily Chloridoideae, a warm-season grass that grows in arid to semi-arid areas and requires less

available soil moisture. Chloridoid grasses are most abundant in the American Southwest (Gould and Shaw 1983:120). Twiss (1987:181) also notes that some members of the Subfamily Chloridoideae produce both bilobate (panicoid) and festucoid phytoliths.

Buliform phytoliths are produced by grasses in response to wet conditions (Irwin Rovner, personal communication, January 1991) and are to be expected in wet habitats of floodplains and other places. Phytoliths, referred to as "pillows," are the same as those reported by Rovner (1971). While these phytoliths are described, no taxonomic or environmental significance has been assigned. They most probably represent grasses.

Diatoms and sponge spicules were also noted. Diatoms indicate wet conditions, and sponge spicules represent fresh water sponges. Their presence in these samples probably indicates wind transport of lacustrine deposits. Their recovery in upland soils is noted to accompany loess deposits derived from floodplains in Illinois (Jones and Beavers 1963).

## DISCUSSION

Seven pollen/parasite samples represent privies that belonged either to the Moore House or to the Kirmse House. Archeological evidence indicates these privies overlapped. In addition, three pollen/parasite samples were examined from areas where trash was dumped. Two samples representing trash dumps also were examined for phytoliths.

Sample 1 represents a wooden floor topped with soil and trash containing thousands of tin can remnants (142N98E) (table 1). Level 3, at a depth of 73 cm below the surface, was examined for pollen, starch granules, phytoliths, and parasites. This sample yielded very little pollen. The dominant type was *Pinus* (figure 1, table 2), representing local pines such as lodgepole or shore pine. Other trees represented in this sample include *Betula*, which probably represents local paper birch; *Picea*, representing Sitka spruce; and *Tsuga heterophylla*, representing western hemlock. Plants that probably represent local shrubs, herbaceous plants, that might include a few cultivated or weedy plants include High-spine Asteraceae, Caryophyllaceae, Chenopods, Onagraceae, Poaceae, Polygonaceae, *Polygonum*,

and Rosaceae. Pollen probably representing weedy plants includes Low-spine Asteraceae, Brassicaceae, Liguliflorae, and *Polygonum aviculare*-type. No pollen representing probable food or medicines was noted in this sample. The phytolith record from this sample is dominated by elongate forms produced by numerous grasses. A few of these elongates exhibit dendritic projections, marking them as representing cereal grasses or the native progenitors of cereal grasses. Festucoid phytoliths are moderately abundant, as is expected from native grasses in this latitude. The few Chloridoid forms observed may have been produced in festucoid grasses. Epidermal tissue, as well as dicot forms, represents the presence of dicotyledenous plants. Recovery of a *Palmae* form indicates coconut was eaten, then discarded in this area. Alternatively, a product such as a fan or woven article of palm fronds might have been owned by the occupants of this house, then discarded in this area.

Sample 2 represents the side of a streambed behind a fence that probably was used as a dumpsite by the Moore family during early property use from 1897 until 1899. This sample was collected from the dump base and probably pre-dates the 1920s-1930s use of the dump. Sample 2 is dominated by Poaceae pollen. A few Poaceae pollen aggregates attest to the fact that grasses grew in the area, as is expected beside a stream. Pollen representing trees includes *Alnus* (alder) and *Betula* (birch), which may have grown along the stream. In addition, conifer pollen including *Juniperus*, Pinaceae, *Picea*, *Pinus*, and *Tsuga heterophylla* indicate the presence of juniper, spruce, pine, and western hemlock in the general vicinity. Pollen that may represent local shrubs or herbaceous plants includes High-spine Asteraceae, Caryophyllaceae, and Chenopods. Small quantities of Brassicaceae, *Erysimum*, *Rumex*, *Trifolium*, and Valerianaceae/Dipsacaceae represent plants assumed weedy. Some of these plants also might have grown along side the stream as part of the natural vegetation community. A small quantity of spores represents local ferns. No evidence of pollen representing food or medicine was noted. A single *Sporormiella* dung fungal spore recovered from this sample indicates either that grazing animals wandered through this area or that manure was discarded in this area. The phytolith record was dominated by elongate forms with dendritic projections, representing the discard of cereal grains in this area. Alternatively, cereal grains might have been part of the diet of domestic animals

such as horses. Recovery of *Sporormiella* dung fungal spores in this sample, along with the dendritic elongate phytoliths point to the possibility that it was an animal eating the cereal grains. Presence of manure in this area would attract dung fungus. Other phytoliths recovered from this sample represent cool season grasses interpreted to be appropriate for this area.

Sample 3 represents the final non-privy location. Fill from a yard area, close to the original fence of the property, was sampled. Use of this level (level 4) is presumed to have occurred between 1886 and 1925. The original fence was present in this vicinity between approximately 1915 and the 1930s. The Kirmse family dumped their cans close to this area (represented by sample 1), and it is possible that some trash was deposited here as well. The pollen record in this sample yielded much more Poaceae pollen than was noted in sample 1. Grasses apparently grew thickly in this area. Pollen representing trees was similar to that noted in sample 2, collected along the stream and included *Alnus*, *Betula*, *Juniperus*, Pinaceae, *Picea*, *Pinus*, and *Tsuga heterophylla*. Much of the pollen representing trees is wind transported over moderate to long distances, indicating these trees may have grown in the general vicinity of this historic site, or may have been much farther removed. Grasses again were relatively abundant, since the Poaceae pollen frequency was moderately high. Shrubs and herbaceous plants noted in this vicinity include High-spine Asteraceae, Caryophyllaceae, Cheno-ams, Rosaceae, *Sambucus*, and probable Scrophulariaceae. *Sambucus* (elderberries) might have been eaten as jam or jelly, wine, in pies, or used medicinally and the refuse discarded in this area. Weeds appear to have included a member of the Brassicaceae, *Rumex*, and *Trifolium* (clover). Evidence for foods includes Ericaceae (blueberry, cranberry) and Cereal pollen representing cultivated grains. A small quantity of spores represents local ferns.

Samples 5, 6, and 7 represent deposits of the privy at 128N118E attributed to the Kirmse family occupation, between 1908 and 1916. In general, these samples exhibit evidence of local trees including *Alnus*, *Betula*, Pinaceae, *Abies*, *Picea*, *Pinus*, and *Tsuga heterophylla*. Local shrubs and herbaceous plants appear to have included *Artemisia*, High-spine

Asteraceae, Caryophyllaceae, Cheno-ams, Cyperaceae, Fabaceae, Poaceae, Polygonaceae, *Polygonum*, Rosaceae, and in the lowest level, *Holodiscus* (ocean spray). Alternatively, *Artemisia* pollen may be present resulting from its use as a medicine. *Artemisia* pollen occurs only in privy deposits. Weeds vary from the two lower deposits to the upper deposit. The lower deposits indicate the presence of Low-spine Asteraceae, Brassicaceae, *Erysimum*, *Polygonum aviculare*, and *Rumex*, while the upper sample indicates that Brassicaceae and *Trifolium* were present. Possible foods consumed were best represented in the middle sample (6). The lowest sample indicates that Cereal (cereal grains) were consumed. The middle sample yielded evidence of *Eugenia* (clove), *Fragaria* (strawberries), Lamiaceae (mint family), Cereal (cereal grains), and *Vitis* (grape) consumption. Cloves probably were used to flavor a food such as baked ham or a dessert such as pumpkin pie. Strawberries may have been eaten fresh or in preserves. A member of the mint family may have been consumed as tea, used as a flavoring, or used for its medicinal qualities. Cereal grains often are a staple component of the diet. Grapes might have been imported and eaten fresh. Alternatively, grape pollen could have been transmitted in grape juice or wine. No evidence of foods was recovered from the upper sample from this privy.

The lower two samples exhibited small quantities of *Sporormiella* dung fungal spores. Recovery of these spores from the privy may be the result of putting dirt in the privy at intervals or discarding animal dung or manure in the privy.

The lowest sample from the Kirmse privy also yielded the only evidence for a parasite recovered from any of these privies. A *Trichuris* egg, noted during the scan of this sample, suggests that someone using this privy had arrived in Skagway relatively recently. The life cycle of parasites is not conducive to reproduction and contamination outside the human body during most of the year in Skagway, Alaska. Therefore, it is likely that one (or more) user of this privy had whipworm upon arriving in Skagway.

Samples 8, 9, and 10 have been attributed to the original Moore House family, whose occupation spanned approximately 1896 to 1900. Samples 9 and 10 represent the original privy that contained little, if

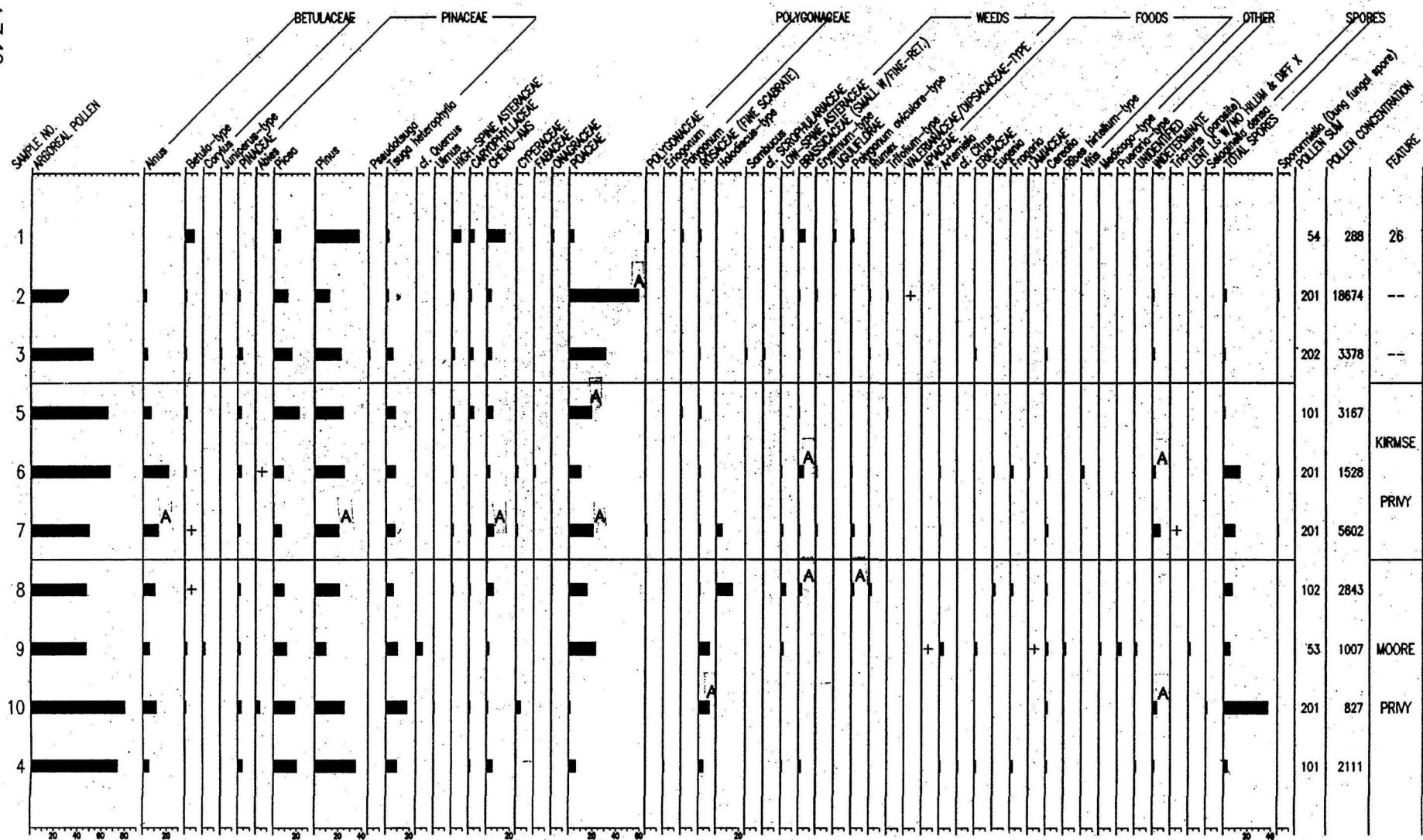


FIGURE 1. POLLEN DIAGRAM FOR MOORE & KIRMSE HOUSE DUMP/PRIVY SAMPLES.



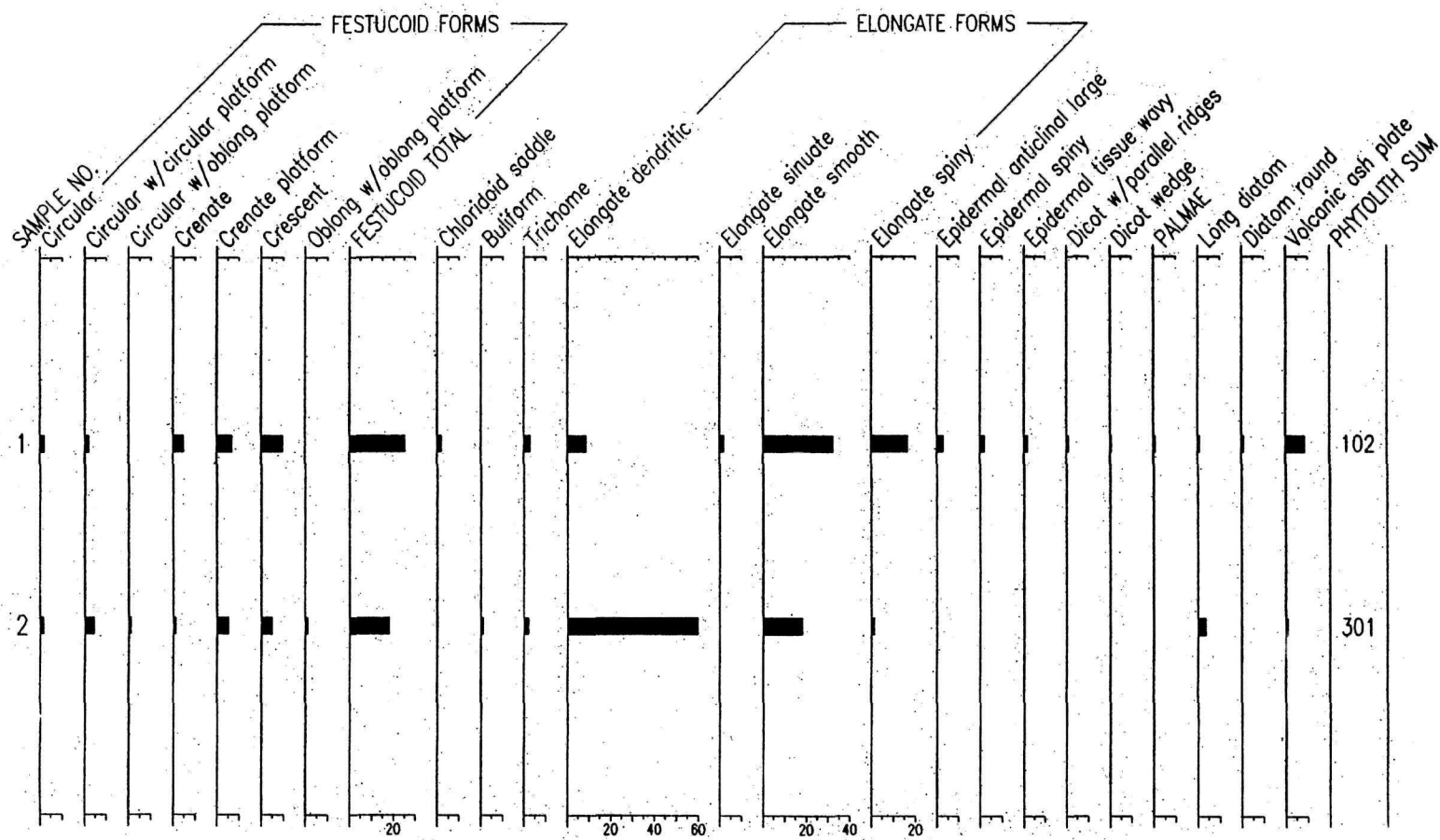


FIGURE 2. PHYTOLITH DIAGRAM FOR DUMP SAMPLES.



any, wood cribbing in its construction. The pollen record is highly variable in samples from this privy. With a few exceptions, local vegetation appears to have been relatively consistent. Trees, including *Alnus*, *Betula*, Pinaceae, *Picea*, *Pinus*, and *Tsuga heterophylla*, were noted in most of the samples. *Corylus*-type, *Abies*, *Quercus*, and *Ulmus* were noted only in the middle or bottom sample. Shrubs and herbaceous plants were variable and included *Artemisia*, High-spine Asteraceae, Caryophyllaceae, Chenopods, Cyperaceae, Poaceae, Rosaceae, and *Holodiscus*. Alternatively, *Artemisia* might have been used medicinally. Rosaceae (rose family) pollen was particularly abundant in the lowest two samples (10 and 9), while *Holodiscus* (ocean spray) pollen was very abundant in the upper sample. It is possible that a native member of the rose family grew in abundance on the property before construction of the Moore house and that these shrubs were not entirely eradicated.

The lowest sample (10) exhibits the least information concerning presence of grasses, weeds, and foods. No pollen class as a weed was recovered, which may reflect construction of and use of this privy before other ground-disturbing activities on this site. Cereal pollen indicates that users of this privy ate cereal grains. The middle level notes introduction of Low-spine Asteraceae (ragweed, sumpweed, tansy) weeds into the area and a proliferation of grasses. Foods consumed appear to have included a member of the Apiaceae family (often used as flavorings), Ericaceae (blueberry, cranberry), Lamiaceae (mint family), Cerealia, and *Ribes hirtellum*-type (currant). Apparently, the users of this level of the privy consumed locally available fruits such as blueberry/cranberry and currants. In addition, they used a member of the Apiaceae family as a flavoring, mint as a flavoring and/or tea, and ate cereal grains. Recovery of a lenticular starch with no hilum and a diffuse X represents a degraded *Hordeum* (barley) type starch, indicating consumption of barley. The upper sample yielded evidence of more weeds including Low-spine Asteraceae, Brassicaceae, *Polygonum aviculare*-type, and *Rumex*. Foods consumed by users of this privy included *Eugenia* (cloves), *Fragaria*, and Cerealia. Evidently the Moores flavored their foods with cloves, ate cereal grains, and either fresh strawberries or strawberry preserves.

Sample 4 was collected from Stratum G at the base of a nearby privy (130N/116E). This use was attributed to the Moore family and underlies the ca. 1914 Kirmse family privy that was built almost on top of the earlier 1896 to 1900 Moore family privy.<sup>2</sup> In many respects the pollen record from this sample was similar to that of sample 10 from the privy base at 132N/123E. Similar quantities of Pinaceae, *Picea*, and *Pinus* pollen were noted. Other trees in sample 4 included *Alnus*, *Tsuga heterophylla*, and *Ulmus*. Shrubs and herbaceous plants included Caryophyllaceae, Chenopods, *Eriogonum*, and Rosaceae. Probable weeds included Low-spine Asteraceae and Brassicaceae. Foods represented in the pollen record include probable *Citrus*, Ericaceae, *Fragaria*, and Cerealia. The Moores probably were eating locally available blueberries/cranberries and strawberries, cereal grains, and an imported citrus.

## SUMMARY AND CONCLUSIONS

Pollen, starch, parasite, and phytolith analysis of samples from three privy areas, two dump areas, and the fill from a yard area have provided much data to indicate diet for the Moore family, Kirmse family, and probably their guests. The pollen record indicates that local vegetation included a variety of spruce, pine, Douglas fir, western hemlock, alder, birch, juniper, oak, and elm as trees and/or large shrubs. Local vegetation appears to have included varying amounts of grasses. Grasses were most abundant in the area along the streamside (Sample 2). Various members of the rose family also were present, probably in the local vegetation. *Holodiscus* (ocean spray), for instance, appears to have been a moderately abundant plant near the end of the Moore family and beginning of the Kirmse family use of the privy. Another member of the rose family was more common early during the Moore family use of the privy.

Weeds for which there is evidence in the pollen record include Low-spine Asteraceae (ragweed, sumpweed, tansy and others), members of the mustard family including *Erysimum* (worm-seed mustard, treacle mustard, spreading mustard), dandelion-type weeds, knotweed/smartweed, dock, clover, and a member of the Valerianaceae (valerian) or Dipsacaceae (teasel) families. Foods consumed included a member of the celery family (Apiaceae),

citrus, cloves, strawberries, blueberries or cranberries, mint, cereal grains, coconut, and currant. Several of these foods might be products of local plants, such as strawberries, blueberries or cranberries, and currant. Others, such as citrus, cloves, cereal grains, and coconut, represent a trade network necessary to import goods. The member of the celery family may have been consumed as a condiment or possibly represents a weedy plant. Mint might have been grown in a local garden or imported. Plants that might have been used medicinally include wormwood and mint. Recovery of *Medicago* (alfalfa) pollen suggests that the deposits held residue from animal feed, either before or after going through the animal. Recovery of *Sporormiella* dung fungal spores indicates the presence of manure. Recovery of a single *Trichuris* parasite egg in the early Kirmse family level indicates that either a member of the Kirmse family, or one of their guests had arrived from a place more hospitable to the life cycle of parasites and was infected. The absence of these parasite eggs suggests the parasitic infection did not last long in this climate or that the guest left.

---

<sup>1</sup> *Editor's note:*

Ragweed does not grow in the Skagway vicinity or in Alaska in general. Common tansy, however, is a weed found in abundance. Another possibility is that the "spine height [of deteriorated pollen] is reduced (mechanical abrasion), thus reducing normally marginally high-spine types to apparent low-spine types."

<sup>2</sup> *Editor's note:*

Paleo Research was misinformed on the provenience of Sample 4 (130N116E, Stratum G). This is actually close to the base of the Kirmse privy, roughly equivalent to Sample 5 (128N118E, Level 7). It has nothing to do with the earlier privy in this location.

---

Table 1 - Provenience Data for Samples from Klondike Gold Rush National Historical Park

Sample No.	Feature No.	Level	Provenience & Depth	Description	Analysis
1	23	3	142N98E; Fill from ca. 1920s-1930s dump site, 73" bpgs <sup>1</sup>	Wooden floor topped with soil and 1000s of tin can remnants (trash)	Pollen Phytolith Parasite
2			145N98E; Fill from base of unit in 1920s-1930s dump site, 2.64 feet bpgs	Side of a streambed, behind a fence. This dump site could contain food, early use of property from 1897-1899	Pollen Phytolith Parasite
3		4	139N92E; Fill from yard area, ca. 1886-1925, 81" bpgs	Close to the original fence of the property, ca. 1915-1930s, close to where the Kirmse family dumped their cans in unit 142N98E. Compare w/ 142N98E	Pollen Parasite
4			130N116E; Stratum G fill from the ca. 1910-1917 privy	Base of the Kirmse family privy built almost on top of the earlier 1897-1900 Moore family privy	Pollen Parasite
5	11	7	128N118E; Privy fill, ca. 1910-17, 1.71' bpgs	Probably 2 privies, overlapping, from Kirmse family (1908-1916)	Pollen Parasite
6	11	8	128N118E; Privy fill, ca. 1910-17, 2.01' bpgs		Pollen Parasite
7	11	9	128N118E; Privy fill, 1897-1900, 2.3' bpgs		Pollen Parasite
8	11	10	128N118E; Privy fill, 1897-1900, 2.60' bpgs	Moore family ca. 1897-1900	Pollen Parasite
9	11	12	132N123E; Privy fill, 1897-1900, 2.88' bpgs	Original privy, ca. 1897-1900, little, if any, wood cribbing	Pollen Parasite
10	11	13	132N123E; Privy fill, 1897-1900, 3.18' bpgs		Pollen Parasite

<sup>1</sup> bpgs = below present ground surface

Table 2 - Pollen Types Observed in Samples from Skagway, Alaska

Scientific Name	Common Name
<b>ARBOREAL POLLEN:</b>	
<i>Alnus</i>	Alder
<i>Betula</i> -type	Birch
<i>Corylus</i> -type	Hazelnut (not grown in Skagway)
Cupressaceae	Cypress family
Pinaceae	Pine family
<i>Abies</i>	Fir
<i>Picea</i>	Spruce
<i>Pinus</i>	Pine
<i>Pseudotsuga</i>	Douglas fir
<i>Tsuga heterophylla</i>	Westsern hemlock
<i>Quercus</i>	Oak
<i>Ulmus</i>	Elm
<b>NON-ARBOREAL POLLEN:</b>	
High-spine Asteraceae	Includes aster, sunflower, etc.
Caryophyllaceae	Pink family
Cheno-ams	Includes amaranth and pigweed family
Cyperaceae	Sedge family
Fabaceae	Bean or Legume family
Onagraceae	Evening primrose family
Poaceae	Grass family
Polygonaceae	Knotweed/smartweed family
<i>Eriogonum</i>	Wild buckwheat
<i>Polygonum</i>	Knotweed
Rosaceae (fine scabrate):	Rose family
<i>Holodiscus</i>	Spirea, ocean spray
<i>Sambucus</i>	Elderberry
Scrophulariaceae	Figwort family
<b>WEEDS:</b>	
Low-spine Asteraceae	Includes ragweed, cocklebur, tansy

Scientific Name	Common Name
Brassicaceae	Mustard family
<i>Erysimum</i> -type	Treacle-mustard
Liguliflorae	Includes dandelion and chicory
<i>Polygonum aviculare</i> -type	Knotweed
<i>Rumex</i>	Dock
<i>Trifolium</i> -type	Clover
Valerianaceae/Dipsacaceae-type	Valerian, teasel
<b>FOODS &amp; MEDICINES:</b>	
Apiaceae	Parsley-carrot family
<i>Artemisia</i>	Wormwood
<i>Citrus</i>	Citrus (orange, lemon, lime, etc.)
Eriaceae	Heath family
<i>Eugenia</i>	Clove
Fragaria	Strawberry
Lamiaceae	Mint family
Cereal	Cereal grains
<i>Ribes hirtellum</i> -type	Currant, gooseberry
<i>Vitis</i> -type	Grape
<b>OTHER:</b>	
<i>Medicago</i> -type	Alfalfa
<i>Pueraria</i> -type	Kudzu
Unidentified	
Indeterminate	Too badly corroded to identify
<b>PARASITES:</b>	
<i>Trichuris</i>	Whipworm
<b>SPORES:</b>	
<i>Selaginella densa</i>	Little clubmoss
<i>Sporormiella</i>	Dung fungus



## REFERENCES CITED

- Angell, Madeline  
1981 *A Field Guide to Berries and Berrylike Fruits*. The Bobbs-Merrill Company, Inc., New York.
- Angier, Bradford  
1986 *Field Guide to Medicinal Wild Plants*. Stackpole Books, Harrisburg, Pennsylvania.
- Bartram, William  
1791 *Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee Country, Containing An Account of the Soil and Natural Productions of those Regions*. Philadelphia.
- Beck, J. Walter, and John E. Davies  
1976 *Medical Parasitology*. Second Edition. The C.V. Mosby Company, Saint Louis, Missouri.
- Brown, Dwight A.  
1984 Prospects and Limits of Phytolith Key for Grasses in the Central United States: *Journal of Archaeological Science*, 11:345-368.
- Davis, Owen K.  
1987 Spores of the Dung Fungus *Sporormiella*: Increased Abundance in Historic Sediments and before Pleistocene Megafaunal Extinction. *Quaternary Research* 28:290-294.
- Fernald, M. L.  
1950 *Gray's Manual of Botany*. Eighth Edition. American Book Company, New York.
- Foster, Steven, and James A. Duke  
1990 *A Field Guide to Medicinal Plants*. Houghton Mifflin Company, Boston, Massachusetts.
- Gould, F. N., and R. B. Shaw  
1983 *Grass Systematics*. Texas A&M University Press, College Station.
- Grieve, M.  
1981 *A Modern Herbal*. Dover Publications, New York.
- Hedrick, U.P., editor  
1972 *Sturtevant's Edible Plants of the World*. Dover Publications, Inc., New York.
- Heiser, Charles B., Jr.  
1990 *Seed to Civilization: The Story of Food*. Harvard University Press, Cambridge.
- Hickey, Michael, and Clive J. King  
1981 *100 Families of Flowering Plants*. Cambridge University Press, Cambridge.
- Humboldt, Alexander  
1889 *Personal Narrative of Travels to the Equinoctial Regions of America, during the years 1799-1804*. By Alexander Von Humboldt and Aime Bonpland. Written in French by Alexander Von Humboldt: Translated and edited by Thomasina Ross. London. 3 volumes.

Jones, Robert L., and A. H. Beavers

1963    Sponge Spicules in Illinois Soils. *Soil Science Proceedings 1963*: 438-440.

Kirk, Donald R.

1975    *Wild Edible Plants of Western North America*. Naturegraph Publishers, Happy Camp, California.

Krochmal, Arnold and Connie

1978    *A Guide to the Medicinal Plants of the United States*. Quadrangle, the New York Times Book Co., New York.

Martin, Alexander C.

1972    *Weeds*. Golden Press, Western Publishing Company, Inc., New York.

1889    *Personal Narrative of Travels to the Equinoctial Regions of America, during the years 1799-1804*.  
By Alexander Von Humboldt and Aime Bonpland. Written in French by Alexander Von Humboldt:  
Translated and edited by Thomasina Ross. London. 3 volumes.

Jones, Robert L., and A. H. Beavers

1963    Sponge Spicules in Illinois Soils. *Soil Science Proceedings 1963*: 438-440.

Kirk, Donald R.

1975    *Wild Edible Plants of Western North America*. Naturegraph Publishers, Happy Camp, California.

Krochmal, Arnold and Connie

1978    *A Guide to the Medicinal Plants of the United States*. Quadrangle, the New York Times Book Co., New York.

Martin, Alexander C.

1972    *Weeds*. Golden Press, Western Publishing Company, Inc., New York.

McGee, Harold

1984    *On Food and Cooking*. Charles Scribner's Sons, New York.

Medsker, Oliver Perry

1966    *Edible Wild Plants*. MacMillan Publishing Company, Inc., Racine, Wisconsin.

Millspaugh, Charles F.

1974    *American Medicinal Plants: An Illustrated and Descriptive Guide to Plants Indigenous to and  
Naturalized in the United States Which are Used in Medicine*. Dover Publications, Inc., New York.

Muenschel, Walter Conrad

1987    *Weeds, Second Edition*. Comstock, Ithaca.

Niering, William A., and Nancy C. Olmstead

1979    *The Audubon Society Field Guide to North American Wildflowers, Eastern Region*. Alfred A. Knopf, Inc., New York.

Ody, Penelope

1993    *The Complete Medicinal Herbal*. Dorling Kindersley, New York.

Peterson, Lee A.

1977 *Edible Wild Plants*. Collier Books, New York.

Phillips Petroleum Company

1963 *Pasture and Range Plants*. Phillips Petroleum Company, Bartlesville, Oklahoma.

Rovner, Irwin

1971 Potential of Opal Phytoliths for Use in Paleoecological Reconstruction. *Quaternary Research* 1(3):343-359.

Twiss, Page C.

1987 Grass-Opal Phytoliths as Climatic Indicators of the Great Plains Pleistocene. IN *Quaternary Environments of Kansas* edited by W. C. Johnson. Kansas Geological Survey Guidebook Series 5: 179-188.



## APPENDIX 8 - Parasitological and Palynological Investigations of Latrine Sediments

Karl J. Reinhard  
Department of Anthropology  
University of Nebraska-Lincoln  
Lincoln, NE 68588  
1995

### INTRODUCTION

The palynological and parasitological analysis of sediment samples from Skagway, Alaska, was undertaken with the goals of defining parasitological status of its inhabitants and defining their environment. This was done through palynological and botanical examination of soils. It was also hoped that, through the pollen profile from latrines, aspects of diet could be defined. The palynological goals were not achieved due to poor preservation conditions of the sediments. Also, no parasite eggs were found.

### UNDERSTANDING POLLEN COUNTS

Before presenting the pollen data, it is important to discuss factors of pollen deposition and preservation that affect pollen counts. With respect to pollen deposition, there are two basic classes of pollen: wind pollinated and insect pollinated. Wind pollinated plants tend to produce large quantities of pollen, from 10,000 to 70,000 pollen grains per anther. In contrast, insect pollinated plants produce 1,000 grains or less per anther. Insect pollinated grains are typically covered with lipids that securely hold them to the anther. Consequently, they rarely appear in percentages greater than about 4% in the natural pollen rain. Thus, wind pollinated types dominate the natural pollen rain.

Different wind pollinated types travel to differing distances from the source plants. Some pollen grains travel great distances from their source plants and are therefore poor indicators of local environments. Others are dispersed near the source plant and are therefore useful in environmental reconstruction. How far pollen grains travel depends in part on how

high up they are released (trees versus herbs), and the density (weight) of the pollen grains. Density is expressed as "terminal velocity" which is measured as the number of millimeters a pollen grain falls per second in still air. This distinction is more important for trees. Some trees, such as pines, produce very light pollen grains (terminal velocity of 2) that carry for hundreds or thousands of miles before they settle. Other trees, such as firs (terminal velocity of 40), produce heavy grains that mostly settle within a few yards to a few miles of their source. Thus, those pollen types that have low terminal velocities are poor indicators of the local environment relative to those with high terminal velocities. Thus, for environmental reconstruction, it is important to have an idea of terminal velocities of pollen types, especially for tree pollen.

Preservation conditions also affect the composition of pollen extracted from soil samples. Pollen preservation is affected by pH, oxidation potential (Eh), fungal decomposition, and wetting-drying episodes. Acidic pH is better for preservation. Low oxidation potential is better for preservation. Constantly moist soils are better for preservation than soils that are intermittently wet and dry. The preservation potential of different pollen types is directly related to the amount of a compound called "sporopollenin" that is present in the pollen wall. Sporopollenin is the most durable naturally occurring organic compound, and it is found almost exclusively in pollen and spores. It varies between pollen types in its abundance. The wall of pine pollen is composed of about 19.6% sporopollenin, which makes pine the most durable pollen grain. In contrast, the sporopollenin content of other pollen types is relatively low: 8.8% for alder, 7.5 for elm, 5.9 for oak, and 5.0 for cottonwood. Therefore, in soils that have poor preservation



potential, there will be differential decomposition pollen type with low sporopollenin content. For the above example, cottonwood would have the worst preservation, pine the best preservation, with oak and elm moderate preservation in soils that have poor preservation qualities. In preservation-poor environments, pine will be over-represented and cottonwood will be under-represented. Preservation also relates to the thickness of the pollen wall, surface structure, number of pores, and other characteristics of grain morphology. In general, the most durable grains come from Pinaceae (pine family) species, composites (Asteraceae), grasses (Poaceae), and Chenopodiaceae (Chenopodiaceae and Amaranthaceae). Thus, in poorly preserved pollen samples these types will be the only ones present. In especially poorly preserved soils, one might expect to find only *Pinaceae* pollen. When it appears that these types are over-represented, then interpretation of pollen results must be cautious since other pollen types will have differentially decomposed.

Fungi are another factor of the soil environment that affects pollen preservation. In the natural world, fungi are one of two major groups of organisms responsible for decomposition of biological remains. In deposits that are damp but with suitable oxygenation or those that go through wetting/drying episodes, fungi are especially significant decomposers of pollen. Pollen grains are attacked by fungi and destroyed. Like other factors of pollen decomposition, fungi can result in differential degradation of pollen types since certain fungal species have an affinity for some pollen types but not others. However, in my experience with pollen analysis of latrine deposits, destruction of most pollen types is associated with fungal activity. Unlike other factors of decomposition, fungi leave absolute evidence of their activities in the form of fruiting bodies, spores, and hyphae fragments (hyphae are the vegetative filaments of higher fungi). Therefore, in counting pollen from latrine deposits, I assess the presence of fungal remains and the diversity of those remains.

There comes a point in extremely preservation-poor soils that pollen counts become dubious. In general, when pollen is present in quantities less than 1,000 grains per gram, there is differential pollen preservation. In addition, at such low quantities, it is often impossible to obtain 200-grain counts that are statistically essential to reconstruct the past. Low

pollen content is usually associated with poor preservation of pollen and, therefore, presents a skewed representation of the pollen grains that were originally incorporated in the soils. This usually reflects differential pollen preservation in which pollen taxa with a high content of sporopollenin preserve, but grains with low sporopollenin content decompose. High insoluble organic content does not necessarily affect pollen preservation, but does prevent obtaining 200 grain counts because the pollen grains cannot be concentrated for the count. Charcoal samples from hearths, for example, typically contain such small amounts of pollen that counting is difficult to impossible.

During the last decade, palynologists began interpreting pollen aggregates as evidence of economic use of certain plant taxa. Pollen aggregates are simply clumps of pollen that are thought to represent human harvesting of flowers or seeds. Wind dispersed pollen is rarely carried in clumps, although occasionally small clumps of pollen do carry on the wind. The presence of large clumps of pollen suggests economic use.

## UNDERSTANDING PARASITE EGG COUNTS

Archaeoparasitology is a relatively new field in the science of archeology. From latrine contexts, the sediments are examined for the presence of intestinal parasitic worm eggs. The eggs of parasites have evolved to be extremely resistant to environmental decomposition factors. Therefore, they survive in a variety of environments. After one or two decades, the eggs cease to be infective. Thus, there is no danger of becoming infected with parasitic worms in excavating or handling latrine soils.

The major complication of parasite analysis is the similarity in egg morphology between parasite species that infect different host animals. For example, the species of whipworm and *Ascaris* (roundworm) that infect pigs produce eggs that are identical with the species that infect humans. Lesser similarities exist with other parasite species. Therefore, positive identification depends on morphometric analysis. Parasite eggs are quantified in the same way as pollen, in terms of eggs per gram of sediment.

Like pollen, the spectrum of parasite eggs can be affected by many variables. Unlike pollen, the

spectra of parasite eggs in archeological soil samples are largely determined by human behaviors. Ultimately, the variables that affect the parasite record can be divided into depositional and post-depositional variables.

There are many depositional factors to consider when interpreting parasite data. Obviously, the number of people using a latrine influences diversity and concentration of parasites in latrine soils. Use by more people results in more concentrated fecal layers and, consequently, greater egg concentrations. Also, use of a latrine by larger numbers of people results in greater diversity of parasite species. The socio-economic status and age-sex composition of the group using the latrine often relates to the amount of eggs that are introduced into latrine deposits. Socio-economics influence worm burden of the individuals using the latrine. Age-sex composition of the group using the latrine can have a pronounced effect on the egg content of a latrine. Because children tend to be most heavily infected with intestinal parasites, children tend to be more heavily infected with certain species, especially fecal borne parasites, than adults. Because of more intense child-mother interactions, adult females can be more frequently infected with parasites that can be transferred directly from person to person (like pinworm) than men due to greater contact with children. Beyond this, idiosyncratic household sanitation behaviors limit or expand exposure to parasites. The presence of domesticated animals can also affect the composition of latrine parasite spectra. For example, an analysis of a Medieval Paris latrine revealed the eggs of parasites from domestic dogs, cats, and fowl (Bouchet et al. 1989).

Parasite eggs are eventually susceptible to decomposition. Post-depositional factors include cultural and preservation considerations. For two of the most common types of human intestinal worms, whipworm and *Ascaris lumbricoides*, fungi can destroy the eggs. Analysis of this type of destruction shows two known patterns. First, the eggs become enveloped in fungal hyphae, which excrete digestive enzymes that cause linear erosions on the egg surface. Subsequently, the eggshell is subject to mechanical breakage. Second, for those eggs that have opercula, fungal spores grow inside of the eggs causing it to fracture. Other environmental conditions also affect the preservation of eggs. Extremely

high pH values from soils are associated with the destruction of parasite eggs. Cultural factors that affect the presence of parasites in latrine soils include the frequency of latrine cleaning and reuse of latrines as trash pits. Edaphic (relating to the soil) conditions can alter the spectrum of parasite eggs present in latrines by decomposition of the eggshells.

The simple presence of parasite eggs does not imply a fecal origin for the soils. Previous research by Jones (1985) established concentration values that reflect the fecal nature of urban archeological deposits. Jones concludes that *T. trichiura* egg counts of 20,000+ eggs per milliliter should be regarded as primarily fecal in origin. Those containing 2,000 to 19,999 eggs per milliliter are primarily fecal soils contaminated with other materials and those with counts of 500 to 1,999 eggs per milliliter are probably from layers containing substantial amounts of feces mixed with other materials such as household refuse. Egg counts below 500 per milliliter simply represent the normal background parasite fauna of an urban environment. Thus, egg concentration reflects fecal remains recovered from latrines. Jones's data are derived from urban, medieval settings. In my experience, eggs are less common in rural settings.

## METHODOLOGY

Laboratory numbers were assigned to each soil sample by field specimen number and the samples were prepared for processing. The pollen and parasite processing procedures used involved variations of standard techniques developed for the recovery of pollen from sediments and parasite eggs from latrine soils as described by Faegri and Iversen (1964; 1974), Moore and Webb (1978), Reinhard, et al. (1985; 1986), Warnock and Reinhard (1992), and Traverse (1988). The goal of processing is to dissolve and/or extract various soil components while leaving the organic debris containing parasite eggs and pollen behind. Twenty milliliters of soil were first measured. Two tablets of *Lycopodium* spores were added to each sample. Each *Lycopodium* spore tablet contains 11,300 plus or minus 400 spores. The addition of a known number of identifiable spores to the samples enables accurate measurement of the number of parasite eggs or pollen grains per milliliter of soil by calculating a ratio of eggs or pollen to known spores and multiplying by the number of spores added per milliliter of soil. With sediments

from northern latitudes, care must be taken in identifying *Lycopodium* spores that are added to the sample versus spores from naturally growing *Lycopodium* in the area. In the case of the Skagway sediments, this differentiation was facilitated by the poor preservation of archeological pollen and spores.

The individual samples were first treated with 30% hydrochloric acid in 300-milliliter beakers. Hydrochloric acid dissolves calcium carbonates. After the carbonates were removed, the samples were sedimented and screened to remove any large, heavy components. Sedimentation was accomplished by rigorously swirling the samples in the beakers until the soils were in suspension. The beaker was then set aside for 30 seconds to allow the heavy fraction to settle out. The supernatant was then poured through a 0.25-millimeter mesh screen into a 50-milliliter beaker. This process was repeated until the supernatant was nearly clear. The remains left on the screening were dried on blotter paper and examined for macroscopic remains. Any heavy sand sediment remaining in the original 300-milliliter beakers was discarded. The microscopic remains in the 500-milliliter beakers were then concentrated by centrifugation. They then were washed three times in distilled water to remove any traces of hydrochloric acid breakdown products, which would otherwise react with hydrofluoric acid breakdown products in later processing stages. The samples were then treated with 72% hydrofluoric acid, which will dissolve any silicates in the sample. This was accomplished by transferring the concentrated remains to 700-ml plastic beakers with 50 ml of hydrofluoric acid added to each sample. The samples were set aside for 24 hours to allow for completion of the reaction, stirring approximately every seven hours to ensure complete interaction between remains and acid. After 24 hours, distilled water was added to the mixtures and sedimented for two hours. The supernatant was then aspirated off, with care taken not to disturb the sediment remains. The remaining sediments were then concentrated by centrifugation into 50-ml centrifuge tubes. After the microscopic remains were concentrated by centrifugation and the supernatant poured off, a heavy density mixture of zinc bromide (specific gravity 2.0) was added to the tubes. The tubes were then centrifuged at 1,400 RPM for 15 minutes. This process resulted in the separation of light organic remains, including pollen grains and parasite eggs, from heavier organic detritus. The

heavy detritus sank to the bottom of the tubes, while the light organic remains floated to the surface of the heavy density mixture. The zinc bromide with the light organic remains, which formed a dark band at the top of the tubes, was poured off. The zinc bromide was diluted with water (3 pts H<sub>2</sub>O to 1 pt ZnBr). The light organic remains in the now<sup>2</sup>-diluted supernatant were concentrated by centrifugation in 12-ml glass centrifuge tubes.

The samples were then washed twice in glacial acetic acid to remove any water, which reacts explosively to an acetolysis mixture. Following the glacial acetic washes, an acetolysis mixture (9 parts acetic anhydride to 1 part sulfuric acid) was added to the tubes, which were then heated for 20 minutes. The acetolysis treatment dissolved several organic compounds, most importantly cellulose and chitin, but did not dissolve pollen grains. After the acetolysis treatment, the soils were washed once with glacial acetic acid and then repeatedly with distilled water until the supernatant was clear. A red stain, saffronin, was then added to the samples. The samples were then washed with distilled water to remove excess stain. The stain helps in the differentiation of pollen from fungal spores. The processed samples were then transferred into vials with glycerol.

Microscopic examination of both the parasite and pollen samples was done by placing a drop of glycerol with suspended microscopic remains onto a microscope slide. A coverslip was placed over the drop and sealed with commercial nail polish. After the polish dried, the slides were examined with a binocular compound microscope. Our pollen preparations were examined at 400 power, and the parasite samples examined at 200 power. The differences in magnification were due to the generally larger size of parasite eggs, which are more easily discerned at lower magnifications in comparison to the smaller pollen grains.

The pollen and parasite eggs were counted along with the *Lycopodium* spores. With pollen, a 200-grain count is considered sufficient (Barkley 1934). The number of pollen grains per milliliter of soil was calculated based on the ratio of pollen grains to the known number of spores. At some sites, sediments either contained too few pollen grains to obtain a 200-grain count or contained too much insoluble light organics, such as charcoal, to allow for a 200-

grain count. In such cases, I counted four microscopic pollen preparations (14 mm by 14 mm cover-slip dimension) per sample. Each preparation took an average of 40 minutes to count. If, after four preparations were counted, a 200-grain count could not be achieved, counting was terminated.

## RESULTS

No samples from the Moore House contained parasite eggs. Three eggs were counted in previous samples from Skagway, from excavations on Block 39. The pollen counts are presented in table 1. No samples had a pollen concentration value approaching 1,000 grains per milliliter. All samples contained insufficient pollen preservation for a 200-grain count. All samples contained an abundance of fungal spores and hyphae. In some cases, even *Pinus* grains exhibited the "ghost grain" appearance typical of extremely poor preservation. Therefore, the pollen analysis was not fruitful. I believe that fungal attack combined with oxidation resulted in the destruction of pollen grains.

It is unfortunate that the soil conditions of the latrines did not allow for the preservation and recovery of more eggs. I suggest that the sampling of latrine sediments continues, at least for parasite remains. It is important to obtain more eggs for biometric determination of the *Trichuris* species involved since trichurids infect a great variety of animals. It would also be significant to come to some estimation of the actual numbers of eggs in well-preserved sediments to gain some insight as to whether these parasites cycled locally or were brought in by infected people from southern areas.

**Table 1: Pollen Counts from Moore House Latrine and Dumpsite**  
*(Lycopodiae were added as tracer spores for quantification.)*

	<b>PRIVY</b>	<b>DUMP: 141N98E</b>	
<b>Pollen Taxa</b>	<b>130N116E Stratum G</b>	<b>Level 3 South Wall</b>	<b>Level 3 Sample</b>
<i>Lycopodium</i>	10	14	19
Poaceae (grass)	1		
<i>Pinus</i> (Pine)		2	
<i>Picea</i> (Spruce)			1
<i>Pinus</i> bladder			1
<i>Quercus</i> (oak)			2
Cheno Am (Chenopodium) (goosefoot family; amaranth)	1	1	
High Spine Asteraceae (sunflower family)			3
Unidentifiable			
Total Pollen/ml.	226	237	418



## LITERATURE CITED

- Barkley, F.A.  
1934 The statistical theory of pollen analysis. *Ecology* 15:283-289.
- Bouchet, F., F. Audoin, N. Leger, R. Marchais, R. Baucheron, J. Munoz La Costa, and C. Guyot  
1989 Etude parasitologique des Coprolithes et des Sediments de Trois Ensembles Clos Medievaux de la Rue de Lutece (Ile de la Cite) a Paris. *Revue d'Archeometrie* 13:13-21.
- Fægri, K. and J. Iversen  
1964 *Textbook of Pollen Analysis*. 2nd edition. Blackwell, Oxford.
- Fægri, K. and Iversen, J.  
1974 *Textbook of Pollen Analysis*. 3rd edition. Blackwell, Oxford.
- Jones, A.K.G.  
1985 Trichurid Ova in Archaeological Deposits: Their Value as Indicators of Ancient Feces. *IN* N.J.R. Fieller, D.D. Gilbertson, and N.G.A. Ralph (eds): *Paleobiological Investigations: Research Design, Methods and Data Analysis*, BAR International Series 266. Oxford: British Archaeological Reports pp. 105-114.
- Moore, P.D. and Webb, J.A.  
1978 *An Illustrated Guide to Pollen Analysis*. Hodder and Stoughton, London.
- Reinhard, K.J., J.R. Ambler, and M. McGuffie  
1985 Diet and Disease at Dust Devil Cave. *American Antiquity* 50(4), pp. 819-824.
- Reinhard, K.J., S.A. Mrozowski, and K.A. Orloski  
1986 Privies, Pollen, Parasites and Seeds, a Biological Nexus in Historic Archaeology. *MASCA Journal* 4:31-36.
- Traverse, A.  
1988 *Paleopalynology*. Unwin Hyman, London.
- Warnock, Peter W., and Karl J. Reinhard  
1992 Methods of extracting pollen and parasite eggs from latrine soils. *Journal of Archaeological Science* 19:261-264.



## APPENDIX 9 - Macrobotanical Analysis of Soil Samples from the Moore House Site

Steve L. Martin  
Virginia S. Popper  
Paleoethnobotany Laboratory  
Institute of Archaeology  
University of California, Los Angeles  
March 11, 1998

### INTRODUCTION

In 1887, Ben Moore and his father constructed a cabin and a wharf on the east side of Skagway Valley, Alaska. The cabin was not occupied year round until they received financing in 1896, at which time Ben and his family completed the cabin and became the first year-round occupants in the valley. In late July 1897, stampeder began to arrive in the valley as part of the Klondike Gold Rush. At that time, people began over-running the town site, and the Moore's were forced to give up some of their land. They were allowed to fence off five acres and construct a house. The Moores lived on the property until 1907, when the Kirmse family became renters and then purchased the property in 1914. They lived there seasonally until 1977 when the property was purchased by the National Park Service.

The Moore House sat in the transition zone between the tidal flats composed largely of grasses and sedges, and the dense forest of Sitka spruce (*Picea sitchensis*) and western hemlock (*Tsuga heterophylla*), which harbored a tangled understory of berry producing shrubs. Marsh communities with associated wet meadows may have been found adjacent to streams. The glaciers that formed Skagway Valley receded about 10,000 years ago; but since the gold rush, a glacial rebound of about 1.8 m has occurred. Precipitation, at 610 mm a year, is relatively low for this part of Southeast Alaska.

Ongoing data recovery excavations conducted by the National Park Service at the Moore house and cabin site have resulted in the collection of a number of sediment samples and excavation specimens for

macrobotanical analysis. Ten samples (four preprocessed) were submitted to the Paleoethnobotany Laboratory, Institute of Archaeology, UCLA for macrobotanical analysis (table 1). Additional specimens that were handpicked during excavation were submitted for identification (table 2). Three soil samples, one of which was preprocessed (EB-1702), were collected from two dumpsites. The unprocessed sample from Unit 142N98E was recovered from a sediment matrix mainly composed of soil and tin can remnants found atop a wooden floor. Artifactual evidence appears to date the deposit to the 1920s-1930s. Two samples, one of which was processed and one not, were recovered from Unit 145N98E. The Moore house was located close to a stream that was active during the gold rush but has since filled in. Unit 145N98E is located on either side of a fence that paralleled that stream: Feature 26 (EB-1702) is on the north side of the fence, in the filled in streambed; and Level 8 (EB-1698) is on the south side of the fence. A dumpsite (Mill Creek Dumpsite) found upstream may have contaminated Unit 145N98E deposits. Artifactual evidence indicates that the sampled deposits from Unit 145N98E relate to the early use of the property (1897 to 1899).

Seven samples, three of which were preprocessed (EB-1697, 1698, 1704), were recovered from two privies. Unit 128N118E, Feature 11, Levels 7-11 represent two privies that overlap. Levels 7-9 appear to date to the Kirmse family occupation (1908-1916), whereas the lower levels (10-11) appear to represent the Moore family privy, which was found in this location from 1896-1900. Wood cribbing was present until about Level 8. Unit 130N116E, Stratum G represents the first test excavation unit into the privy and relates to Level 7 of Unit 128N118E. Unit

132N123E, Feature 11, Level 12 appears to represent the original privy on the site (1896-1900) and displayed little if any wood cribbing. An associated auger test east of the privy (EB-1701) was also analyzed.

## METHODS

Four sediment samples from privy and dump deposits underwent manual flotation in the field. Sediment was placed in a water-filled barrel, and the botanical material that floated (light fraction) was skimmed off. The light fractions were submitted to the laboratory for further analysis. Unprocessed soil samples from privy and dump deposits were processed in a mechanical flotation device at UCLA following Watson's (1976) design and processing procedure. The flotation device consisted of a 55-gallon, water-filled drum with an insert screen of 0.50-mm mesh. Soil samples of known volume were slowly poured into the partially submerged insert screen. Low density carbonized botanical remains (light fraction) floated to the surface and were directed out of the drum, via a sluice way, into chiffon netting (0.02 mm mesh). High density carbonized botanical remains were brought to the surface by the action of water agitation and stirring. This procedure was performed until no carbonized plant material was seen flowing into the netting. A siphon was then used to remove any carbonized material that had become water-logged and remained submerged (Gumerman and Umemoto 1987). Once the siphon process was completed, the netting was hung to dry and the material remaining in the insert screen (heavy fraction) was set out to dry and saved for future analysis. All heavy fractions were examined for the presence of botanical material. The recovery rate of the mechanical flotation device was tested, using the poppy seed method (Wagner 1982), and yielded recovery rates >90%.

All light fractions from the submitted samples were sifted through a series of nested sieves (2.00, 1.00, and 0.50 mm), yielding four size fractions (>2.00 mm, 2.00-1.00 mm, 1.00-0.50 mm, and <0.50 mm) in preparation for sorting. The light fraction was divided as such for two reasons. It is easier to sort material of similar size, given the shallow depth of field of the incident light binocular microscope (10-40x) employed. It also allows one to selectively

remove distinct materials from each fraction. In this analysis, carbonized wood and a similar unknown material were only removed from the >2.00 mm fraction and weighed. All other plant material was removed from the 2.00-1.00 mm and 1.00-0.50-mm fractions and counted or weighed. Material <0.50 mm in size was quickly scanned for whole seeds; however, none was present.

Some of the light fractions were very dense in botanical material and had to be subsampled. The percentage of the light fractions analyzed (weight/weight) was determined and then used to adjust sample volumes for the density (count/volume or weight/volume) calculations (tables 4 and 5).

Finally, the recovered plant remains were identified. This was achieved by comparative plant and seed collections and seed manuals located in the Paleoethnobotany Laboratory in the Institute of Archaeology at UCLA.

## RESULTS

Ten samples representing a total soil volume of 6.3 L from one dumpsite (1.0 L) and two privy deposits (5.3 L) were analyzed. The results of the macrobotanical analysis are presented in tables 3, 4, 5, and 6. Tables 3 and 4 present absolute counts and weights, whereas tables 5 and 6 present densities (counts/liter or grams/liter) for the recovered material.

A variety of seeds was recovered from the Moore House samples. The following identifiable seeds were recovered from the flotation samples: *Amelanchier* sp. (serviceberry), *Arctostaphylos uva-ursi* (bearberry), *Carex* sp. (sedge), *Chenopodium* sp. (goosefoot), *Citrullus* sp. (melon), *Cucumis* sp. (melon, cucumber), *Cyperaceae* (sedge family), *Ficus* sp. (fig), *Fragaria* sp. (strawberry), *Lycopersicon esculentum* (tomato), *Polygonum* sp. (knotweed), *Prunus* sp. (plum, cherry, apricot), *Rubus* sp. (blackberry, raspberry), *Rumex* sp. (dock), *Sambucus* sp. (elder), *Silene* sp. (catchfly), *Vaccinium* sp. (blueberry), *Verbena* sp. (vervain), *Viburnum* sp. (*V. edule* cf., high bush cranberry), and *Vitis* sp. (grape). In addition to the above taxa, the following specimens were recovered during excavations: *Cocos nucifera* (coconut), *Citrullus vulgaris*

(watermelon), *Malus* sp. (apple), *Pinus* (*P. contorta* cf.), *Prunus persica* (peach), and *Prunus armeniaca* (apricot).

Seeds are rarely identified to the species level because seeds within the same genus are often morphologically very similar. There were some seeds that could not be identified to genus and, based on morphology, were placed in the *Cyperaceae* family. Seeds that are too distorted or fragmented to classify even to the family level are placed in the unidentifiable seeds category. Identifications that carry some uncertainty are indicated as cf. Several other seeds were unknown to the analysts and are designated with unknown type numbers. Unknown type 51 is obovate, flat (2.0 x 0.6 mm), surface colliculate and shiny, longitudinal groove and remnants of an attachment present, black. Unknown type 52 shape is variable, generally obovate (2.5 x 1.1 mm), surface areolate and shiny, endosperm is spongy and papery, translucent and amber in color. Unknown type 53 is nutshell, oval (4.0 mm) longitudinal ribs, and light brown. Unknown type 55 is oval (2.0 mm), surface colliculate and marked by a network of ridges, and black. Unknown type 56 is generally obovate (3.5 mm), flat, surface covered with very thick, dense hairs, and green-brown. Unknown type 57 is obovate (4.5 mm), inner margin ridged (specimen split), surface smooth and faintly reticulate veined at apex, and light brown. Unknown type 58 is oblong (5.5 x 2.5 mm), S-shaped longitudinal groove, surface smooth and shiny, and black. Unknown type 59 is roughly ovate (4.0 mm), angular, surface pubescent, and dark brown. Unknown type 60 is oblong (4.0 x 2.0 mm), surface shiny and smooth, green (specimen deflated). Unknown type 54 is a three-seed fruit, seeds obovate, flat (2.5 x 1.0 mm), surface scalariform and shiny, and black.

All wood recovered was carbonized and too small to be identified. Other plant parts recovered include flower, leaf base, monocotyledon stem, and what appeared to be epidermis tissue. The quantity and quality of this material made identifications impossible. Plant parts that could not be placed in general morphological categories are designated as unknown plant part(s). A relatively large amount of an unknown material that can best be described as coal was recovered from a number of samples.

Since the soil volumes of the pre-processed and flotation samples varied, density values were calculated to allow for comparisons across all samples. The density values are presented in tables 5 and 6. The extreme range in seed density totals (113 to 92,614 for the dump site samples and 311 to 117,847 for the privy samples) reflects: a) the excellent state of preservation and recent age of the deposits, b) the nature of the deposits (dense refuse and human feces), c) types of plants represented (i.e., high seed producers), and d) the sampling strategy. Even though the sample sizes were relatively small (most <1.0 L), many still required subsampling.

## DISCUSSION

The one sample recovered from a sediment matrix mainly composed of soil and tin can remnants found atop a wooden floor yielded the least plant material (142N98E). In fact, *Ficus* sp. is the only edible food plant represented. Artifactual evidence appears to date the deposit to the 1920s-1930s, a time when it is speculated that canned goods were being heavily relied upon.

Two samples were recovered from Unit 145N98E. The Moore house was located close to a stream that was active during the gold rush, but has since filled in. Unit 145N98E is located on each side of a fence that paralleled that stream: Feature 26, Level 3 is on the north side of the fence in the filled in streambed and Level 8 on the south side of the fence. A dumpsite (Mill Creek Dumpsite) found about 30 m upstream may have contaminated Unit 145N98E deposits. Artifactual evidence indicates that the sampled deposits from Unit 145N98E relate to the early use of the property (1897 to 1899). Feature 26 yielded a number of seeds representing food items including tomato (*Lycopersicon esculentum*), which cannot be cultivated in the Skagway region without the use of a hothouse. Seed totals are dominated by *Rubus* sp., whose fruit ripens in the summer or early fall and produces between 300 to 1,000 seeds/gram (Young and Young 1992:307). *Polygonum* sp. (knotweed), *Rumex* sp. (dock), *Silene* sp. (catchfly), and *Verbena* sp. (vervain) are all weedy plants that thrive in disturbed places. Many species of these plants prefer moist habitats and would have been found along the nearby stream. Specimens were



handpicked from Unit 145N98E during excavations and include *Prunus* sp. (apricot cf.) from Level 8 and a *Cocos nucifera* (coconut) shell fragment from Level 3 of Feature 26. Most of the berries recovered from the Moore House samples represent genera that are found locally (e.g., *Fragaria* sp., *Rubus* sp., *Vaccinium* sp.), making it difficult to determine their source. Whether the berries recovered here were harvested from the wild, cultivated, or imported is difficult to assess and is better determined through an analysis of the historical records.

The samples recovered from the privies appeared to be composed primarily of human feces. The samples were homogenous in color and texture and had small pieces of newsprint intermixed throughout. Unit 128N118E, Feature 11, Levels 7-11 represent two privies that overlap. Levels 7-9 appear to date to the Kirmse family occupation (1908-1916), whereas the lower levels (10-11) appear to represent the Moore family privy, which was found in this location, from 1896-1900. Wood cribbing was seen until about Level 8. Unit 128N118E yielded the highest seed density totals. Again, most of the seeds recovered are from plants that produce fruits comprised of large numbers of relatively small seeds. The samples were dominated by *Fragaria* sp., *Rubus* sp., and Unknown type 52. These were followed by *Ficus* sp., *L. esculentum*, and *Vaccinium* sp. Larger seeds were hand-picked during excavations from Level 11 and include: *Citrullus* sp. (melon), *Citrullus vulgaris* (watermelon), *Cucumis* sp. (melon, cucumber), *Prunus* spp. (peach, plum, cherry, apricot), *Viburnum* sp. (high bush cranberry), and *Vitis* sp. (grape), and *Malus* sp. (apple). A *Pinus* sp. (*P. contorta* cf.) ovulate cone was also hand-picked during excavations of this unit. Whether these specimens were recovered from privy deposits proper or from associated refuse is uncertain. It is unlikely that the large *Prunus* and *Pinus* came from feces. However, the flotation samples, with their abundant small berry seeds, few large seeds, and lack of other food and cooking waste, uniformly suggest that the privies were not used as sites for general refuse disposal. The seeds of *Chenopodium* sp. (goosefoot), *Polygonum* sp., *Rumex* sp., and *Silene* sp. all represent weedy plants whose seeds were more than likely blown into the privies. The seeds of *Amelanchier* sp. (serviceberry) and *Viburnum* sp. (*V. edule* cf.) represent wild berries which may have been consumed; however, the seeds of *Viburnum* sp. that were

hand-picked during excavations were often associated with pericarp, suggesting they were not eaten.

Unit 130N116E, Stratum G represents the first test excavation unit into the privy and relates to Level 7 of Unit 128N118E whose seed assemblage is rather similar. The only difference is the presence of *Carex* sp. (sedge) and Cyperaceae (sedge family) which, along with *Verbena* sp., more than likely represent weedy plants whose seeds were blown into the privies. Excavation specimens recovered from Unit 130N116E include *Vitis* sp. and *Rubus* sp.

Unit 132N123E, Feature 11, Level 12 appears to represent the original privy on the site (1896-1900) and displayed little if any wood cribbing. It yielded similar taxa to Unit 128N118E. An associated auger test in Unit 132N123E east of the privy was also analyzed. Very low seed densities were found there; however, the taxa recovered are similar to those found in the other privy units. The only new taxa from this unit were *Arctostaphylos uva-ursi* (bearberry) and *Sambucus* sp. (elderberry), both of which represent wild berries. Excavation specimens recovered from Unit 132N123E include *Viburnum* sp. and *Prunus* sp. (cherry).

Three types of plants are represented in the dump and the privy samples analyzed here. First, and most abundant, are the wild berries (*Amelanchier* sp., *Arctostaphylos uva-ursi*, *Fragaria* sp., *Rubus* sp., *Sambucus* sp., *Vaccinium* sp., and *Viburnum* sp.) which may have been imported, cultivated, or collected locally. They could have been consumed fresh, cooked in pies, dried, canned, or preserved in jams and jellies. Second, are the weedy plants (*Carex* sp., *Chenopodium* sp., Cyperaceae, *Polygonum* sp., *Rumex* sp., *Silene* sp., and *Verbena* sp.), which produce large numbers of small seeds. These plants thrive in disturbed soils and would have been common around the residence. Third, are the domesticated fruits (*Citrullus* sp., *Cucumis* sp., *Ficus* sp., *L. esculentum*, *Prunus* spp. (peach, plum, cherry, apricot), *Vitis* sp., and *Malus* sp.) that were more than likely imported. Coconut (*Cocos nucifera*) was the only nut recovered. The paucity of other plant parts and wood charcoal from the privy flotation samples suggests that the privies were largely composed of feces and were not sites of general refuse disposal. The weedy seeds and plant parts all probably represent wind blown contamination.

The results presented here are consistent with those from other historic privy sites in Skagway, Alaska. Macrofloral remains recovered from a coprolite found in a privy associated with the resident Roman Catholic priest's rectory (1903-1914) in Skagway yielded the same taxa in similar quantities (Cummings and Puseman 1993). A trash level from the same privy yielded larger remains: the nutshell of *Corylus* sp. (hazelnut) and the pits of *Prunus* spp. (peach and plum), and *Olea europaea* (olive). Puseman (1995) identified the same taxa, as found in this study, from the fill of four privies from Skagway dating from 1897 to 1920. The only additional taxa present were *Cucurbita* sp. (squash) fragments and a Lamiaceae (mint family) seed. The presence of relatively large amounts of wood, charcoal and other non-plant remains (e.g., insects, glass, and bone) suggest that some dumping may have occurred in these privies.

Overall, the results from this and previous analyses suggest that the diet changed little, at least in the items preserved in the archaeological record, during the time period (1897-1920) and varied little between residencies. Although coprolites and fecal deposits offer direct evidence of diet, they are by no means a complete and unambiguous source of such information. Only the indigestible parts of items consumed can be recovered and various items may not have been consumed for their nutritive value but for medicinal purposes. All of the seeds recovered in this study from the privy deposits come from wild and imported fruits. Vegetables and grains were surely consumed as pollen and phytolith analyses indicate (Cummings and Puseman 1993); however, the whole seeds of these items are rarely eaten.

**Table 1 - Provenience Information for the Analyzed Samples from the Moore House Site**

EB No. <sup>a</sup>	Unit	Level	Feature	Volume (L)	Comment
1697	128N118E	7	11	0.6	Pre-processed
1699	128N118E	8	11	0.1	Pre-processed
1704	128N118E	10	11	1.3	
1695	128N118E	11	11	0.2	Pre-processed
1696	130N116E			0.2	Stratum G
1703	132N123E	12	11	0.9	
1701	132N123E			2.0	Auger test east of privy
1700	142N098E	3		0.2	
1702	145N098E	3	26	0.6	Pre-processed
1698	145N098E	8		0.2	

<sup>a</sup> The EB number is the accession number of the UCLA Paleoethnobotany Laboratory.

**Table 2 - Macrobotanical Specimens Recovered During Excavations of the Moore House Site**

EB No. <sup>a</sup>	Unit	Feature	Level	Artifact No.	Deposit Type	Identification	Common Name(s)
1675	145N098E	-	8	5999	Dump	<i>Prunus</i> sp. ( <i>P. armeniaca</i> cf. )	Apricot cf.
1676	145N098E	-	9	6048	Dump	Unknown dried fruit (not cherry)	
1691	145N098E	26	3	6087	Dump	<i>Cocos nucifera</i>	Coconut
1693	132N123E	11	11	-	Privy	<i>Viburnum</i> sp. ( <i>V. edule</i> cf.)	High bush cranberry
1692	132N123E	11	12	-	Privy	<i>Prunus</i> sp.	Cherry
1694	128N118E	11	6	-	Privy	Unknown	
1679	128N118E	11	9	904	Privy	Cemented sediment	
1671	128N118E	11	11	937	Privy	<i>Prunus armeniaca</i>	Apricot
1672	128N118E	11	11	938	Privy	<i>Prunus armeniaca</i>	Apricot
1673	128N118E	11	11	939	Privy	Unknown	
1689	128N118E	11	11	940	Privy	<i>Prunus</i> sp.	Cherry
1690	128N118E	11	11	941	Privy	<i>Citrullus vulgaris</i>	Watermelon
1674	128N118E	11	11	942	Privy	<i>Prunus persica</i>	Peach
1688	128N118E	11	11	963	Privy	Unknown material	
1686	128N118E	11	11	964	Privy	<i>Pinus</i> sp. ( <i>P. contorta</i> cf.)	Lodgepole pine
1687	128N118E	11	11	964	Privy	<i>Cucumis</i> sp.	Melon
1683	128N118E	11	11	966	Privy	<i>Viburnum</i> sp. ( <i>V. edule</i> cf.)	High bush cranberry
1684	128N118E	11	11	968	Privy	<i>Vitus</i> sp.	Grape
1685	128N118E	11	11	969	Privy	<i>Citrullus vulgaris</i>	Watermelon
1680	128N118E	11	11	971	Privy	<i>Rubus</i> sp.	Blackberry, raspberry
1682	128N118E	11	11	972	Privy	<i>Malus</i> sp.	Apple
1681	128N118E	11	11	975	Privy	Insect pupa	
1678	130N116E	11	11	258	Privy	<i>Vitus</i> sp. and <i>Rubus</i> sp.	Grape and blackberry, raspberry

<sup>a</sup> The EB number is the accession number of the UCLA Paleoethnobotany Laboratory.

**Table 3 - Plant Material Absolute Counts and Weights (g)  
from the Moore House Dump**

	Unit		
	142N98E	145N98E	
TYPE	Level 3	Level 3	Level 8
SEEDS			
<i>Ficus</i> sp.	2	25	1
<i>Fragaria</i> sp.		2	3
<i>Lycopersicon esculentum</i>		4	
<i>Polygonum</i> sp.		2	
<i>Rubus</i> sp.		248	1923
<i>Rumex</i> sp.		7	
<i>Silene</i> sp.	9	1	
<i>Vaccinium</i> sp.			1
<i>Verbena</i> sp.	1		
Unknown type 51			1
Unidentifiable seeds	5		2
Seed Total <sup>a</sup>	17	289	1931
PLANT PARTS <sup>b</sup>			
Wood	0.13		0.02
Flower			1
Epidermis		+	+
Monocotyledon stem			1
Unknown material	1.74	0.01	0.77

<sup>a</sup> Seed total includes unidentifiable seeds and fragments.

<sup>b</sup> Weights are (in grams) except for flower and stem.

+ Numerous fragments present

Table 4. Plant Material Absolute Counts and Weights (g) from the Moore House Site Privies

	Unit						
	128N118E				130N116E	132N123E	
	Level					Level	
TYPE	7	8	10	11	Stratum G	12	Auger test
<b>SEEDS</b>							
<i>Amelanchier</i> sp.			4				
<i>Arctostaphylos uva-ursi</i>							5
<i>Carex</i> sp.					1		
<i>Chenopodium</i> sp.	2	9			3		
<i>Citrullus</i> sp. cf.			1				
<i>Cucumis</i> sp.			4				
Cyperaceae					1		1
Cyperaceae cf.					1		
<i>Ficus</i> sp.	24	67		11	36	420	2
<i>Fragaria</i> sp.	522	358	3	28	313	17	2
<i>Lycopersicon esculentum</i>	27	50			71		
<i>Polygonum</i> sp.		2	5	1			
<i>Prunus</i> sp.						26	
<i>Rubus</i> sp.	325	132	3	575	242	26	75
<i>Rumex</i> sp.	17	2	1				
<i>Sambucus</i> sp.							2
<i>Silene</i> sp.	8	7	1		3		
<i>Vaccinium</i> sp.		9	1	42	18	305	2
<i>Verbena</i> sp.					28	2	
<i>Viburnum</i> sp.			2			51	3
<i>Vitus</i> sp.	15	15	9		12	60	35
Unknown type 51		1					
Unknown type 52			77	206			1
Unknown type 53			3				
Unknown type 55		3					
Unknown type 56			6				
Unknown type 57							1
Unknown type 58							5
Unknown type 59						1	
Unknown type 60						1	
Unidentifiable seeds		13		2	6		
<b>Seed Total<sup>a</sup></b>	940	668	120	865	735	909	134
<b>PLANT PARTS<sup>b</sup></b>							
Wood		0.05	0.04		<0.01		0.01
Flower						1	1
Leaf base	1						
Unknown type 54			3				
Unknown plant part(s)		2		3	5		
Unknown material			12				

<sup>a</sup> Seed total includes unidentifiable seeds and fragments. <sup>b</sup> Weights (in grams) for wood only.



**Table 5 - Plant Material Densities (counts/liter or grams/liter)  
from the Moore House Site Dump**

	Unit		
Type	142N98E Level 3	145N98E	
		Feat. 26, level 3	Level 8
SEEDS			
<i>Ficus</i> sp.	13	1623	48
<i>Fragaria</i> sp.		130	144
<i>Lycopersicon esculentum</i>		260	
<i>Polygonum</i> sp.		130	
<i>Rubus</i> sp.		16104	92230
<i>Rumex</i> sp.		455	
<i>Silene</i> sp.	60	65	
<i>Vaccinium</i> sp.			48
<i>Verbena</i> sp.	7		
Unknown type 51			48
Unidentifiable seeds	33		96
Seed Total <sup>a</sup>	113	18767	92614
PLANT PARTS <sup>b</sup>			
Wood	0.87		0.96
Flower			48
Epidermis		+	+
Monocotyledon stem			48
Unknown material	11.6	0.67	37.0

<sup>a</sup> Seed total includes unidentifiable seeds and fragments.

<sup>b</sup> Weight density (grams/liter) except for flower and stem.

+ Numerous fragments.

Table 6 - Plant Material Densities (counts/liter or grams/liter) from the Moore House Site, Privies

TYPE	Unit						
	128N118E				130N116E	132N123E	
	Level					Level	
	7	8	10	11	Stratum G	12	Auger test
<b>SEEDS</b>							
<i>Amelanchier</i> sp.			15				
<i>Arctostaphylos</i> sp.							12
<i>Carex</i> sp.					5		
<i>Chenopodium</i> sp.	126	552			115		
<i>Citrullus</i> sp. cf.			4				
<i>Cucumis</i> sp.			15				
Cyperaceae					5		2
Cyperaceae cf.					5		
<i>Ficus</i> sp.	1509	4110		1499	180	4667	5
<i>Fragaria</i> sp.	32830	21963	12	3815	1565	189	5
<i>Lycopersicon esculentum</i>	1698	3068			355		
<i>Polygonum</i> sp.		123	19	136			
<i>Prunus</i> sp.						289	
<i>Rubus</i> sp.	20440	8098	12	78338	1210	289	174
<i>Rumex</i> sp.	1069	123	4				
<i>Sambucus</i> sp.							5
<i>Silene</i> sp.	503	429	4		15		
<i>Vaccinium</i> sp.		552	4	5722	90	3389	5
<i>Verbena</i> sp.					140	22	
<i>Viburnum</i> sp.			8			567	7
<i>Vitis</i> sp.	943	920	35		60	667	81
Unknown type 51		61					
Unknown type 52			296	28065			
Unknown type 53			12				
Unknown type 55		184					
Unknown type 56			23				2
Unknown type 57							2
Unknown type 58							12
Unknown type 59						11	
Unknown type 60						11	
Unidentifiable seeds		798		272	30		
<b>Seed Total <sup>a</sup></b>	59,118	40,981	462	117,847	3,775	10,101	301
<b>PLANT PARTS <sup>b</sup></b>							
Wood		3.07	0.15		<0.05		0.02
Flower						11	2
Leaf base	63						
Unknown type 54			12				
Unknown plant part(s)		123		409	25		
Unknown material			46				

<sup>a</sup> Seed total includes unidentifiable seeds and fragments.<sup>b</sup> Weight density (grams/liter) for wood only.

## REFERENCES CITED

Cummings, Linda Scott, and Kathryn Puseman

- 1993 Appendix A: Pollen, Phytolith, Macrofloral, Parasite Analysis of the Privy Deposit and Identification of Macrofloral Remains from the Trash Deposits. In *Father Turnell's Trash Pit, Klondike Gold Rush, National Historical Park, Alaska*, by Catherine Holder Spude, Douglas D. Scott, and Frank Norris, pp. 115-124. Archaeological Investigations in Skagway, Alaska, Vol. 4, United States Department of the Interior, National Park Service, Denver Service Center.

Gumerman, George, IV, and Bruce S. Umento

- 1987 The Siphon Technique: An Addition to the Flotation Process. *American Antiquity* 52(2):330-336.

Puseman, Kathryn

- 1995 Macrofloral Analysis of Four Privies from Lot 39, Klondike Gold Rush National Historical Park, Skagway, Alaska. Paleo Research Labs Technical Report 94-76. Report prepared for National Park Service, Klondike Gold Rush National Historical Park, Skagway, Alaska.

Wagner, Gail E.

- 1982 Testing Flotation Recovery Rates. *American Antiquity* 47:127-132.

Watson, Patty Jo

- 1976 In Pursuit of the Past: A Comparative Account of Some Contemporary Flotation Techniques. *Mid-Continental Journal of Archaeology* 1(1):77-100.

Young, James A., and Cheryl G. Young

- 1992 *Seeds of Woody Plants in North America*. Dioscordes Press, Portland, Oregon.



## APPENDIX 10 - Non-Food Related Artifacts, by Fragment Count

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
<b>HOUSEHOLD ARTIFACTS:</b>																
<u>Household Hardware</u>																
Bracket, shelf		1													1	3%
Chest/box hdwr			2			1		1	2						6	17%
Clamp								2							2	6%
Door, hasp			1												1	3%
Drawer pull			1		1										2	6%
Hrdwre, dec. (prssd mtl, rvt, scrw, tack, etc.)		2	1			7	1								11	31%
Handle, bail						1		1		1					3	8%
Handle, rope												1			1	3%
Hook, coat						1									1	3%
Hook, cup									2						2	6%
Key, skeleton						1			1						2	6%
Window covrng--shade brkt, crtn rod			2				1					1			4	11%
<b>HH Subtotal</b>	0	3	7	0	1	11	2	4	5	1	0	2	0	0	<b>36</b>	<b>4%</b>
<b>Subtotal (%)</b>	0%	8%	19%	0%	3%	31%	6%	11%	14%	3%	0%	6%	0%	0%		
<u>Furniture</u>																
Castor						1			2						3	21%
Chair, leg cap												1			1	7%
Spring, furniture					2				1			2			5	36%
Stove part					1	1					1	1			4	29%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Upholstery snap								1							1	7%
<b>Furniture Subtotal</b>	0	0	0	0	3	2	0	1	3	0	1	4	0	0	14	1%
<b>Subtotal (%)</b>	0%	0%	0%	0%	21%	14%	0%	7%	21%	0%	7%	29%	0%	0%		
<u>Fixed Furnishings</u>																
Linoleum						2		4							6	32%
Plaster, dec.	9								1						10	53%
Tack, carpet								2							2	11%
Wallpaper												1			1	5%
<b>Fixed Fur. Subtotal</b>	9	0	0	0	0	2	0	6	1	0	0	1	0	0	19	2%
<b>Subtotal (%)</b>	47%	0%	0%	0%	0%	11%	0%	32%	5%	0%	0%	5%	0%	0%		
<u>Portable Furnishings</u>																
Bowl, ceramic					6	25									31	18%
Bowl, dec.porc.	1	2	1			32	1		6						43	26%
Bowl, redware						1									1	1%
Bowl, dec.glass						14			1			2			17	10%
Glass, dec.	1	2	2		3	5	4					4			21	13%
Glass bird								1							1	1%
Jar, porcelain						12									12	7%
Vase, porcelain		2						9				1			12	7%
Figurine, animl (leg), bisque									4						4	2%
Marble, WW, undec.									2			1			3	2%
Picture frame parts		1	1				1								3	2%
Mirror		12				2									14	8%
Clock gear					1			1		1					3	2%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Letter box, mtl						1									1	1%
Plas. plnt leaf		2													2	1%
<b>Port Fur. Subtotal</b>	2	21	4	0	10	92	6	11	13	1	0	8	0	0	<b>168</b>	<b>18%</b>
<b>Subtotal (%)</b>	1%	13%	2%	0%	6%	55%	4%	7%	8%	1%	0%	5%	0%	0%		
<u>Home Maintenance:</u>																
Bucket handle											3				3	1%
Clthspn, wooden										1					1	0%
Clthspin spring		1			3	1	1	4			1			5	16	6%
Clorox bottle	4	4			8										16	6%
Hshld bttl (amb)	1	3	5		6		4				2	1			22	9%
Hushld bttl (honey amber)		1													1	0%
Hshld bttl,plsh							26		2						28	11%
Can-hshldclnsr, polish, etc.							13	30	15			6			64	25%
Can, paint		15				13		14				48			90	36%
Paint chip	2	1	1					2							6	2%
Scissors						1									1	0%
Copper mesh filter									4						4	2%
<b>Home Maint. Subtotal</b>	7	25	6	0	17	15	44	50	21	1	6	55	0	5	<b>252</b>	<b>27%</b>
<b>Subtotal (%)</b>	3%	10%	2%	0%	7%	6%	17%	20%	8%	0%	2%	22%	0%	2%		
<u>Lighting</u>																
Electrode, graphite						2									2	1%
Kerosene lamp part						3							1		4	1%
Lamp chimney			2		2	8						3	7		22	6%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Lampshade, glass	1	1	1			64		2	5	147		2	8		231	67%
Lightbulb, elec.	7	14	3		3	6		17	2		5	14	4	1	76	22%
Elec. lamp part									5			1			6	2%
Wire, electric								2							2	1%
<b>Lighting Subtotal</b>	8	15	6	0	5	83	0	21	12	147	5	20	20	1	<b>343</b>	<b>36%</b>
<b>Subtotal (%)</b>	2%	4%	2%	0%	1%	24%	0%	6%	3%	43%	1%	6%	6%	0%		
<u>Heating</u>																
Can, kerosene		1					1								2	2%
Charcoal	x	x	x		x	x	x	x	x	x	x		x		0	
Coal	12	3	6		7	12	30	15	6			21			112	96%
Mica		1							1		1				3	3%
<b>Heating Subtotal</b>	12	5	6	0	7	12	31	15	7	0	1	21	0	0	<b>117</b>	<b>12%</b>
<b>Subtotal (%)</b>	10%	4%	5%	0%	6%	10%	26%	13%	6%	0%	1%	18%	0%	0%		
<b>TOTAL HOUSEHOLD</b>	38	69	29	0	43	217	83	108	62	150	13	111	20	6	<b>949</b>	
<b>TOTAL HSEHLD (%)</b>	4%	7%	3%	0%	5%	23%	9%	11%	7%	16%	1%	12%	2%	1%		
<b>PERSONAL ARTIFACTS:</b>																
<u>Medicine</u>																
--Whole Bottles--																
Colorless SCA:																
"Philadelphia," "Hub" "Blake" or "Buffalo" oval --																
2 oz.		1						11		26		3			41	53%
4 oz.								2		14					16	21%
6 oz.										7					7	9%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
"Prima" oval, graduated, 4 oz.								1							1	1%
Manhattan oval --																
2 oz.								1		2					3	4%
3 oz.										1					1	1%
Aqua, 2 oz. "Blake"										1					1	1%
Cobalt "Bromo-Seltzer" --																
2 oz.										3					3	4%
4 oz.										1					1	1%
5 oz.										1					1	1%
Amber cyl 3/4 oz. "Corn cure" vial		1													1	1%
White "Mentholatum" jar												1			1	1%
<i>Subtotal</i>	0	2	0	0	0	0	0	15	0	56	0	4	0	0	77	24%
<b>--Fragmentary Bottles--</b>																
Stopper, tincture							1								1	0%
Aqua--																
Cylindrical						1									1	0%
Indented panel, embossed letters													5		5	2%
Indented panel, unembossed					2										2	1%
Maguire Med Co. embssd		1													1	0%
Sq/Rectangular		1				1									2	1%
Amber--																
Indented panel, unembossed	1														1	0%
Sq/rectangular	1														1	0%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Unknown shape			2		1										3	1%
Jar								1							1	0
Cobalt--																
Bromo Seltzer									1						1	0%
Cylindrical	1					2									3	1%
Unknown shape			2										1		3	1%
Vial, poison					4										4	2%
Colorless, Selenium--																
Indented panel, unembossed													1		1	0%
Oval						5									5	2%
Colorless, SCA--																
Cylindrical						11									11	5%
Indented panel, unembossed			1		2	31			1						35	15%
Indented panel, embossed							8								8	3%
Oval						5			34	26					65	28%
Sq/rectangular						6		3	24						33	14%
Unknown shape						7			1	6		2			16	7%
Vial, round						1									1	0%
Vial, square									1						1	0%
Jar												1			1	0%
Colorless, unk. comp-																
Indented panel, embossed ltrs													1		1	0%
Indented panel, unembossed					6		1		1						8	3%
Oval									1						1	0%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Sq/rectangular		4				2								1	7	3%
Unknown shape		1			2	1									4	2%
Jar, ground lip					1										1	0%
White glass																
“Mentholatum” jar												1			1	0%
<i>Subtotal</i>	3	7	5	0	18	73	10	4	64	32	0	4	8	1	229	72%
<i>--Miscellaneous Medical--</i>																
Funnel, black rubber										1					1	10%
Pipette					1		1								2	20%
Syringe, black										4					4	40%
Thermometer	1		2												3	30%
<i>Misc. Med. Subtotal</i>	1	0	2	0	1	0	1	0	0	5	0	0	0	0	10	3%
<i>Subtotal (%)</i>	10%	0%	20%	0%	10%	0%	10%	0%	0%	50%	0%	0%	0%	0%		
<b><i>Medicine Subtotal</i></b>	4	9	7	0	19	73	11	19	64	93	0	8	8	1	<b>316</b>	<b>31%</b>
<b><i>Subtotal (%)</i></b>	1%	3%	2%	0%	6%	23%	3%	6%	20%	29%	0%	3%	3%	0%		
<u>Grooming &amp; Hygiene</u>																
Bobbin, wooden								1							1	0%
Can, powder						11						7			18	8%
Can, powder, sprinkler lid							1								1	0%
Can, unid. toiletry						14									14	6%
Can, unid. toiletry, non-sprinkler lid												1			1	0%
Can, shoe polish					1					16					17	7%
Chamberware		12						1							13	6%
Comb		2													2	1%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Haircomb, tortoiseshell	1														1	0%
Insect repellent												1			1	0%
Mirror						10			1						11	5%
Safety pin	1				1	2		4				1		2	11	5%
Scissors								1							1	0%
Bottle, Listerine						3									3	1%
Bottle, aqua--																
Sq/rect, embossed panel							1								1	0%
Sq/rect, <4 oz.						3									3	1%
Bottle, citron green, sq./rect.		2	1												3	1%
Bottle, colorless--																
SCA, sq/rect					2			1				3	4		10	4%
SCA, 6 oz. oval, embossed: <i>Paul West-phal/Auxiliator/ For the Hair/New York</i>						1									1	0%
Lead, cylindrical								1							1	0%
Selenium, cyl						3									3	1%
Selenium, sq/rect		1													1	0%
Bottle, perfume																
"Crown Perfumery", whole w/stopper								1							1	0%
Colorless w/stopper												2			2	1%
Stopper, decorative					1				1						2	1%
Flask, opaque wh glass		2				34						3			39	17%
Jar, colorless SCA--																
Cyl, <3 oz.								2				1			3	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Oval, 6 oz.			2			7									9	4%
Oval lid to 6 oz. jar		1				1									2	1%
Container, white glass	2	8	2		1	6	4	4	1			1	3		32	14%
Jar, white glass-																
Wide-mouth						1									1	0%
Cyl., <4 oz.			1		1							1	3		6	3%
Vial, colorless cyl., "essential oil" w/glass rod		20													20	9%
<b>Grooming &amp; Hygiene Subtotal</b>	4	48	6	0	7	96	6	16	3	16	0	21	10	2	235	23%
<b>Subtotal (%)</b>	2%	20%	3%	0%	3%	41%	3%	7%	1%	7%	0%	9%	4%	1%		
<u>Personal/Adornment</u>																
<i>Jewelry--</i>																
Bead, glass		1	1			2			2	1					7	19%
Bead, seed						1									1	3%
Charm						1									1	3%
Disc, shell						1									1	3%
Earring/Pendant		2													2	5%
Pin, decorative			2						1						3	8%
Wire									14	1					15	41%
Unknown type						3			1						4	11%
Pocket knife												1			1	3%
Pocket watch						2									2	5%
<b>Persnal/Adornment Subtotal</b>	0	3	3	0	0	10	0	0	18	2	0	1	0	0	37	4%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
<i>Subtotal (%)</i>	0%	8%	8%	0%	0%	27%	0%	0%	49%	5%	0%	3%	0%	0%		
<u>Clothing</u>																
Belt, leather												4			4	2%
Belt, silk										6					6	3%
Buckle, decorated						1									1	0%
Buckle, plain								3	3			1			7	3%
<i>Fasteners--</i>																
Button, decorated					1	3			11		1	3			19	8%
Button, plain	1	4	4			14	1	6	18	2	1	1		1	53	23%
Rivet, copper									11						11	5%
Garter						2			7						9	4%
1885 "Garment Supporter"									2						2	1%
Hook & eye						1									1	0%
Slide (suspender)						3		3	3						9	4%
Snap						1									1	0%
<i>Garments--</i>																
Blouse, silk	1														1	0%
Raingear										3					3	1%
Sock, black knit												1			1	0%
Textile, unidentified							2			1		12			15	7%
Tie, men's silk										1					1	0%
Vest, wool										5					5	2%
Yarn			1												1	0%
<i>Footwear--</i>																

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Eyelet/grommet					1	4		4	10						19	8%
Leather fragments									2						2	1%
Leather, high-top										8		36			44	19%
Moccasin fragment			1												1	0%
Shoe, heel		1									2				3	1%
Shoe, sole, adult											1	1	1		3	1%
Shoe, sole, child						1						1			2	1%
Shoe nail						1						1			2	1%
<b><i>Clothing Subtotal</i></b>	2	5	6	0	2	31	3	16	67	26	5	61	1	1	<b>226</b>	<b>22%</b>
<b><i>Subtotal (%)</i></b>	1%	2%	3%	0%	1%	14%	1%	7%	30%	12%	2%	27%	0%	0%		
<u>Leisure/Indulgences</u>																
<i>Adult--</i>																
Dice, bone	1														1	1%
Record, phonograph		7	6			3									16	14%
<i>Tobacco:</i>																
Can						1						10			11	9%
Humidor, glass					4	3									7	6%
<i>Child--</i>																
Animal, cast iron			1												1	1%
Block, wooden alphabet												2			2	2%
Doll parts, porcelain	1	3	2		2	22	1	3	11			4			49	42%
Doll cup, porcelain			1						3		3				7	6%
Doll plate, porcelain							1		1						2	2%
Marble	1	2			2				1			3			9	8%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Plastic soldier		1													1	1%
Plastic bubble bottle		1				1									2	2%
Wheel						1									1	1%
Whistle, bronze	1														1	1%
Wooden tinker toy												1			1	1%
<i>Unknown adult/child-</i>																
Ball, rubber		1			1				3						5	4%
Collar, dog			1												1	1%
Telescope, pocket						1									1	1%
<b><i>Lsre/Indulgences Subtotal</i></b>	4	15	11	0	9	32	2	3	19	0	3	20	0	0	<b>118</b>	<b>11%</b>
<b><i>Subtotal (%)</i></b>	3%	13%	8%	0%	8%	27%	2%	3%	16%	0%	3%	17%	0%	0%		
<u>Personal, Unident. Function</u>																
Can, sq./rectang.						1									1	1%
Can, unidentifiable	2					2									4	4%
Container, pale amber glass						5							1		6	6%
Container, aqua glass	1	3			2								1		7	7%
Container, colorless flint/lead glass					2										2	2%
Container, clorless SCA	1	3	17		3	1							1		26	27%
Container, clorless sel			1									2	1		4	4%
Container, clrless glass, comp. unk.	6	4	5		2	8		3				1	10		39	40%
Container, plastic	1														1	1%
Copper band						3									3	3%
Glass, beehive-shaped						3									3	3%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Wrapper, plastic		2													2	2%
<i>Personal Unid. Function Subtotal</i>	11	12	23	0	9	23	0	3	0	0	0	3	14	0	<b>98</b>	<b>10%</b>
<i>Subtotal (%)</i>	11%	12%	23%	0%	9%	23%	0%	3%	0%	0%	0%	3%	14%	0%		
<b>TOTAL PERSONAL ARTIFACTS</b>	25	92	56	0	46	265	22	57	171	137	8	114	33	4	<b>1,030</b>	
<b>TOTAL PERSONAL ARTIFACTS (%)</b>	2%	9%	5%	0%	4%	26%	2%	6%	17%	13%	1%	11%	3%	0%		
<b>SPECIAL FUNCTION ARTIFACTS:</b>																
<u>Munitions</u>																
Bullet												1		1	2	4%
Cartridge, ctr-fire		3			1	1		1		1		1			8	17%
Cartridge, rim-fire	1	3	1		4	5		2	6	1		8	3	1	35	73%
Shell, shotgun		1													1	2%
Gun part								1							1	2%
BB shell can												1			1	2%
<i>Munitions subtotal</i>	1	7	1	0	5	6	0	4	6	2	0	11	3	2	<b>48</b>	<b>10%</b>
<i>Subtotal (%)</i>	2%	15%	2%	0%	10%	13%	0%	8%	13%	4%	0%	23%	6%	4%		
<u>Communications</u>																
Insulator, glass													1		1	3%
Book page fragments										4					4	10%
Newspaper fragments										25		7			32	80%
Linotype		1											1		2	5%
Radio tube						1									1	3%



Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
<i>Communications Subtotal</i>	0	1	0	0	0	1	0	0	0	29	0	7	2	0	40	8%
<i>Subtotal (%)</i>	0%	3%	0%	0%	0%	3%	0%	0%	0%	73%	0%	18%	5%	0%		
<u>Bulk Storage</u>																
Bag, burlap										4		1			5	8%
Band, metal		1				2		10							13	22%
Crate, packing			8							1		2	1		12	20%
Padlock													1		1	2%
String												2			2	3%
Styrofoam packing	2	1						1						3	7	12%
Wire, bailing		5			1										6	10%
Wrapper, plastic	5	5										1		3	14	23%
<i>Bulk Storage Subtotal</i>	7	12	8	0	1	2	0	11	0	5	0	6	2	6	60	
<i>Subtotal (%)</i>	12%	20%	13%	0%	2%	3%	0%	18%	0%	8%	0%	10%	3%	10%		
<u>Office Supplies</u>																
Bottle, mucilage										1					1	11%
Fastener, paper									2						2	22%
Pencil			1		1				1			1			4	44%
Rubber band										1					1	11%
Tape, adhesive												1			1	11%
<i>Office Supplies Subtotal</i>	0	0	1	0	1	0	0	0	3	2	0	2	0	0	9	2%
<i>Subtotal (%)</i>	0%	0%	11%	0%	11%	0%	0%	0%	33%	22%	0%	22%	0%	0%		
<u>Economic Activity</u>																
Bone, worked						1									1	5%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Coin, penny	1							1							2	10%
Crucible									1			1			2	10%
Cup, souvenir	1					6	2								9	43%
Pin, Kirmse swastika						1							1		2	10%
Pin, Kirmse totem						1									1	5%
Token, Nome RR													1		1	5%
Token, unidentifiable		1	1		1										3	14%
<b>Economic Activity Subtotal</b>	2	1	1	0	1	9	2	1	1	0	0	1	2	0	21	4%
<b>Subtotal (%)</b>	10%	5%	5%	0%	5%	43%	10%	5%	5%	0%	0%	5%	10%	0%		
<u>Transportation</u>																
Automobile, nut														2	2	20%
Bicycle, lock													1		1	10%
Bit/bridle, animal								1				1			2	20%
Buggy/cart, swivel						1									1	10%
Harness, leather		1							1			2			4	40%
<b>Transportation Subtotal</b>	0	1	0	0	0	1	0	1	1	0	0	3	1	2	10	2%
<b>Subtotal (%)</b>	0%	10%	0%	0%	0%	10%	0%	10%	10%	0%	0%	30%	10%	20%		
<u>Tools</u>																
Ax, sheath									1						1	10%
Battery, dry cell							1								1	10%
Brush, paint												1			1	10%
Chisel								1							1	10%
Drawing												1			1	10%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
Handle, unid. tool		1						1							2	20%
Screwdriver, handle									2						2	20%
Whetstone													1		1	10%
<b>Tools Subtotal</b>	0	1	0	0	0	0	1	2	3	0	0	2	1	0	10	2%
<b>Subtotal (%)</b>	0%	10%	0%	0%	0%	0%	10%	20%	30%	0%	0%	20%	10%	0%		
<u>Yard, Gardening</u>																
Basin, enamel												1			1	0%
Chain			1					1							2	1%
Fencing, wire	1							1							2	1%
Flowerpot, plain, unglazed terra cotta		4	82	4	25	116	9	6				9	13		268	95%
Flowerpot, decorated		1	1												2	1%
Spray can, plastic	1														1	0%
Stake, wooden	1														1	0%
Tape, flagging	3														3	1%
Weed whacker filament	1														1	0%
<b>Yard/Gardening Subtotal</b>	7	5	84	4	25	116	9	8	0	0	0	10	13	0	281	57%
<b>Subtotal (%)</b>	2%	2%	30%	1%	9%	41%	3%	3%	0%	0%	0%	4%	5%	0%		
<b>TOTAL SPECIAL FUNCTION SUBTOTAL</b>	19	29	95	4	33	144	14	28	12	36	0	41	26	10	491	
<b>TOTAL SPECIAL FUNCTION SUBTOTAL (%)</b>	4%	6%	19%	1%	7%	29%	3%	6%	2%	7%	0%	8%	5%	2%		

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
<b>UNCLASSIFIABLE ARTIFACTS:</b>																
Band, ferrous metal	2					1	3	24	3	13		2			48	3%
Bone, rodent						2		1							3	0%
Ceramic fragments	1	10			3	6	9	2	1				3		35	2%
Glass fragments	16	91	14	3	19	123	75	88	59	1		15	3	2	509	36%
Disk, metal		1	2					1		2					6	0%
Leather fragments		2			1			1							4	0%
Metal, cast iron					2	1		2			2	1	1		9	1%
Metal, ferrous	3	28	105	4		1	2	13	9	4		2	44	9	224	16%
Metal, non-ferrous		3			2	1									6	0%
Plastic fragments	6	9										8		2	25	2%
Rubber fragments		1	1		1										3	0%
Sheet metal, ferrous	20	8	9		4	31	20	99	23			15	14	110	353	25%
Sheet metal, non-ferrous	1	2	1			1			1			1			7	0%
Slag	6	10	3		1	18	3	4	10			1	16	1	73	5%
Slate											1				1	0%
Styrofoam, unid.	1	2													3	0%
Washer, asbestos												1			1	0%
Wire	2		2		3	2	1	3	1		1	1			16	1%
Wood, modified			5	2	11	1		3					2		24	2%
Wood, unmodified	3	2	14		4			3	1	6	1		23	1	58	4%
Unidentifiable material										1					1	0%
Unidentifiable vegetal material						1		8		3					12	1%

Artifact Type	1985 Dist	>1940	Tren 1940	<1940 Tren	<1940	Kirm dump	Kirm dmp2	Kirm priv	Moor dump	Moor privy	Moor	Shed 1	SW yd	Bd wlk	Total	Total (%)
UNCLASSIFIABLE TOTAL	61	169	156	9	51	189	113	252	108	30	5	47	106	125	<b>1,421</b>	
UNCLASSIFIABLE TOTAL (%)	4%	12%	11%	1%	4%	13%	8%	18%	8%	2%	0%	3%	7%	9%		

## APPENDIX 11 - Non-Food Related Artifacts, by Minimum Number Count

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<b>HOUSEHOLD ARTIFACTS:</b>																
<u>Household Hardware</u>																
Bracket, shelf		1													1	3%
Chest/box hardware			2			1		1	1						5	16%
Crampon								1							1	3%
Door, hasp			1												1	3%
Drawer pull			1		1										2	6%
Hrdwre, decorative (pressed metal, rivet, screw, tack, etc.)		2	1			5	1								9	28%
Handle, bail						1		1		1					3	9%
Handle, rope												1			1	3%
Hook, coat						1									1	3%
Hook, cup									2						2	6%
Key, skeleton						1			1						2	6%
Window covering--shade brkt, crtn rod			2				1					1			4	13%
<b>HH Subtotal</b>	0	3	7	0	1	9	2	3	4	1	0	2	0	0	<b>32</b>	<b>12%</b>
<b>Subtotal (%)</b>	0%	9%	22%	0%	3%	28%	6%	9%	13%	3%	0%	6%	0%	0%		
<u>Furniture</u>																
Castor						1			2						3	25%
Chair, leg cap												1			1	8%
Spring, furniture					1				1			1			3	25%



Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Stove part					1	1					1	1			4	33%
Upholstery snap								1							1	8%
<b>Furniture subtotal</b>	0	0	0	0	2	2	0	1	3	0	1	3	0	0	12	4%
<b>Subtotal (%)</b>	0%	0%	0%	0%	17%	17%	0%	8%	25%	0%	8%	25%	0%	0%		
<u>Fixed Furnishings</u>																
Linoleum						1		1							2	29%
Plaster, dec	1								1						2	29%
Tack, carpet								2							2	29%
Wallpaper												1			1	14%
<b>Fixed Furn. Subtotal</b>	1	0	0	0	0	1	0	3	1	0	0	1	0	0	7	3%
<b>Subtotal (%)</b>	14%	0%	0%	0%	0%	14%	0%	43%	14%	0%	0%	14%	0%	0%		
<u>Portable Furnishings</u>																
Bowl, ceramic					2	1									3	5%
Bowl, dec porc.	1	2	1			4	1		4						13	22%
Bowl, redware						1									1	2%
Bowl, dec glass						1			1			1			3	5%
Glass, dec	1	2	2		1	4	3					2			15	25%
Glass bird								1							1	2%
Jar, porcelain						1									1	2%
Vase, porcelain		1						2				1			4	7%
Figurine, animal (leg), bisque									3						3	5%
Marble, earthen-ware, undec.									2			1			3	5%
Picture frame parts		1	1				1								3	5%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Mirror		3				2									5	8%
Clock gear					1			1		1					3	5%
Letter box, metal						1									1	2%
Plastic plant leaf		1													1	2%
<b>Portable Fur. Subtotal</b>	2	10	4	0	4	15	5	4	10	1	0	5	0	0	<b>60</b>	<b>22%</b>
<b>Subtotal (%)</b>	3%	17%	7%	0%	7%	25%	8%	7%	17%	2%	0%	8%	0%	0%		
<u>Home Maintenance:</u>																
Bucket handle											1				1	1%
Clothespin, wooden										1					1	1%
Clothespin spring		1			2	1	1	4			1			5	15	20%
Clorox bottle	1	2			1										4	5%
Household bottle (amber)	1	2	3		3	3	4				1	1			18	24%
Household bottle (honey amber)		1													1	1%
Household bottle, polish							1		1						2	3%
Can-household cleanser, polish, etc.							2	3	6			3			14	18%
Can, paint		3				1	3	2				3			12	16%
Paint chip	2	1	1					2							6	8%
Scissors						1									1	1%
Copper mesh filter									1						1	1%
<b>Home Maint. Subtotal</b>	4	10	4	0	6	6	11	11	8	1	3	7	0	5	<b>76</b>	<b>28%</b>
<b>Subtotal (%)</b>	5%	13%	5%	0%	8%	8%	14%	14%	11%	1%	4%	9%	0%	7%		

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<u>Lighting</u>																
Electrode, graphite						1									1	1%
Kerosene lamp part						3						1	1		5	7%
Lamp chimney			2		1	5						3	2		13	18%
Lampshade, glass	1	1	1			3		1	2	1		1	2		13	18%
Lightbulb, elec	4	6	1		2	2		12	1		1	5	3	1	38	53%
Elec. lamp part									1						1	1%
Wire, electric								1							1	1%
<b>Lighting Subtotal</b>	5	7	4	0	3	14	0	14	4	1	1	10	8	1	72	26%
<b>Subtotal (%)</b>	7%	10%	6%	0%	4%	19%	0%	19%	6%	1%	1%	14%	11%	1%		
<u>Heating</u>																
Can, kerosene		1					1								2	14%
Charcoal	x	x	x		x	x	x	x	x	x	x		x		0	
Coal	1	1	1		1	1	1	1	1			1			9	64%
Mica		1							1		1				3	21%
<b>Heating Subtotal</b>	1	3	1	0	1	1	2	1	2	0	1	1	0	0	14	5%
<b>Subtotal (%)</b>	7%	21%	7%	0%	7%	7%	14%	7%	14%	0%	7%	7%	0%	0%		
<b>TOTAL HOUSEHOLD</b>	13	33	20	0	17	48	20	37	32	4	6	29	8	6	273	
<b>TOTAL HOUSEHOLD (%)</b>	5%	12%	7%	0%	6%	18%	7%	14%	12%	1%	2%	11%	3%	2%		
<b>PERSONAL ARTIFACTS:</b>																
<u>Medicine</u>																

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<b>--Whole Bottles--</b>																
Colorless SCA:																
“Philadelphia,” “Hub,” “Blake” or “Buffalo” oval --																
2 oz.		1						11		26		3			41	53%
4 oz.								2		14					16	21%
6 oz.										7					7	9%
“Prima” oval, graduated, 4 oz.								1							1	1%
Manhattan oval --																
2 oz.								1		2					3	4%
3 oz.										1					1	1%
Aqua, 2 oz. “Blake”										1					1	1%
Cobalt “Bromo-Seltzer” --																
2 oz.										3					3	4%
4 oz.										1					1	1%
5 oz.										1					1	1%
Amber cyl., 3/4 oz. “Corn cure” vial		1													1	1%
White glass “Mentholatum” jar												1			1	1%
<i>Subtotal</i>	0	2	0	0	0	0	0	15	0	56	0	4	0	0	77	50%
<b>--Fragmentary Bottles--</b>																
Stopper, tincture							1								1	1%
Aqua--																
Cylindrical						1									1	1%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Indented panel,embossed letters													2		2	3%
Indented panel, unembossed					1										1	1%
Maguire Medicine Co. (embossed)		1													1	1%
Sq/Rectangular		1				1									2	3%
Amber--																
Indented panel, unembossed	1														1	1%
Sq/rectangular	1														1	1%
Unknown shape			1		1										2	3%
Jar								1							1	1%
Cobalt--																
Bromo Seltzer									1						1	1%
Cylindrical	1					1									2	3%
Unknown shape			1										1		2	3%
Vial, poison					1										1	1%
Colorless, Selenium--																
Indented panel, unembossed													1		1	1%
Oval						1									1	1%
Colorless, SCA--																0%
Cylindrical						3									3	4%
Indented panel, unembossed			1		1	5			1						8	12%
Indented panel, embossed							1								1	1%
Oval						2			2	3					7	10%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Sq/rectangular						2		2	2						6	9%
Unknown shape						2			1	1		2			6	9%
Vial, round						1									1	1%
Vial, square									1						1	1%
Jar												1			1	1%
Colorless, unk. comp-																
Indented panel, embossed ltrs													1		1	1%
Indented panel, unembossed					1		1		1						3	4%
Oval									1						1	1%
Sq/rectangular		1				1								1	3	4%
Unknown shape		1			1	1									3	4%
Jar, ground lip					1										1	1%
White glass																
"Mentholum" jar												1			1	1%
<b>Subtotal</b>	3	4	3	0	7	21	3	3	10	4	0	4	5	1	68	44%
<b>--Miscellaneous Medical--</b>																
Funnel, black rubber										1					1	13%
Pipette					1		1								2	25%
Syringe, black										2					2	25%
Thermometer	1		2												3	38%
<b>Misc. Med. Subtotal</b>	1	0	2	0	1	0	1	0	0	3	0	0	0	0	8	5%
<b>Subtotal (%)</b>	13%	0%	25%	0%	13%	0%	13%	0%	0%	38%	0%	0%	0%	0%		



Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<i>Medicine Subtotal</i>	4	6	5	0	8	21	4	18	10	63	0	8	5	1	153	29%
<i>Subtotal (%)</i>	3%	4%	3%	0%	5%	14%	3%	12%	7%	41%	0%	5%	3%	1%		
<u>Grooming &amp; Hygiene</u>																
Bobbin, wooden								1							1	1%
Can, powder						3						2			5	5%
Can, powder, sprinkler lid							1								1	1%
Can, unid. toiletry						3									3	3%
Can, unid. toiletry, non-sprinkler lid												1			1	1%
Can, shoe polish					1					1					2	2%
Chamberware		1						1							2	2%
Comb		2													2	2%
Haircomb, tortoiseshell	1														1	1%
Insect repellant												1			1	1%
Mirror						3			1						4	4%
Safety pin	1				1	1		1				1		1	6	6%
Scissors								1							1	1%
Bottle, Listerine						1									1	1%
Bottle, aqua--																
Sq/rect, embossed panel							1								1	1%
Sq/rect, <4 oz.						2									2	2%
Bottle, citron green, sq./rect.		1													1	1%
Bottle, colorless--																

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
SCA, sq/rect					1			1				3	2		7	7%
SCA, 6 oz. oval, embossed: <i>Paul Westphal/Auxiliator/ For the Hair/New York</i>						1									1	1%
Lead, cylindrical								1							1	1%
Selenium, cyl						2									2	2%
Selenium, sq/rect		1													1	1%
Bottle, perfume																
"Crown Perfumery", whole w/stopper								1							1	1%
Colorless w/stopper												1			1	1%
Decorative glass stopper					1				1						2	2%
Flask, opaque white glass		1				1						2			4	4%
Jar, colorless SCA--																
Cyl, <3 oz.								1				1			2	2%
Oval, 6 oz.			2			1									3	3%
Oval lid to 6 oz. jar		1				1									2	2%
Container, white glass	2	6	2		1	4	1	4	1			1	2		24	25%
Jar, white glass-																
Wide-mouth						1									1	1%
Cyl., <4 oz.			1		1							1	3		6	6%
Vial, colorless cyl., "essential oil" w/glass rod		2													2	2%
<b>Grooming &amp; Hygiene Subtotal</b>	4	15	5	0	6	24	3	12	3	1	0	14	7	1	95	18%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<b>Subtotal (%)</b>	4%	16%	5%	0%	6%	25%	3%	13%	3%	1%	0%	15%	7%	1%		
<u>Personal/Adornment</u>																
<i>Jewelry--</i>																
Bead, glass		1	1			2			2	1					7	29%
Charm						1									1	4%
Disc, shell						1									1	4%
Earring/Pendant		2													2	8%
Pin, decorative			1						1						2	8%
Wire									5	1					6	25%
Unknown type						2			1						3	13%
Pocket knife												1			1	4%
Pocket watch						1									1	4%
<b>Prsonal/Adornment Subtotal</b>	0	3	2	0	0	7	0	0	9	2	0	1	0	0	24	5%
<b>Subtotal (%)</b>	0%	13%	8%	0%	0%	29%	0%	0%	38%	8%	0%	4%	0%	0%		
<u>Clothing</u>																
Belt, leather												1			1	1%
Belt, silk										2					2	1%
Buckle, decorated						1									1	1%
Buckle, plain								1	3			1			5	4%
<i>Fasteners--</i>																
Button, decorated					1	3			7		1	3			15	11%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Button, plain	1	3	4			13	1	3	10	2	1	1		1	40	29%
Rivet, copper									11						11	8%
Garter						2			7						9	6%
1885 "Garment Supporter"									2						2	1%
Hook & eye						1									1	1%
Slide (suspender)						3		3	3						9	6%
Snap						1									1	1%
<i>Garments--</i>																
Blouse, silk	1														1	1%
Raingear										1					1	1%
Sock, black knit												1			1	1%
Textile, unidentified							1			1		5			7	5%
Tie, men's silk										1					1	1%
Vest, wool										1					1	1%
Yarn			1												1	1%
<i>Footwear--</i>																
Eyelet/grommet					1	3		3	10						17	12%
Leather fragments									1						1	1%
Leather, high-top										1		1			2	1%
Moccasin fragment			1												1	1%
Shoe, heel		1									1				2	1%
Shoe, sole, adult											1	1	1		3	2%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Shoe, sole, child						1						1			2	1%
Shoe nail						1						1			2	1%
<b><i>Clothing Subtotal</i></b>	2	4	6	0	2	29	2	10	54	9	4	16	1	1	<b>140</b>	<b>26%</b>
<b><i>Subtotal (%)</i></b>	1%	3%	4%	0%	1%	21%	1%	7%	39%	6%	3%	11%	1%	1%		
<u>Leisure/Indulgences</u>																
<i>Adult--</i>																
Dice, bone	1														1	2%
Record, phonograph		3	1			1									5	8%
<i>Tobacco:</i>																
Can						1						1			2	3%
Humidor, glass					1	1									2	3%
<i>Child--</i>																
Animal, cast iron			1												1	2%
Block, wooden alphabet												2			2	3%
Doll parts, porcelain	1	2	1		1	7	1	2	6			1			22	35%
Doll cup, porc			1						3		1				5	8%
Doll plate, porc							1		1						2	3%
Marble	1	2			2				1			3			9	15%
Plastic soldier		1													1	2%
Plastic bubble bottle		1				1									2	3%
Wheel						1									1	2%
Whistle, bronze	1														1	2%
Wooden tinker toy												1			1	2%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Unknown adult/child-																
Ball, rubber		1			1				1						3	5%
Collar, Dog			1												1	2%
Telescope, pocket						1									1	2%
<i>Lsure/Indulgences Subtotal</i>	4	10	5	0	5	13	2	2	12	0	1	8	0	0	62	12%
<i>Subtotal(%)</i>	6%	16%	8%	0%	8%	21%	3%	3%	19%	0%	2%	13%	0%	0%		
<u>Personal, Unident. Function</u>																
Can, unidentifiable	1					2									3	5%
Container, pale amber glass						2							1		3	5%
Container, aqua glass	1	1			2								1		5	8%
Container, colorless flint/lead glass					2										2	3%
Container, colorless SCA glass	1	2	3		3	1							1		11	19%
Container, colorless selenium glass			1									1	1		3	5%
Container, colorless glass, comp. unk.	3	3	4		1	2		2				1	10		26	44%
Container, apple green glass, rect.			1												1	2%
Container, plastic	1														1	2%
Copper band						1									1	2%
Glass, beehive-shaped						1									1	2%
Wrapper, plastic		2													2	3%
<i>Personal Unid. Function Subtotal</i>	7	8	9	0	8	9	0	2	0	0	0	2	14	0	59	11%



Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<i>Subtotal (%)</i>	12%	14%	15%	0%	14%	15%	0%	3%	0%	0%	0%	3%	24%	0%		
<b>TOTAL PERSONAL ARTIFACTS</b>	21	46	32	0	29	103	11	44	88	75	5	49	27	3	<b>533</b>	
<b>TOTAL PERSONAL ARTIFACTS (%)</b>	4%	9%	6%	0%	5%	19%	2%	8%	17%	14%	1%	9%	5%	1%		
<b>SPECIAL FUNCTION ARTIFACTS:</b>																
<u>Munitions</u>																
Bullet												1		1	2	4%
Cartridge, ctr-fire		3			1	1		1		1		1			8	17%
Cartridge, rim-fire	1	3	1		4	5		2	6	1		8	3	1	35	73%
Shell, shotgun		1													1	2%
Gun part								1							1	2%
BB shell can												1			1	2%
<b>Munitions subtotal</b>	1	7	1	0	5	6	0	4	6	2	0	11	3	2	<b>48</b>	<b>27%</b>
<i>Subtotal (%)</i>	2%	15%	2%	0%	10%	13%	0%	8%	13%	4%	0%	23%	6%	4%		
<u>Communications</u>																
Insulator, glass													1		1	7%
Book page fragments										2					2	14%
Newspaper fragments										4		4			8	57%
Linotype		1											1		2	14%
Radio tube						1									1	7%
<b>Communications Subtotal</b>	0	1	0	0	0	1	0	0	0	6	0	4	2	0	<b>14</b>	<b>8%</b>
<i>Subtotal (%)</i>	0%	7%	0%	0%	0%	7%	0%	0%	0%	43%	0%	29%	14%	0%		

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
<u>Bulk Storage</u>																
Bag, burlap										2		1			3	9%
Band, metal		1				2		3							6	19%
Crate, packing			2							1		2	1		6	19%
Padlock													1		1	3%
String												2			2	6%
Styrofoam packing	1	1						1						1	4	13%
Wire, bailing		1			1										2	6%
Wrapper, plastic	4	2										1		1	8	25%
<b>Bulk Storage Subtotal</b>	5	5	2	0	1	2	0	4	0	3	0	6	2	2	32	18%
<b>Subtotal (%)</b>	16%	16%	6%	0%	3%	6%	0%	13%	0%	9%	0%	19%	6%	6%		
<u>Office Supplies</u>																
Bottle, mucilage										1					1	11%
Fastener, paper									2						2	22%
Pencil			1		1				1			1			4	44%
Rubber band										1					1	11%
Tape, adhesive												1			1	11%
<b>Office Supplies Subtotal</b>	0	0	1	0	1	0	0	0	3	2	0	2	0	0	9	5%
<b>Subtotal (%)</b>	0%	0%	11%	0%	11%	0%	0%	0%	33%	22%	0%	22%	0%	0%		
<u>Economic Activity</u>																
Bone, worked						1									1	7%
Coin, penny	1							1							2	14%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Crucible									1			1			2	14%
Cup, souvenir						1	1								2	14%
Pin, Kirmse swastika						1							1		2	14%
Pin, Kirmse totem						1									1	7%
Token, Nome RR													1		1	7%
Token, unidentifiable		1	1		1										3	21%
<b>Economic Activity Subtotal</b>	1	1	1	0	1	4	1	1	1	0	0	1	2	0	14	8%
<b>Subtotal (%)</b>	7%	7%	7%	0%	7%	29%	7%	7%	7%	0%	0%	7%	14%	0%		
<u>Transportation</u>																
Automobile, nut														2	2	20%
Bicycle, lock													1		1	10%
Bit/bridle, animal								1				1			2	20%
Buggy/cart, swivel						1									1	10%
Harness, leather		1							1			2			4	40%
<b>Transport. Subtotal</b>	0	1	0	0	0	1	0	1	1	0	0	3	1	2	10	6%
<b>Subtotal (%)</b>	0%	10%	0%	0%	0%	10%	0%	10%	10%	0%	0%	30%	10%	20%		
<u>Tools</u>																
Ax, sheath									1						1	11%
Battery, dry cell							1								1	11%
Brush, paint												1			1	11%
Chisel								1							1	11%
Drawing												1			1	11%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Handle, unid. tool		1						1							2	22%
Screwdriver, handle									1						1	11%
Whetstone													1		1	11%
<b>Tools Subtotal</b>	0	1	0	0	0	0	1	2	2	0	0	2	1	0	9	5%
<b>Subtotal (%)</b>	0%	11%	0%	0%	0%	0%	11%	22%	22%	0%	0%	22%	11%	0%		
<u>Yard, Gardening</u>																
Basin, enamel												1			1	3%
Chain			1					1							2	5%
Fencing, wire	1							1							2	5%
Flowerpot, plain		3	4	1	1	5	3	5				2	2		26	67%
Flowerpot, decorated		1	1												2	5%
Spray can, plastic	1														1	3%
Stake, wooden	1														1	3%
Tape, flagging	3														3	8%
Weed whacker fil.	1														1	3%
<b>Yard, Gard. Subtotal</b>	7	4	6	1	1	5	3	7	0	0	0	3	2	0	39	22%
<b>Subtotal (%)</b>	18%	10%	15%	3%	3%	13%	8%	18%	0%	0%	0%	8%	5%	0%		
<b>TOTAL SPECIAL FUNCTION</b>	14	20	11	1	9	19	5	19	13	13	0	32	13	6	175	
<b>TOTAL SPECIAL FUNCTION (%)</b>	8%	11%	6%	1%	5%	11%	3%	11%	7%	7%	0%	18%	7%	3%		
<b>UNCLASSIFIABLE ARTIFACTS:</b>																

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Band, ferrous metal	1					1	1	4	3	13		1			24	5%
Bone, rodent						1		1							2	0%
Ceramic fragments	1	7			3	5	4	2	1				1		24	5%
Glass fragments	13	17	12	2	15	47	28	23	10	1		8	3	2	181	35%
Disk, metal		1	2					1		2					6	1%
Leather fragments		2			1			1							4	1%
Metal, cast iron					1	1		2			2	1	1		8	2%
Metal, ferrous	3	7	25	3		1	2	12	3	1		2	13	2	74	14%
Metal, non-ferrous		3			1	1									5	1%
Plastic fragments	6	3										1		1	11	2%
Rubber fragments		1	1		1										3	1%
Sheet metal, ferrous	3	3	4		2	3	7	25	6			9	2	3	67	13%
Sheet metal, non-ferrous	1	2	1			1			1			1			7	1%
Slag	4	8	1		1	7	3	3	5			1	2	1	36	7%
Slate											1				1	0%
Styrofoam, unid.	1	2													3	1%
Washer, asbestos												1			1	0%
Wire	1		2		3	2	1	2	1		1	1			14	3%
Wood, modified			5	2	3	1		1					2		14	3%
Wood, unmodified	3	2	3		4			3	1	4	1		9	1	31	6%
Unidentifiable material										1					1	0%

Artifact Type	1985 Dist	>1940	Trend 1940	<1940 Trend	<1940	Kirm dump	Kirm dmp2	Kirm privy	Moore dump	Moore privy	Moore	Shed 1	SW yd	Bd-walk	Total	Total (%)
Unidentifiable vegetal material						1		3		2					6	1%
<b>UNCLASSIFIABLE TOTAL</b>	37	58	56	7	35	72	46	83	31	24	5	26	33	10	<b>523</b>	
<b>UNCLASSIFIABLE TOTAL (%)</b>	7%	11%	11%	1%	7%	14%	9%	16%	6%	5%	1%	5%	6%	2%		





