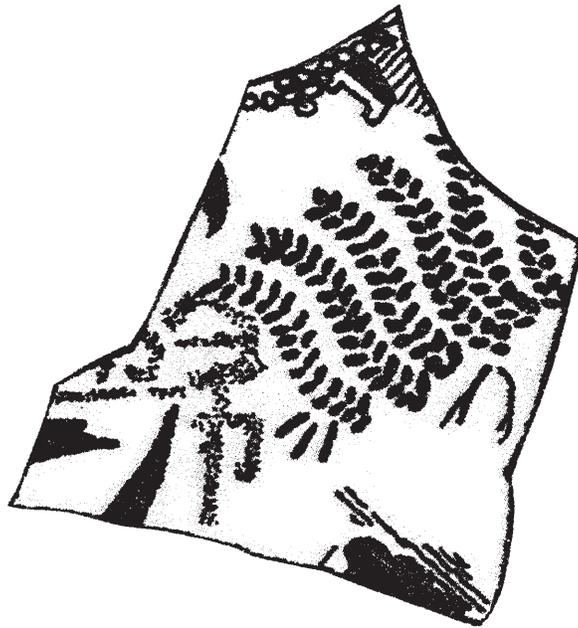


Historical Archaeology of an Overseas Chinese Community in Sacramento, California

VOLUME 1: ARCHAEOLOGICAL EXCAVATIONS



*English 'Willow' pattern plate
fragment with incised Chinese character*

Anthropological Studies Center
Sonoma State University Academic Foundation, Inc.
Rohnert Park, CA 94928

1997
(reprinted 2007)

Historical Archaeology of an Overseas Chinese Community in Sacramento, California

VOLUME 1: ARCHAEOLOGICAL EXCAVATIONS

by

Mary Praetzellis and Adrian Praetzellis

with contributions by

Sherri Gust

Virginia R. Hellmann

Madeline Hirn

Sunshine Psota

Lester A. Ross

Peter D. Schulz

G. James West

Jeannie K. Yang

submitted to

Joan Byrens

Portfolio Management

US General Services Administration

450 Golden Gate Avenue

San Francisco, CA

Contract #: GSO9P-91-KTD-0074

Order #: P-09-95-KT0002

Project #: 93-51-8511

submitted by

Anthropological Studies Center

Sonoma State University Academic Foundation, Inc.

Rohnert Park, CA

February 1997

(reprinted 2007)

ABSTRACT

In late 1994 archaeologists from Sonoma State University carried out archaeological testing and data recovery on the HI56 Block in Sacramento, California. This work, done in advance of construction of a federal office building and courthouse, was sponsored by the U.S. General Services Administration in accordance with the requirements of Section 106 of the National Historic Preservation Act. Prefield documentary research had disclosed that this was the last archaeologically surviving portion of Sacramento's mid-19th-century Chinese district. A detailed research design and archaeological treatment plan was prepared and, through an agreement with the State Office of Historic Preservation, test and data-recovery excavations were carried out as a single operation.

This work revealed archaeological deposits that were determined to be eligible to the National Register of Historic Places under Criterion D, including caches of domestic and commercial refuse associated with a series of Chinese District Association boardinghouses that housed Chinese workers during the mid-1850s. The resulting historical and archaeological analyses revealed much information about the everyday lives of these working-class Chinese pioneers as well as how material culture was used by Chinese District Association agents to enhance their community's relationship to Sacramento's power brokers.

CONTENTS

ABSTRACT	iii
LIST OF FIGURES	viii
LIST OF TABLES	x

CHAPTER 1. INTRODUCTORY REMARKS

PROJECT HISTORY AND PERSONNEL	1
Acknowledgments	5
REPORT ORGANIZATION	5

CHAPTER 2. RESEARCH DESIGN

PROJECT SETTING	7
HISTORICAL CONTEXT	7
Sacramento: An Instant City of Busy Victorians	7
The Overseas Chinese: I Street a Study in Contrast	11
HI56 Block (from Brienes, West & Schulz 1981c)	17
PREVIOUS ARCHAEOLOGICAL RESEARCH	21
RESEARCH DESIGN	22
Modernization, Victorianism, and Ethnicity	22
Victorian Values and Practices	23
Ethnic Display and Boundary Maintenance	24
Archaeology and Material Culture Studies	25
RESEARCH THEMES	27
Theme A: Consumer Behavior/Strategies	27
Theme B: Ethnicity/Urban Subcultures	29
Theme C: Urban Geography	31
Theme D: Interpretive Potential	32

CHAPTER 3. METHODS AND INITIAL STUDY

HISTORICAL RESEARCH METHODS	33
ARCHAEOLOGICAL FIELD METHODS	35
Archaeological Formation Processes	35
Testing Strategy	36
Excavation Procedures and Criteria	38
Data-Recovery Excavation	41
LABORATORY METHODS	41

CHAPTER 4. FINDINGS

AREA 1: 818 SIXTH STREET	43
Site Structure	43
Historical Associations	44
Interpretation	46
AREA 1: 525/527 I STREET (Formerly 153/155 I)	59
Site Structure	59
Historical Associations	61
Interpretation	66
AREA 2. 513/515 I STREET (Formerly 139/141 I)	94
Site Structure	94
Historical Associations	95
Interpretation	100
AREA 3. 507 I STREET (Formerly 133 I STREET)	132
Site Structure	132
Historical Associations	134
Interpretation	138

CHAPTER 5. SPECIAL STUDIES

PREVIOUSLY UNDOCUMENTED CHINESE ARTIFACTS by Virginia R. Hellmann and Jeannie K. Yang	155
Introduction	155
Ceramics	155
Glass	190
Opium-Related Material	197
Varia	199
Conclusions	202
BEADS by Lester A. Ross	203
Bead Classification Systems	203
Cataloging Procedures	204
Bead Assemblage	209
Ethnic, Temporal, and Economic Inferences	219
ANALYSIS OF ANIMAL BONES by Sherri M. Gust	222
Methodology	222
Findings	222
Faunal Summary	249
MID-19TH-CENTURY FISH REMAINS by Peter D. Schulz	258
Introduction	258
Methods	258
Results	259
Discussion	267

FLORAL REMAINS	
by Madeline Hirn	269
Methods	269
Findings	269
Discussion	272
POLLEN ANALYSIS OF SEDIMENT SAMPLES: A RECORD OF VEGETATION CHANGE by G. James West	273
Introduction	273
Methods	274
Results	275
Discussion	275
Conclusions	280

CHAPTER 6. CONCLUDING REMARKS

AN ANOMALY? OR TIME FOR A REEVALUATION OF ASSUMPTIONS	281
CHINESE MERCHANTS: VICTIMS OR PROTAGONISTS?	281
The Importance of <i>Guanxi</i>	282
Josiah Gallup, Chinese Business Agent	282
SOCIAL STRUCTURE OF MERCHANT AND COMPANY HOUSEHOLDS	284
Where Did the Artifacts Come From?	286
Two Sets of Chinese Merchants and their Artifacts	289
HOW CHINESE MERCHANTS AND ASSOCIATION AGENTS USED NEW ARTIFACTS TO CARRY OUT AN OLD STRATEGY	289
CONCLUSION	295
REFERENCES CITED	296

APPENDIXES

- A. HI56 Oral History Project Summary
- B. Context Concordance for HI56 Block Excavations

LIST OF FIGURES

1. Project Location	8
2. J Street, Sacramento, in 1855	13
3. I Street “Chinadom”	15
4. Area Tested Shown on 1895 Sanborn Map	48
5. 818 6th Site Plan	49
6. Harris Matrix, 818 6th Street	50
7. Privy 500 Cross Section	51
8. Privy 500 After Excavation	52
9. Koch’s Bird’s-eye View of Sacramento in 1869	53
10. 525/527 I Street, Area 1, Site Plan	70
11. Harris Matrix, 525/527 Street and 820/828 6th Street	71
12. Cross Section through 525/527 I Street	72
13. Pit 16 Cross Section	73
14. Pit 16 Cross-sectioned View	74
15. Pit 69 Cross Section	75
16. Pit 69 Cross-sectioned View	76
17. Pit 83 Cross-Section	77
18. 513/515 I Street, Area 2, Site Plan	103
19. Harris Matrix, 513-515 I Street	104
20. Cross Section through 513/515 I Street	105
21. Pit 953 Cross Section	106
22. Pit 953 Partly Excavated	107
23. Excavation of Context 903	108
24. Excavation of Context 903	109
25. Artifacts from Context 954	110
26. 507 I Street, Area 3 North, Site Plan	140
27. 507 I Street, Area 3 South, Site Plan	141
28. Harris Matrix, 507 I Street	142
29. The Basement Floor of Gallup’s Building	143
30. Pit 719 Cross Section	144
31. Excavation of Pit 719	145
32. Josiah Gallup	146
33. Chinese Celadon Plate	163
34. Chinese Celadon Bowl	164
35. “Bamboo” Design Bowl	165
36. “Bamboo” Design Medium Dish	166
37. Chinese Porcelain Spoon	168
38. Chinese Porcelain Medium Bowl	169
39. “Peach and Fungus” Design Bowl	170
40. “Top Side” Design Small Dish	171
41. Blue-on-White Porcelain Dish	172

42. “Cauldron and Bat” Design Plate	173
43. Polychrome Dish	175
44. Polychrome Cup	176
45. Polychrome Porcelain Spoon	177
46. Chinese Brown Glazed Stoneware Wide-Mouthed Jar	183
47. Chinese Brown Glazed Stoneware Wide-Mouthed Jar	184
48. Chinese Brown Glazed Stoneware Wide-Mouthed Jar Rims	185
49. Chinese Brown Glazed Stoneware Wide-Mouthed Jar	186
50. Chinese Brown Glazed Stoneware Barrel Jar Rims	188
51. Chinese Brown Glazed Stoneware Rectangular Vessel	189
52. Chinese Brown Glazed Stoneware Recessed-Jar	191
53. Chinese Brown Glazed Stoneware Lug-Handled Jar	192
54. Chinese Brown Glazed Stoneware Square Straight-Sided Jar	193
55a. Chinese Brown Glazed Stoneware Lid	194
55b. Chinese Brown Glazed Stoneware Lid	195
56. Unidentified Chinese Brown Glazed Stoneware Object	196
57. Chinese Medicine Vial	196
58. Representative <i>Tongboa</i>	200
59. Drawn Beads with Cut Ends	211
60. Drawn Beads with Hot-Tumbled Ends	215
61a. Wound Beads	218
61b. Mold-Pressed Beads	218
62. Comparison of Bead Color Frequencies for Chinese and Non-Chinese Contexts	220
63. Retail Butchering Divisions, Beef	223
64. Retail Butchering Divisions, Pork	224
65. Retail Butchering Divisions, Mutton	225
66. Age at Slaughter: Curves for Cattle	252
67. Age at Slaughter: Curves for Sheep	253
68. Age at Slaughter: Curves for Pigs	254
69. Pollen-Sample Locations	277
70. “Chinesen-Quartier in Sacramento, California”	285

LIST OF TABLES

1. Privy 500 Ceramic Tableware and Serving Vessels	54
2. Artifact Summary for Privy 500	55
3. Date and Origin of Marked Ceramic and Glass for Privy 500	58
4. Pit 16, Early Deposit, Ceramic Tableware and Serving Vessels	78
5. Artifact Summary for Pit 16, Early Deposit	79
6. Date and Origin of Marked Ceramic and Glass for Pit 16, Early Deposit	81
7. Pit 16, Late Deposit, Ceramic Tableware and Serving Vessels	82
8. Artifact Summary for Pit 16, Late Deposit	83
9. Date and Origin of Marked Ceramic and Glass for Pit 16, Late Deposit	85
10. Artifact Summary for Pit 83	86
11. Pit 83 Ceramic Tableware and Serving Vessels	88
12. Date and Origin of Marked Ceramic and Glass for Pit 83	89
13. Pit 69 Ceramic Tableware and Serving Vessels	90
14. Artifact Summary for Pit 69	91
15. Date and Origin of Marked Ceramic and Glass for Pit 69	93
16. Chinese Businesses Facing on I Street, 1854-1873	98
17. Pit 953 Ceramic Tableware and Serving Vessels	111
18. Artifact Summary for Pit 953	112
19. Context 903 Ceramic Tableware and Serving Vessels	114
20. Artifact Summary for Context 903	115
21. Date and Origin of Marked Ceramic and Glass for Context 903	118
22. Pit 979 Ceramic Tableware and Serving Vessels	119
23. Artifact Summary for Pit 979	120
24. Date and Origin of Marked Ceramic and Glass for Pit 979	121
25. Context 954 Ceramic Tableware and Serving Vessels	122
26. Date and Origin of Marked Ceramic and Glass for Context 954	124
27. Artifact Summary for Context 954	126
28. Context 702 Ceramic Tableware and Serving Vessels	147
29. Date and Origin of Marked Ceramic and Glass for Context 702	148
30. Artifact Summary for Context 702	149
31. Artifact Summary for Pit 719	151
32. Pit 719 Ceramic Tableware and Serving Vessels	153
33. Date and Origin of Marked Ceramic and Glass for Pit 719	154
34. Chinese Marks on Porcelain Artifacts	157
35. Chinese Brown Glazed Stoneware Vessels	179
36. Makers' Marks on Chinese Brown Glazed Stoneware	180
37. Opium Pipe Bowls	198
38. Distribution of Beads by Variety, Ethnicity, Provenience, and Age	210
39. Animals Represented by Number of Identified Specimens for Privy 500	226
40. Meat Weight by Economic Status for Privy 500	227
41. Animals Represented by Number of Identified Specimens for Pit 69	229
42. Meat Weight by Economic Status for Pit 69	230

43. Animals Represented by Number of Identified Specimens for Pit 83	231
44. Meat Weight by Economic Status for Pit 83	232
45. Animals Represented by Number of Identified Specimens for Pit 16 Early	233
46. Meat Weight by Economic Status for Pit 16 Early	234
47. Animals Represented by Number of Identified Specimens for Pit 16 Late	236
48. Meat Weight by Economic Status for Pit 16 Late	237
49. Animals Represented by Number of Identified Specimens for Layer 954	238
50. Meat Weight by Economic Status for Layer 954	239
51. Animals Represented by Number of Identified Specimens for Layer 903	241
52. Meat Weight by Economic Status for Layer 903	242
53. Animals Represented by Number of Identified Specimens for Pit 979	243
54. Meat Weight by Economic Status for Pit 979	244
55. Animals Represented by Number of Identified Specimens for Pit 953	245
56. Animals Represented by Number of Identified Specimens for Pit 962	246
57. Meat Weight by Economic Status for Pit 962	247
58. Animals Represented by Number of Identified Specimens for Layer 702	248
59. Animals Represented by Number of Identified Specimens for Pit 719	250
60. Livestock Statistics for Sacramento City and County, 1861-1862	249
61. Number of Beef Cut Units for HI56 Block	256
62. Comparative Information for Euroamerican Contexts	257
63. Comparative Information for Chinese Contexts	257
64. Fish Remains by Provenience	260
65. Fish Remains, Weight Estimates	261
66. Floral Remains	270
67. Pollen Counts	276
68. Modern Surface Pollen Rain of the Sacramento-San Joaquin Drainage Major Pollen Types by Percent (from West 1977)	277
69. Ceramic and Glass, Tableware and Containers from 144/156I Street	290
70. Fauna Represented by Number of Identified Specimens for 144/146 I Street	292
71. Meat Weight by Economic Status for IJ56 Block	293

CHAPTER 1

INTRODUCTORY REMARKS

PROJECT HISTORY AND PERSONNEL

In compliance with federal mandates for the identification and protection of significant cultural resources, staff of Sonoma State University's Anthropological Studies Center (ASC) prepared a research design and archaeological identification and testing strategy for the proposed new Federal Building/Courthouse on the HI56 Block in Sacramento, California (Praetzellis and Praetzellis 1993a). As the location of the center of Sacramento's Chinatown, dating to the 1850s, the block was found to have high sensitivity for historic archaeological resources potentially eligible to the National Register of Historic Places (NRHP) under Criterion D. The block was considered to have low sensitivity for prehistoric archaeological sites, being within and bordering a slough. The document was subsequently approved by the state Office of Historic Preservation as being in conformity with the Secretary of the Interior's Standards for Archeological Identification.

While the research design concluded that potential NRHP-eligible properties were likely to exist on the subject parcel, the project area was entirely covered by fill, asphalt, and buildings. The potential significance of historic archaeological resources was made, therefore, on the basis of the archival record and the authors' experience with similar deposits in Sacramento. After the research design was prepared, subsurface investigations conducted for studies of toxic wastes identified the same stratigraphic profile that has been seen elsewhere in Sacramento's historic downtown: a 3- to 5-foot-deep layer of fill soil covering the historic ground surface. Although the core profiles confirmed that portions of the lot had been disturbed by recent construction, much appeared to be relatively intact.

Given the high likelihood of intact, NRHP-eligible resources on the project block, and due to the time constraints placed upon the project, a consolidated approach to Section 106 compliance was developed. The identification, evaluation, and data-recovery phases were collapsed into a single operation, an approach successfully underway at the Cypress Freeway Replacement Project in Oakland, California. The research design provided a context for evaluation and predictions as to where significant archaeological deposits may have survived. A data-recovery plan was prepared that summarized the methods for the identification and evaluation of historic archaeological remains and provided a treatment plan for those remains determined to be potentially eligible for inclusion in the NRHP (Praetzellis and Praetzellis 1994).

The U.S. General Services Administration, the Advisory Council on Historic Preservation, the State of California Historic Preservation Officer, and the City of Sacramento agreed to sign a Programmatic Agreement that implemented these stipulations regarding archaeological resources.

Field work was undertaken between 14 November and 29 December 1994. The artifact processing and cataloging was completed by 8 December 1995. Archival research was conducted prior to, during, and after field work to enhance our understanding of the site's historic context. The artifact collection and notes from this project are curated at the Collections Facility, Anthropological Studies Center, Sonoma State University, Rohnert Park, California. The following list provides the names of personnel involved in the project and summarizes their qualifications and roles.

Principal Investigator: Adrian Praetzellis
Ph.D. Anthropology, SOPA (historical archaeology)
Designed field work, oversaw all aspects of the project, field director, report author

Field Director: Grace H. Ziesing
M.A. Historical Archaeology

Senior Historian: Mary Praetzellis
M.A. Cultural Resources Management (CRM), SOPA (historical archaeology), CCPH (registered historian)
Directed historical research, report author, project manager

Lab Director: Sunshine Psota
M.A. CRM, SOPA
Oversaw artifact processing, cataloging, and creation of computer catalog; prepared Volume 2

Technical Editor: Suzanne B. Stewart
M.A. CRM, SOPA

Senior Field Technician: Michael D. Meyer
B.A. Anthropology, CRM graduate student

Field Technician: Anmarie Medin
M.A. CRM

Oral Historian: Karana Hattersley-Drayton
B.A. Anthropology, University of California, Berkeley, graduate student

Historical Researcher: Elaine-Maryse Solari
M.A. CRM, Juris Doctor

Computer Graphic Specialist: Bright Eastman
B.A. Anthropology, CRM graduate student

Computer Graphics Specialist: Maria Ribeiro
B.A. Anthropology

Computer Specialist: Rosemary White
B.A. Psychology

Senior Field Technician/Faunal Analyst/Illustrator: Michael Stoyka
A.A.

Field Technician: Conrad Praetzel
A.A.

Field/Lab Technician: Margo Schur
B.A. Art History

Field Technician: Allan Richard Wolter
B.A. Anthropology

Field Technician: Bryan Mischke
B.A. Anthropology

Field Technician: Keith Warren

Field Technician: Nina Ilic
M.A. Anthropology

Field Technician: Jane Caputo
M.A. CRM

Zooarchaeologist: Sherri Gust
M.S. Anatomy

Field/Lab Technician/Special Studies: Virginia Hellmann
B.A. History, CRM graduate student

Field/Lab Technician/Special Studies/Translation: Jeannie Yang
B.A. Anthropology, CRM graduate student

Field/Lab Technician: Nelson Thompson
B.A. Anthropology

Field Technician: Steven Moore
B.A. Anthropology, CRM graduate student

Faunal Specialist: Samantha Schell
B.A. Anthropology

Faunal Specialist: Scott McCartney
B.A. Anthropology, CRM graduate student

Fish Consultant: Peter D. Schulz
Ph.D. Anthropology

Bead Consultant: Lester A. Ross
Lester A. Ross, Inc.

Pollen Consultant: G. James West
Ph.D. Anthropology

Geoarchaeologist: Jack Meyer
B.A. Anthropology, CRM graduate student

Seed Consultant: Elizabeth Honeyset
Far Western Anthropological Research Group

Seed Specialist: Madeline Hirn
B.A. Anthropology, CRM graduate student

Wet-screening Supervisor: William Stillman
B.A. Anthropology

Lab Technician: Judith Gregg
Anthropology undergraduate

Lab Technician: Kristen Lytle
Anthropology undergraduate

Lab Technician: Darrell Cardiff
Anthropology undergraduate

Lab Technician: Holly Hoods
B.A. Linguistics, CRM graduate student

Lab Technician: Lowell Damon
B.A. Anthropology

Lab Technician: David Makar
A.A.

Lab Technician: Jonathan Legare
Anthropology undergraduate

Lab Technician: Alex De Georgey
Anthropology undergraduate

Lab Technician/Shell Specialist: Jennifer Ferneau
B.A. Anthropology, CRM graduate student

ACKNOWLEDGMENTS

Many people contributed to the success of this project. We would like to thank GSA Historic Preservation Officer Joan Byrens; GSA Project Manager Gilbert Delgado; GSA planners Al Lui, Beverly Chinn, and Javad Soltani; OHP archaeologist Gary Reinoehl; City of Sacramento planner Wendy Saunders; and Fugro West representatives Chris Stabenfeldt, Alan Klein, and Melanie Halajian for seeing that the project ran smoothly. Derek Lim and Wesley Yee of the Sacramento Chinese American Council actively supported this project and helped advance the idea of establishing a permanent exhibit on local Chinese American archaeology and history in the courthouse. David Abrams of Sacramento City College was kind enough to video tape portions of the excavation. Anna Lee's enthusiasm for Sacramento's history helped us make it through some of the wettest periods on the site.

The archaeological field crew did a great job, working through one of the coldest and wettest Decembers on record. They knew that this was a once-in-a-lifetime site and pushed themselves so that we could gather as much information as possible. In addition to the usual cataloging of bags of artifacts, the lab crew wet-screened, sorted, and cataloged material from the 6 tons of soil brought in from the field for processing—a monumental task.

The final weeks of report production was particularly trying for everyone involved. The authors would like to express their appreciation for the exceptional efforts of those staff members who worked so long and hard during those last days (and nights!).

Although they did not contribute directly to this study, we would like to express our continuing gratitude to our friends and colleagues Marley Brown and Katie Bragdon. The present work would not have been possible without the foundation of an excellent research design that Marley and Katie prepared for our 1982 study of Chinese merchants on I Street. In contrast to the worthless “front-end loading” of theoretical pronouncements that accompany many archaeological reports, their ideas continue to stimulate and, we hope, improve our work.

Our sincere thanks to the colleagues listed above and apologies to anyone we have forgotten.

REPORT ORGANIZATION

Chapter 2 presents the research context and research design. Chapter 3 describes the research, field, and laboratory methods used in the study and the results of initial test excavation. Chapter 4 presents our findings, including site structure, historical associations, and interpretations for each address investigated. Chapter 5 presents special studies including those on Chinese artifacts, bead identification, and faunal remains.

Chapter 6 presents the conclusions of this study, focusing on the role of Chinese Company agents—both Chinese and American—in Gold Rush-era California. Appendix A contains summaries of the oral histories produced for this study; Appendix B lists context numbers assigned in the field. Volume 2 contains the catalog of artifacts, arranged by context, as well as appendices that list the glass beads and fish remains.

CHAPTER 2 RESEARCH DESIGN

PROJECT SETTING

The project area is bounded by 6th, I, and the extensions of 5th and H streets (HI56 Block; Figure 1). In 1994 the site included property belonging to the City of Sacramento used as a police facility to wash, maintain, and store cars, as well as property belonging to Southern Pacific Railroad Company. Most of the block was devoid of standing structures.

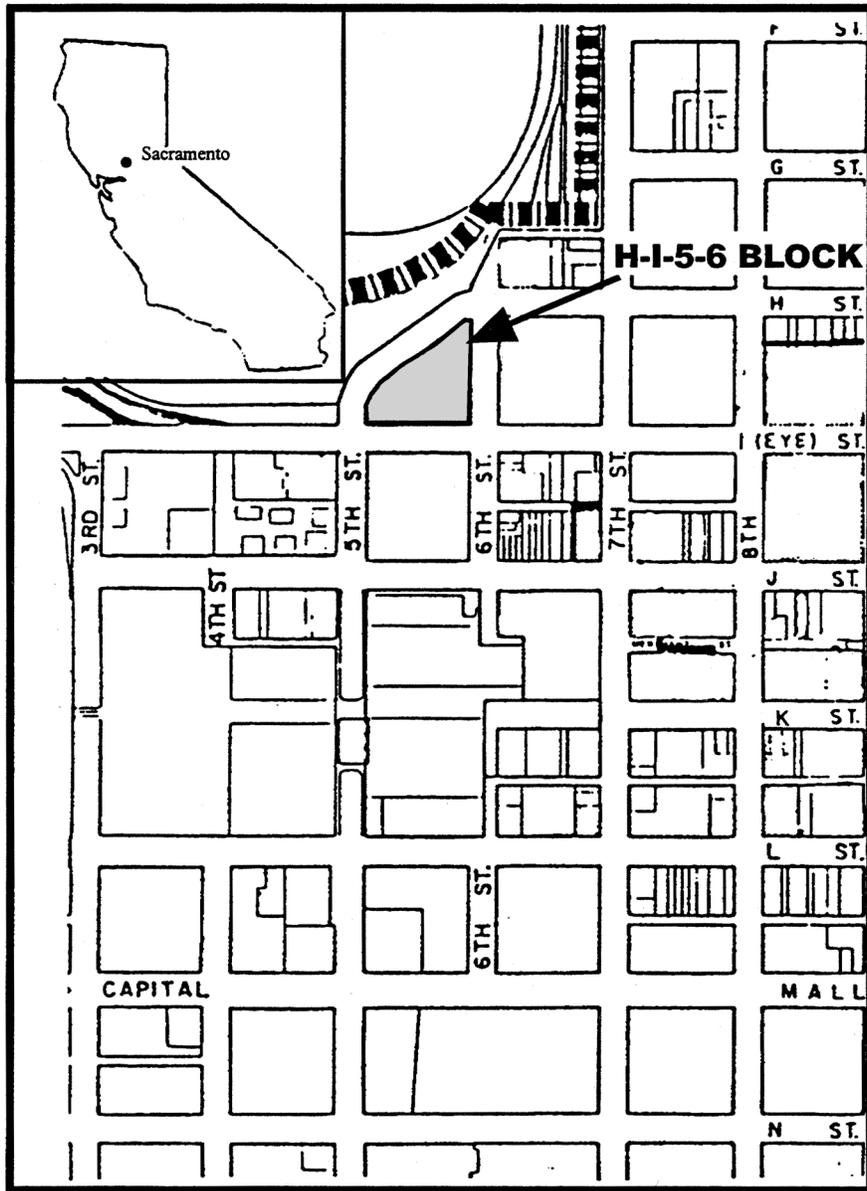
During the 1850s and into the 1860s, the HI56 Block was the center of the Sacramento Chinese community. Although the early history of the block is poorly known, as Chinese businesses were rarely represented in city directories and households were generally lumped as a group by census enumerators, it is clear that I Street between 5th and 6th served as a supply and service center for Chinese miners during the Gold Rush. Numerous Chinese stores, gaming houses, and lodgings were located there as well as a butcher shop and a doctor's office; the buildings were focused along China Lake, also known as Sutter Lake or China Slough, which served both as fishing grounds and as the scene of community recreational and ritual events. By the 1870s, some Caucasian residents appeared on the block, while the 1900 census documents a predominantly working-class population representing a broad mix of ethnic backgrounds.

Several factors increased the likelihood that significant, intact archaeological deposits remained on the block. The wooden structures of Chinatown were destroyed by fire twice in the 1850s, indicating the potential for discrete refuse caches representing cleanup from these datable events. The dense occupation along China Lake, and reports of ad hoc refuse disposal by residents of this area, indicated the likely presence of a residue of artifacts associated with the pioneer Chinese community. Finally, the raising of the city's streets and subsequent filling of the lots provided a protective cap over these mid-19th-century deposits.

HISTORICAL CONTEXT

SACRAMENTO: AN INSTANT CITY OF BUSY VICTORIANS

Sacramento is located in the center of the Central Valley at the confluence of the Sacramento and American rivers. Prior to their being filled in, Sacramento contained three bodies of water: the northern body was known as Willow Lake; the middle, as Sutter Lake, Sutter Slough, or China Lake; and the southern was known as Duck Lake. All of these were ox-bow lakes, attached to the Sacramento and American rivers by narrow channels through which floodwater flowed, creating pools during periods of high water and a marsh the remainder of the time. Low-lying marshes bordered the lakes (Brienes, West & Schulz 1981a:Figure 3). This freshwater marsh community called



SOURCE EIR ASSOCIATES

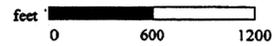


Figure 1. Project Location, Sacramento, California

“Tulares” by the early explorers. has now disappeared, the community once supported stands of tules, with cattails, sedges, and rushes, and stands of willows on slightly more elevated areas. The site of the HI56 Block was located within and adjacent to Sutter Lake.

At the opening of the 19th century, Sacramento’s aboriginal inhabitants, the Nisenan, still lived relatively unmolested by foreign encroachment, hunting and gathering from the land’s abundant resources, as they had done throughout their history. The Nisenan way of life was abruptly transformed when John Sutter, a German-Swiss adventurer, arrived with his followers in 1839 to establish New Helvetia. Sutter received legal title from the Mexican government to 11 square leagues of land and established a cattle ranch and farm that he ran in quiet obscurity as a feudal estate using Native American labor. Then, on 24 January 1848, while digging a tailrace for Sutter’s mill, James Marshall discovered gold on the American River. The news spread quickly, and by June, San Francisco stood deserted “as if an epidemic has swept the little town away” (Bancroft 1888:59). Rumors of the great riches to be found in California caused little excitement on the East Coast until the end of September and the publication of a number of fanciful and exaggerated articles on wealth being plucked from the ground. When a box filled with California gold dust was placed on exhibition at the War Office in Washington, D.C., many easterners turned westward, resolved to make their fortunes. Sutter’s personal domain was trampled in the ensuing stampede.

From 1848 Sacramento grew and prospered as the gateway to the goldfields of the northern Sierra Nevada. The trail to Sutter’s Fort became J Street, the town’s main thoroughfare and center of trade, branching at the end of town into many roads to the mines. Virtually all supplies came up the river; and goods destined for the northern mines, which could not be reached by boat, were unloaded at Sacramento. Miners, of course, also disembarked here, making necessary purchases along J Street. Sacramento came to dominate the commercial activity of the interior of the state. From 1850 through the 1870s, Sacramento was second only to San Francisco as a commercial success story. Only with the expansion of the Central Pacific Railroad, owned by Sacramento businessmen, did the city change from a commercial city to an industrial one (Brienes, West & Schulz 1981a:31).

Sacramento was a classic “instant city” that grew on its own momentum in spite of the disadvantage of being founded on a virtually flat plain, on the banks of two seasonally flooding rivers. As with similar communities whose natural disadvantages were overcome by their place in the path of some irresistible historical force, the survival of the “goose that laid the golden egg” was of paramount concern to local merchants and property owners (Barth 1975:156). Sacramento was a commercial town where most folk who were not simply passing through were, like their associates in San Francisco, “in some way entrepreneurs” with a personal stake in the city’s commercial development (Barth 1975:160). Unlike the socially bifurcated industrial cities of the East, a majority of Sacramento’s residents in the 1850s and 1860s were either independent business people or employees in these small- or mid-sized firms, many of whom planned to go into business for themselves. As a result, while the city authorities of the gold-mining towns of Grass Valley and Nevada City had to contend with citizen apathy and even antagonism over the creation of major public works (Mann 1982:32), many Sacramentans embraced municipal improvements with enthusiasm. The merchants and

property owners of early Sacramento sought to overcome three major obstacles to their city's prosperity—the ravages of flood, fire, and disease. Their approaches to solving these problems have formed, in part, the archaeological record of Sacramento and have profound research implications.

The flood of 1850 inundated four-fifths of the newly established city to a depth of 4 to 6 feet. Flood control, of course, became the hot issue in Sacramento's mayoral election of that year. Candidate Hardin Bigelow was elected handily on a strong, and predictably well-received, plank of levee building. On a vote of 543 to 15, Sacramentans approved a tax assessment for the construction of a levee, and by December, a massive 121,000 cubic yards of material had been thrown up into a 9-mile-long dike protecting the north and west borders of the city (Brienes 1979:5; Nagel 1965:95-99; Wright 1880:73).

Over the next 10 years—spurred on by floods in 1852, 1853, and 1861—the levee was raised and improved, and a new levee was constructed to protect the city's south and east sides (Brienes 1979:12). Although this “mighty cordon of protective embankments which now encircles the city like a fortification” appeared to be “an ample protection against the recurrence of [flooding]” (Wright 1880:68), floodwaters of the winter of 1861-1862 breached the dike and again the city was inundated. As high-water marks rose, so did the size of the levees: portions of the north levee were 14 feet wide at the top, 100 feet at the base, and 16 feet high; sections of levee nearer the commercial district were 8 to 10 feet high—a truly monumental symbol of the city's commitment to Progress.

While the levees were being built, an even greater task was being attempted to save the city: the raising of the entire business district. This mammoth undertaking began in 1853 with the importation of material to add to J and K streets, the city's main commercial arteries. Property owners bore the cost of raising the grade in front of their land, of raising their own buildings and sidewalks to meet the new level, and of installing a brick bulkhead along their frontage to hold the street fill. Finally, in 1878, after 25 years of effort, uncounted thousands of yards of sand fill, and a staggering cost, the raising of the business district was complete.

It would be difficult to find a western town that was not periodically destroyed by fire. Sacramento's first occurred in 1852 and destroyed seven-eighths of the city. At the end of the day, between 1,600 and 2,500 structures were gone; 23 city blocks had been decimated. The second and last major fire affected parts of 12 blocks of the downtown business district in 1854, destroying the State Capitol and many buildings put up since the fire of 1852. Ordinances passed after these fires established the city's “fire limits,” within which only stone or brick could be used for building; furthermore, wood-frame buildings could not be raised to the new grade or moved onto lots within the fire limits (Askin 1978:4-7; Ulhorn 1873:113-114). Brick-built structures, it was felt, would be “our only protection against devastating conflagrations” (*Sacramento Union* 17 July 1854). By the end of 1854, Sacramento's 30 brickyards and 40 brick-making machines could produce a staggering 250,000 bricks per day (Wright 1880:146).

The creation of a landscape of prosperity so soon after the founding of the city and in spite of a series of natural disasters is a tribute to the fortitude of early Sacramentans. The rivers were tamed; fire would never again devastate the city. Yet the raising of the city's grade, the general orientation of business toward the street, and the

new pattern of filling up lots' entire width with contiguous brick buildings created a new and unforeseen peril—the sunken lots, portions of ground behind and between the brick buildings. Some had access to the alleyway that ran down the middle of each block; others were entirely enclosed, courtyard-like spaces between brick buildings, what one geographer has termed “nascent courtyards” (Groth 1990:33).

The boosters had claimed that, after street raising, Sacramento “would be one of the most desirable cities in the State and by far the healthiest” (*Sacramento Bee* 21 March 1862). It was not foreseen that, for a short time at least, street raising would actually detract from public health. At this time, disease was believed to be directly related to the foul smells and decaying matter that were an everyday part of urban life (Brienes 1978). Street raising actually contributed to the generation of these “miasmas” by creating low-lying lots that filled with stagnant water, and cellars that were commonly used for waste disposal (Brienes 1978; Severson 1973:131; Wright 1880:57). The Sacramento Board of Health was specifically charged to “make a systematic and thorough examination of all parts of the City where noxious and offensive substances are supposed to exist . . . and cause all stagnant water to be drained off” (Ulhorn 1873:92).

The basements created by raising buildings to the new grade were touted as a great boon for merchants who could use them for storage (*Sacramento Bee* 18 March 1862; Severson 1973:109). In the absence of reliable sewers, however, many property owners and residents used their lower story as cesspools that were said to be “unquestionably the occasion of more sickness and disease than any one cause in existence” (Ferral 1885:12). Restaurant food waste was also dumped into basements; the smell that issued from the oyster shell and bone-filled cellar of Cronin’s K Street Oyster Saloon on a hot Sacramento day must have been awful to experience (Praetzellis, Praetzellis, and Brown 1980:65).

Unlike the building of levees and the construction of street facades, the process of making the backlots habitable and healthful fell to individuals. The owners and tenants each tackled—or failed to tackle—the problem in their own way. Thus, while historical records show how the city as a whole and a few wealthy individuals put their civic pride into practice, through archeological site structure we can also see how ordinary people responded to the pressure to conform and create personal landscapes of prosperity. Public works and building facades are overt messages through which a city and individual property owners could demonstrate their endorsement of appropriate values to the world and their neighbors. The condition of their backlots, however, showed their individual commitment to civic values.

THE OVERSEAS CHINESE ON I STREET: A STUDY IN CONTRAST

Chinese and Caucasian Sacramento in the 1850s were, in some ways, parallel societies. Both had their civic leaders and both their distinctive mores. Furthermore, both had their own characteristic landscape: J Street for the Whites and I Street for the Chinese. The Chinese as a group actively resisted the encroachment of Victorianism and represented the last coherent bastion of non-Victorian values that left its mark on the city’s landscape.

Linking the embarcadero with the road to the goldfields, J Street immediately became Sacramento’s principal commercial street. Travelers heading for the goldfields could purchase all their supplies here and obtain lodging and entertainment. One block to

the north, I Street between 5th and 6th played the same supply and service roles for prospective Chinese miners and for residents. Numerous Chinese stores, gaming houses, lodgings, butcher shops, and a doctor's office were located there, while a Chinese theater provided entertainment one block to the west.

In contrast with the exotic face of I Street, J Street was the pride of commercial Sacramento. The scene of Sacramento's daily bustle was played out upon the regular set of a well-planned landscape. The very intensity of activity on J Street was a function of planning that had its root in the medieval burgh lot: city lots were only 20 feet wide but 160 feet deep. A single block of J Street could be flanked by 32 businesses on ground floor premises alone. Between street raising, the "brick-only" code, and a variety of ordinances governing everything from commercial signs and the posting of street numbers, to the display of goods on the sidewalk, the landscape of J Street was well ordered by the late 1850s. The object was to regularize business; a result was the creation of a design orthodoxy—the antithesis of I Street. Where I Street was eclectic, the brick-only code effectively mandated uniformity in building design. Almost from Sacramento's inception, the wood-frame buildings of J Street had imitated brick in the iron facades and squared, false-front parapets that hid simple, gabled roofs. The change from wood to brick was seen as a happy and natural evolution for these symbols of progressive, Victorian values.

In Barber and Baker's boosterish *Sacramento Illustrated* (1855), J Street is shown flanked by brick buildings with formal, Italianate facades (Figure 2). Its tidy boardwalk, regularly numbered buildings, and large lettered signs and symbols of adjacent businesses presented a front to the world that was stable, industrious, and bustling—the epitome of a Victorian commercial landscape. As it was with the commercial districts of other early California towns (e.g., Mann 1982), J Street represented many of the middle-class values of the day given material form through the boosterism of local merchants.

The Gold Rush-era practices of low capital investment, an emphasis on expedient, idiosyncratic solutions to material problems, and a sense of impermanence were clearly expressed in the I Street landscape, and thus contrasted on most levels with that of J Street. Buildings in "Chinadom" were more diverse in form and constructed of a variety of materials—wood, canvas, brick, and iron—reminiscent of the frontier architecture of "'49 and '50" (*Sacramento Daily Bee* 6 August 1857). Some had the recessed balconies popular in southern China (Lai 1988:69). Chinese buildings also perched on the side of the I Street levee below the street's surface and could only be reached by walking down unsteady wooden gangplanks. Others sat on stilts over the marshy fringes of China Lake outside the levee. To the Euroamerican eye, the HI56 Block appeared chaotic and foreign. It had few sidewalks, and merchants and itinerant peddlers commonly displayed their wares in front of shops, exposing passersby to the sights and smells of foods and other goods that would have been strange to the uninitiated. Street vendors carried their wares from house to house in baskets suspended on bamboo poles. Buildings sported hangings in bright yellow, red, and gold, and signs painted with Chinese characters (Figure 3).

The popular myth of Chinatown as place of narrow alleys and a maze of tunnels beneath the streets (Jackson 1972:196; Lai 1988:68-70; Nordhoff 1874:85) was, to a point, an accurate description of Sacramento. In Chinatown, the alleyways that ran east-west through the middle of each block were flanked with flimsy wooden shacks, the

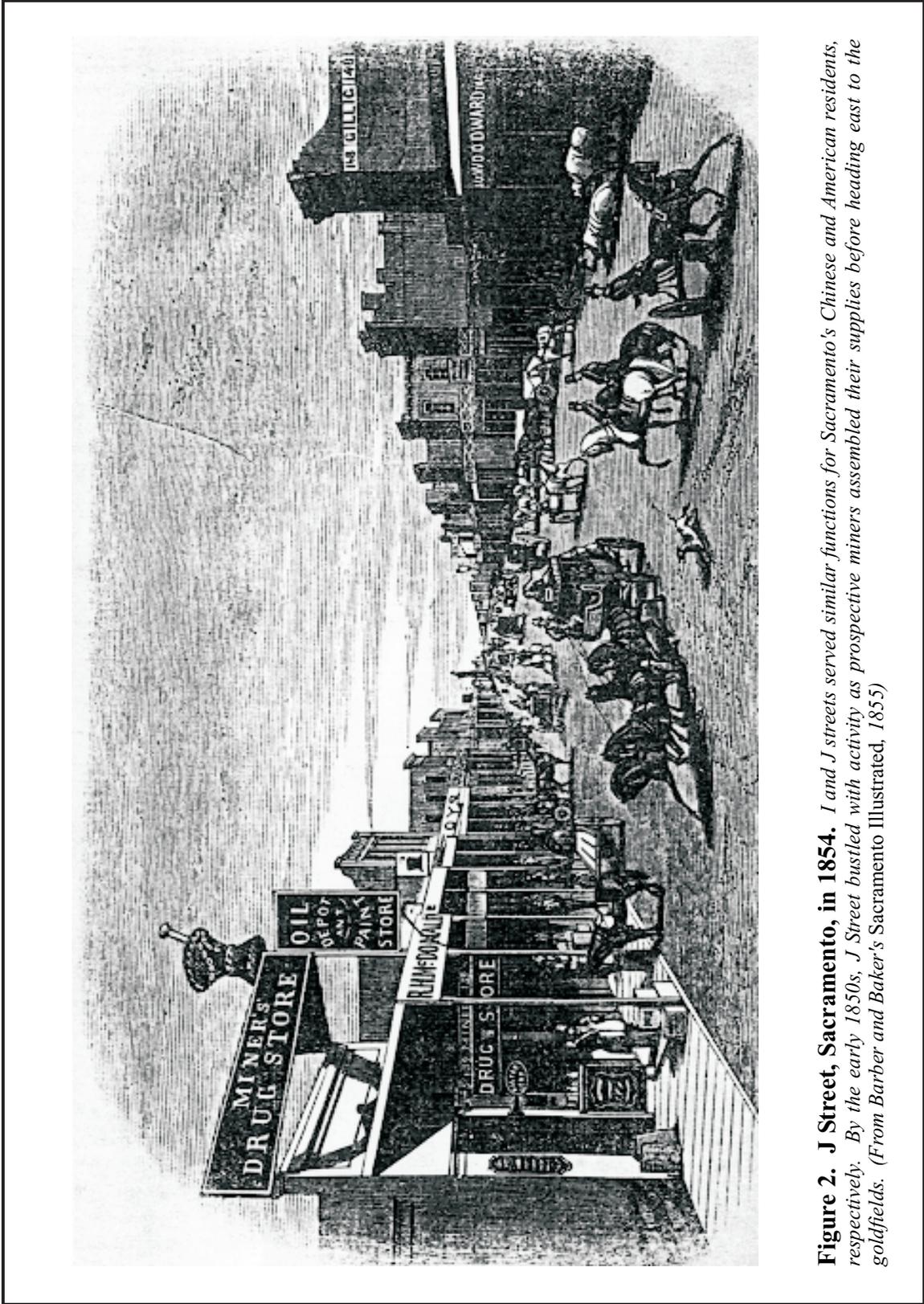


Figure 2. J Street, Sacramento, in 1854. I and J streets served similar functions for Sacramento's Chinese and American residents, respectively. By the early 1850s, J Street bustled with activity as prospective miners assembled their supplies before heading east to the goldfields. (From Barber and Baker's Sacramento Illustrated, 1855)

homes of poor Chinese. Tiny courtyards enclosed by dwellings—what the *Sacramento Daily Union* (31 August 1855) described as a “heterogeneous mass of tenements”—were to be found in the rear yards of parcels that fronted on I Street (Baker 1857). All Sacramentans knew that under the sidewalks of their town’s raised district, between the brick bulwark that restrained the street fill and the lower front of each building, was a passageway, several feet high and eight wide. While property owners on J Street carefully bricked off their own portions of this subterranean passage, local legend had it that under the streets of Chinatown was a parallel world of slaves and dens of depravity, as well as vaults of exhumed human remains (Minnick 1981:13).

While the Board of Supervisors and other boosters scrambled to regulate their city’s frontier architecture out of existence in favor of permanent brick buildings, Sacramento’s early Chinese residents may have been employing geomancy to advance their own notions of an appropriate urban landscape. The use of geomantic principles by Chinese in the western United States has been recognized by LeLande (1981) and Mueller (1986). Geomancy, or *feng-shui*, is the practical art of designing and positioning cultural features in harmony with the forces of nature. The archaeological evidence suggests that geomantic principles were used by merchants to orient structures on the IJ56 Block before parcel boundaries and orderly, city-wide street-numbering systems were established. Although the subtleties of geomantic town planning would have been lost on most Euroamericans, the distinctively Chinese landscape defined by the built environment and its embellishments resulted in the creation of a social and cultural boundary with clear material indicators. At a time when the Chinese were considered fair game for assault and even murder, the borders of Chinatown represented a zone of comparative safety (Chen 1981; Heizer and Almquist 1971); newspapers of the day reported that attacks on Chinese by Whites were far less frequent in Sacramento’s Chinese quarter than outside. The security provided by this boundary benefited all of Chinatown’s residents. Yet it was a particular boon to merchants whose economic interests were served by keeping the Chinese and Euroamerican populations apart and thereby maintaining the autonomy of Chinatown under the leadership of the merchant class. Omohundru (1981) observed Chinese merchants pursuing a similar pattern of exclusivity in the Philippines.

In addition to being geomantically favorable, Chinatown’s location on the edge of the slough provided a perfect stage for cultural display on the lake itself. In 1857 a “Chinese Regatta” attracted both Chinese and White spectators to view the race for “fifty dollars and a Chinese flag”; the boatmen reportedly “propelled their skiffs with extraordinary rapidity and acquitted themselves very creditably” (*Sacramento Daily Bee* 29 March 1857). On another occasion, the lake was used to good theatrical effect when religious items were ferried from their temporary home to a newly built temple on the opposite bank. The event was accompanied by music, firecrackers, and colorful ceremony (*Sacramento Daily Bee* 31 October 1865). Public ceremonies held by Sacramento’s Chinese were very effective ethnic boundary markers. Festivities for the New Year, New Moon, and the Chiao ceremony to “drive out the Devil” (Chace 1989; *Sacramento Daily Bee* 16 October 1866) were matters of interest as well as some amusement to outsiders. While some Chinese ceremonies appear to have been quite traditional, others incorporated American practices.

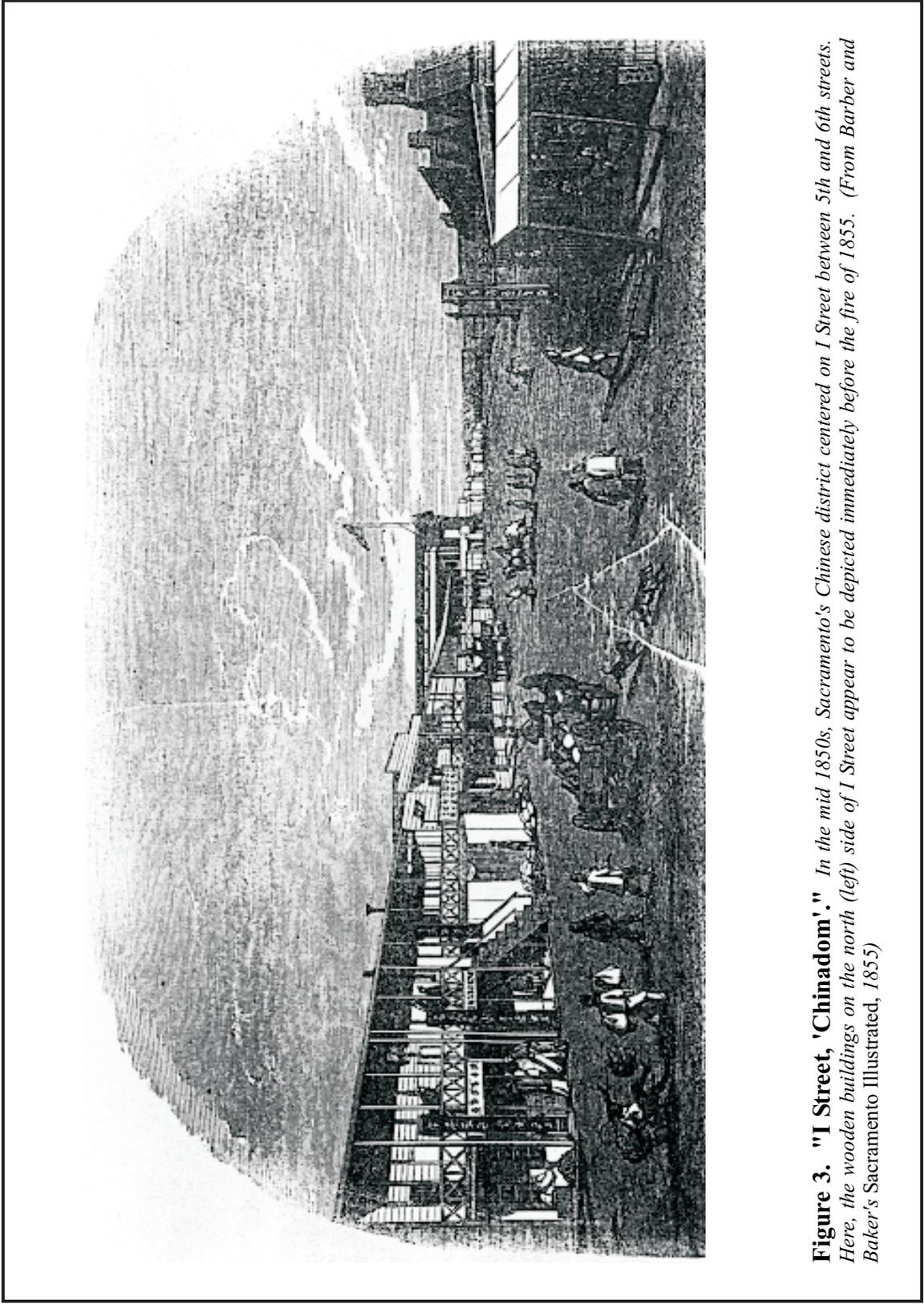


Figure 3. "I Street, 'Chinadom'." *In the mid 1850s, Sacramento's Chinese district centered on I Street between 5th and 6th streets. Here, the wooden buildings on the north (left) side of I Street appear to be depicted immediately before the fire of 1855. (From Barber and Baker's Sacramento Illustrated, 1855)*

Like their modern counterparts in San Francisco, the Philippines, and Hawaii (Barth 1964:98-99; Glick 1942; Nee and Nee 1972:405; Omohundru 1978, 1981), Sacramento's important Chinese merchants operated on the boundary between their own insular community and society at large. They established and maintained contacts with politicians, the press, and the judiciary to support their contention that the order of Chinatown was adequately and most appropriately monitored by internal forces. An 1861 account of the annual dinner held by some of I Street's Chinese merchants illustrates the relationship fostered by the merchants with influential outsiders. The dinner took place in a room behind a store, set out with Chinese paintings, sculptures, and hangings. The table was set with a cloth, knives, forks, and celery in glasses "very much like ordinary tables." Twenty-six courses, including birds' nest soup, were served. Champagne was brought on several times, and the "brands were all different and all first class" (*Sacramento Daily Bee* 7 December 1861). According to K.C. Chang (1977:16), food is recognized as a social language in Chinese culture. When for example, mid-19th-century merchants of Kiangsu and Chekiang entertained guests, they followed an established ritual of a 16-, 10-, or 8-dish meal depending on the significance of the occasion. Birds' nests, a common element of gourmet meals in parts of China, were a favored dish in such displays (Spence 1977:273, 277). The Sacramento banquet was evidently considered an important occasion and was part of a long-standing Chinese tradition. In this case, the ostentatious display of Chinese artifacts and food was subtly combined with innovations, such as champagne and silverware, to create the desired impression among the American guests. The dinner ritual successfully communicated that although Chinatown was alien and unknowable to outsiders, it was under the sway of a class of people who apparently shared some Victorian values.

A long tradition of economic sojourning and the pressure of political forces outside Chinatown were also important influences in the creation of Chinatown's strong social boundaries and exotic appearance. Almost on their arrival in California, Chinese immigrants were accused of decreasing the wealth of the country by sending most of their money home and of harboring the desire to return to their native land rather than settle in the New World (Miller 1969; Takaki 1990:10); in their criticism, European Americans forgot that sizable numbers of their own groups had established similar patterns of return (e.g., Berthoff 1953). Omohundru has written that "sojourning is basically an export of people and an import of remittances" (1978:113). Although some writers have criticized the over-use of the "sojourner" model (e.g., Chan 1984; Ng 1987), Chinese merchants have a long tradition of sojourning in southeast Asia and the Pacific, as well as in California, and associations for traveling merchants have existed for centuries. Strong ties to family, clan, and place, and a religion based on the veneration of ancestors, discouraged permanent settlement abroad (Ng 1987; Shiba 1970).

Doubtless, the sojourner attitude affected the Sacramento merchants' unwillingness to invest in capital improvements to their I Street properties. But, Gold Rush values survived in Chinatown's streetscape of the mid-1850s partly because the controllers of Chinatown continued to operate under externally imposed constraints similar to those that had faced the Forty-Niners. Prejudice on the part of Euroamericans was translated into discriminatory, anti-Chinese legislation by local, state, and federal governments. As Chinese could not testify in court against a White person, the legal status of Chinese-owned goods and property was always precarious (Heizer and Almquist

1971:154-161). As a result, Chinese merchants tended to invest less than their Euroamerican counterparts in material improvements that could be torched by rioting “Anti-Coolie” elements or legislated and taxed away by the state. The sojourner attitude of the original Forty-Niners was, in the case of the Chinese merchants, a considered and intelligent strategy of keeping their financial assets in liquid and readily negotiable forms. In general, their investment was in the fashioning of a network of trusted business associates, rather than in the construction of buildings.

HI56 BLOCK

The following focused overview of HI56 Block history has been taken excerpted from Brienes, West & Schulz (1981c:3-14).

No part of Sacramento better demonstrates the central importance of the Sacramento and American Rivers to the valley city’s development than the blocks between H and I, west of Sixth. The rivers determined the orientation of Sacramento to begin with, the initial focus of the new commercial center being on the embarcadero. A central commercial corridor running eastward toward the mines clearly centered on the main commercial artery of J Street, and formed the heart of the business district. It was this stretch of urban properties, from the riverfront to the Plaza at Tenth, that was raised above flood level during the 1860s (Lagomarsino 1969). Since proximity to the commercial core was a major factor in the development of blocks to the north and south, the north side of I Street in the earliest days of the gold rush could be considered a well-situated location. But at the same time, other frontages of these blocks, even if all else had been equal, would have experienced relatively retarded development regardless of their propinquity to J Street.

Despite the orderly platting of Sacramento City in accordance with the best 19th-century schemes of rationality and orderliness, local geography determined that much of this northern corner of historic Sacramento was frequently submerged. This body of water was known variously as Sutter Lake or China Slough. For the most part, though its level fluctuated with the volume of the river flow, the lake covered the greater portion of these lots. This had two unavoidable effects. First, it marked the northern boundary of urban development and forced growth easterly and southerly. Thus, in adding to the already existing commercial orientation, which was south from I Street, the presence of Lake Sutter dictated the most of this area for most of the time would be essentially undeveloped. The second effect was in the development of the dry land extending from the northern edge of I Street to the southern shore of the water. The lake ran parallel to I Street from Third to Fifth, and then its shoreline turned northerly. As a consequence all development was relegated to a narrow band running west to east along the northern edge of I Street, widening out between Fifth and Sixth where the lake’s borders tended to the north.

The slough not only eliminated the greater part of the area from use, but relegated what remained to an economically and socially undesirable status. This undesirability left the property along the I Street strip to be developed by the Chinese who in the 1850s became the most numerous of California's immigrant minorities. The Chinese were attracted to the mines in the same way and for the same purposes as their American and European counterparts. But when persecuted in the mining districts, increasing numbers began moving to the state's urban areas. Sacramento soon attracted thousands of Chinese residents—most of them settling in an insular community strung out along I Street. . . .

The lake had another connection with the Chinese that may have helped determine the location of Chinatown. Whatever the lake's positive potentials, it was for the most part a nuisance and a health hazard due to the limited possibilities of flushing by the Sacramento River. As early as November, 1852, the lake was called a "pool of filth" (Jenkins 1966:1). The *Union* dubbed it "the plague spot of Sacramento" in 1877. The *Bee* three years later wrote: "About the water's edge may be seen all descriptions of decaying garbage, kitchen refuse, etc., and the stench arising from the green and slimy water is simply sickening" (Jenkins 1966:4). The concern with stagnant waters and the dangers and discomforts of evil smells, decay, and filth in general was a powerful element in Sacramento civic affairs into the 20th century (Brienes 1978). Thousands of privy pits, inadequate or non-existent sewage systems, empty city lots that were used as dumps for all manner of refuse, animal and vegetable, plagued the river town. It seems clear that Sutter Lake was more often noted for its fetid quality than for its idealized perfected state. This, in addition to the flood danger, would appear to have lowered the desirability of the I Street frontage for Caucasians and thus left open the possibility of Chinese settlement.

Exactly what structures or individuals were on these blocks and where, particularly in the case of the Chinese who made up the vast bulk of the residency, is for the most part an insoluble question. The structures of Chinatown were many, and according to one of the best views, tightly crowded facing I Street. Available bird's-eye views show much construction bordering the lake. But it is difficult getting much detail for the Chinese residents. Census enumerators tended to lump all the Chinese residents of the area together without specific addresses as residents of the whole Chinatown district along I Street. Even more exasperating was the general conspiracy of silence worked by Sacramentans who, while needing the Chinese in the running of the local economy and individual households, sought to make them officially invisible, certainly to the eye of outsiders. As the benefits of boosterism grew through the 19th century, this studied ignoring of the Chinese became a major block to learning about their presence and participation in Sacramento. Tract after promotional tract revealed the city in minutely flattering detail without ever mentioning the Chinese, when in 1880 there were nearly 5,000 of

them, in 1890 about 4,300, and in 1900, after nearly 20 years of exclusion, still some 3,250 (Census of 1900, Population, part 1:565). The mainstay of our knowledge of 19th-century Sacramento, the city directories, virtually ignore the presence of the Chinese with the prominent exception of one 1880 volume, which includes a Chinese business directory (Crocker 1880). Little information seems to have survived from the Chinese community itself. There were a few Chinese directories in the 19th century, but these gave little information for the blocks under study, as they concentrate on the blocks further west, which were the more mercantile and densely populated sections of Chinatown. A Chinese language newspaper was published in the mid-1850s for about two years, but no copies are known to be extant (Chinn, Lai, and Choy 1969:70). The sum of our knowledge about the Chinese occupancy in Sacramento's Chinatown remains unfortunately small, and for the most part the information relayed is by the elements averse to their presence.

The early history of the HI56 Block, like that of the blocks to the east, is poorly known. The block was included in the range of the 1854 fire, but the lists of buildings destroyed in the conflagration include, for I between Fifth streets, only “one large frame, owned by Dr. Failie” and a “number of frames occupied by Chinese,” without even distinguishing between the two sides of the street (*Sacramento Union* 14 July 1854:2). The city map prepared later in the same year depicts, with highly questionable accuracy, no structures on the block. An 1855 view of “Chinadom,” however, shows a series of simple wood frame structures lining the north side of I Street, including this block.

That the block was rebuilt is certain, however, for a year later it burned again. Accounts of this second fire give clear evidence that Chinatown had by then extended east as far as Sixth Street (*Democratic State Journal* 4 July 1855:2). The fire, which seems to have consumed nearly all of the block, began in a building belonging to the See Yup Co. According to the paper, “an intelligent Chinaman” presented a list of the big losers in the disaster. This list powerfully evidences the density of Chinese concentration on this block in the 1850s, and places in unflattering contrast the lack of information from other sources respecting the Chinese on I Street:

Building	Loss
Wah Fong, store	\$5000
Tailor	600
Poh Green Fong, drug store	1000
Restaurant	1500
Ring Sing, boarding house	3000
Sang Lee & Co., store	8000
See Yap Co.'s building	1200
Yu Chung Co.'s goods and building	9000
Ya Zuck Co.'s goods and building	8000

Restaurant	1500
Sang Lee, building	1200
Won Hang, building	1200
Tsoe Wah, butcher	700
Tin Wah Zong, drug store	1100
Wong Lee, store	6000
Ming Yaong Co.'s house	1000
George Elder's building	1000
Madame Rosa's dwelling house	1500
Rear buildings and furniture	3000

The Madame Rosa noted at the end of the list is Rosa Hermosilla, who owned the south half of Lot 4, on Sixth Street, from 1856 or earlier until 1886. This might suggest that the businesses are recorded in order westerly along I to Sixth, but this is unconfirmed.

The street scene of “Chinadom” in 1855 was drawn before the fire of that year, since it had just been published at the time of the conflagration. These buildings were replaced by similar new one-story or two-story wood frame structures, as is demonstrated by the bird's-eye view of 1857.

The city directories are silent regarding the early decades of the block. No occupancy is noted at all until about 1870, when the Summit Ice Company is noted on I Street. Thereafter a pattern of business occupation emerges that shows the block had attractions for businesses requiring relatively large amounts of land that dealt in high volume-low price materials. These included ice, coal, cement, bricks and similar materials. Apparently this reflects two factors along the I Street frontage: the relative undesirability and hence relatively low value of the land, and the fact that the lake turned northerly along this block, exposing more land of the I Street lots than was the case on the other blocks, where the street line and lake shore ran parallel with only a narrow strip of land between them. Other Caucasian occupancy is to be noted over the years from 1875 to 1920, though the occupancy by the types of businesses noted above continued. Some residency occurred, concentrated on Lots 4, 5, and 6 almost entirely, and a saloon was at times located at the corner of I and Sixth as well.

In 1880, 42 white residents are recorded on the block (1880 Census, Dist. 78:3, 13-14) These include E.K. Hawkins and Malon Dusenberry, a bookkeeper and a carpenter, at 519 I, and W.F. Hicks, another bookkeeper, and his wife at 527 I. On Lot 4, at 810 Sixth lived the families of J.H. Johnson, a laborer and G.L. Shafer, a salesman, as well as Joseph Gosland (listed in the directories as Jacob Golsin), a Canadian-born tailor. At 814 Sixth were R. Dawken, a painter from England, his Mexican-born wife, a niece and nephew, and a female boarder. More densely occupied was Lot 5. There, undoubtedly in the tenements shown on the 1895 Sanborn map, were four households listed at 818 Sixth. These included Sarah Neely and her family of six children

(including two laborer sons); Lawrence Fisher, an English-born Central Pacific blacksmith, who lived with his English-born wife and brother and American-born children; J.D. Thomas, a railroad brakeman, and his family; and Patrick Scanlan, an Irish immigrant, whose occupation is not listed and who lived with his two adult daughters. At 820 resided A.R. Abbot, a harness maker who lived with his wife and stepson, while at 822 Sixth were bar tender William Wallace and his Chilean wife.

The neighborhood at the time was clearly working class. Of 14 men whose occupations are listed, four held clerical positions, seven were skilled laborers, and three were unskilled laborers. No merchants or professional men resided on the block, and none of the residents owned their own homes. Yet a modicum of stability is indicated by the fact that most of the occupants resided with families and all but Dawken and Scanlan were listed in the city directory (cf. Crocker 1880, in spite of the absence of most in McGowan et al. 1979).

Records of the Chinese occupation are rare. No HI56 businesses are noted in the Chinese directory of 1873, though five years later Quong Wo Hong, a druggist, is noted at an unspecified address on the block (Wells Fargo & Co. 1878). Two years later, 501 I Street is reported as the site of the “Chinese Masonic Hall”—doubtless the headquarters of a Chinese secret [or family] society (cf. Lyman 1970:34-38). Also noted as being on the block was a Chinese temple. The 1882 directory again contains no relevant listings. Census listings include only two Chinese households, both composed entirely of male laborers and both at 505 I Street (1880 Census, Dist. 78:3). One group consisted of three young adult ranch workers; the second included six older vegetable peddlers [excerpted from Brienes, West & Schulz 1981c:3-14].

PREVIOUS ARCHAEOLOGICAL RESEARCH

During the past 30 years, Sacramento has been the scene of numerous large-scale historic archaeological excavations. Early archaeological investigations concentrated on Sacramento’s embarcadero and the associated commercial district in connection with the construction of Interstate 5 in 1966 (Hastings 1968). This research focused on architectural reconstruction and recovery of artifact-rich deposits that were the result of city-wide fires in the early 1850s. From 1968 to 1978, the California Department of Parks and Recreation sponsored an intensive series of investigations of a half-block portion of Old Sacramento State Historic Park, just one block from the waterfront. Once again, architectural reconstruction was the principal rationale for this work, much of which—although not all (e.g., Butler 1979; Pritchard 1972)—was done using the arbitrary unit/10-cm level method devised for unstratified prehistoric sites.

Beginning in 1976 archaeological efforts shifted away from “Old Sacramento” and the embarcadero district with the excavation of the Hannon Saloon deposits at 4th and K streets (Schulz 1977), the Golden Eagle Hotel and other businesses at 7th and K streets (Praetzellis, Praetzellis, and Brown 1980), and a portion of Sacramento’s 1850s Chinatown at 5th and I streets (Praetzellis and Praetzellis 1982). These later

investigations emphasized the stratigraphic excavation of discrete archaeological features that could be associated with documented activities and social units. These investigations were outcomes of government regulations requiring mitigation of the destruction of archaeological sites prior to development.

In the summer of 1988, personnel of the Anthropological Studies Center (ASC), Sonoma State University, excavated portions of the Sacramento city block IJ89 in advance of development. The block was very rich in historic archaeological deposits; after only five weeks' field work, the crew returned to the lab with more than 140 archive boxes of well-provenienced artifacts. Rather than produce a single, unwieldy multi-volume report on the investigations, the directors decided to create four reports. Each of these documents stands alone as an excavation report on a distinct, historic archaeological component of the block. The reports discuss the following: (1) the Pioneer Junk Store, 1877-1908 (Praetzellis and Praetzellis 1990a); (2) discrete domestic deposits representing three identified households from the 1860s and early 1870s, and one unidentified household from the early 1850s (Praetzellis and Praetzellis 1990b); (3) the backlot of the San Fong Chong laundry (Praetzellis and Praetzellis 1990c); and (4) a cellar deposit associated with the household of Mary Collins and her children, created by the demolition of the family's rented home circa 1905 (Praetzellis and Praetzellis 1990d).

Again, in the summer of 1991, ASC personnel excavated three features on the JK/14-15 Block: a small refuse-filled pit that was once located beneath the Newman family's hen house (Praetzellis and Praetzellis 1992a); a low-lying area once beneath the residence of Mrs. Hudson at 1408 J Street (Praetzellis and Praetzellis 1992b); and a privy associated with an African American family, the Cooks, who lived on the alley at 1418-1/2 J Street (Praetzellis and Praetzellis 1992c). This third feature is believed to be the first archaeological deposit associated with an identified African American family excavated on the West Coast.

RESEARCH DESIGN

This research design is based on ones developed for the cities of San Francisco (Praetzellis and Praetzellis, eds. 1992), Sacramento (Praetzellis and Praetzellis 1991; Praetzellis and Praetzellis 1993), and Oakland (Praetzellis, ed. 1993). Over the past 10 years, the research design has been applied successfully on numerous occasions on urban Sacramento deposits, enlarging and building upon the knowledge gained from each project. The research design follows a contextual approach in the evaluation of the significance of properties.

MODERNIZATION, VICTORIANISM, AND ETHNICITY

The history and archaeology of the HI56 Block will be viewed within the framework of an issue that is of great importance to social historians: the process by which people from traditional, premodern cultures—both immigrant and native-born—adapted to life in an industrial society (Gutman 1977). In 19th-century America, this process involved a change from a traditional, “face-to-face” society (Redfield 1955) to one that emphasized rationality in economic relationships, specialization, and efficiency, and whose goal of an improved future was to be measured by material progress (Brown 1976:29; Wallerstein 1983). Until as late as the 1970s, many economic historians

conceived of 19th-century modernization as a simple, linear process. According to this model, societies evolved in a straight-line path from traditional, agrarian-based communities, in which social control was maintained by church, family, and an inviolable social order, to industrialized ones in which “centralization, bureaucratization, and role segmentation” were the rule (Bender 1978:56).

A parallel interpretation, and one which has come to predominate in recent years, rejects the idea that all vestiges of the preindustrial past were rejected by all segments of society undergoing urbanization. Glazer and Moynihan’s (1963) classic examination of the strength of immigrant ethnic culture in New York and studies of resistance to industrial culture on the part of workers (e.g., Hirsch 1978; Rodgers 1978) have contributed to the view of urban pluralism developed by Bender (1978). Bender proposed that the modernization of 19th-century American urban dwellers was multilinear and complex: multilinear because various class and ethnic groups participated to varying degrees; and complex because individuals and families were simultaneously involved with both traditional and modern ways of life. Through the mechanism of family and social networks, national, religious, and ethnic ties remained strong and encouraged communal, traditional values and practices (Bender 1978:122; Haraven 1978). At the same time, industrial time discipline, the cash economy, and relationships with government institutions necessitated that individuals be able to function within the modern order (Rodgers 1978).

It has been suggested that a set of cultural values, practices, and aesthetics known as “Victorianism” (Howe 1976; Wiebe 1967) came to predominate among the Euroamerican cultural and political establishment of this modern society. Victorianism is said to have been a “homogenizing force” (Hardesty 1980) upon the cultures of immigrants and the native-born working class alike, attempting to replace traditional mores with modern values and patterns of behavior suited to their roles in an industrial society.

VICTORIAN VALUES AND PRACTICES

Victorian values had strong and clear behavioral and material correlates, many of which were displayed in the home (Praetzellis 1991). The essential moral quality of a Victorian family was expressed by the presentation of tasteful, Gothic-style artifacts in their appropriate context (Eastlake 1878). To maximize this effect, the home itself had to be of the correct style and internal arrangement. The relationship between Gothic architecture and mid-19th-century Christian values has been examined by Clark (1976). This architectural form, with its church-like exterior and functionally discrete interior spaces, provided the ideal context in which highly formalized Victorian social interactions, dubbed “secular rituals” (Moore and Meyerhoff 1977), were carried out.

Artifacts played an essential part in Victorian families’ household rituals. On the largest scale, Romantic Revival houses were themselves designed to accommodate these rituals (Clark 1976:51-52). If a prospective visitor were allowed beyond the front stoop of a middle-class home, the hall stand would receive his or her visiting card. This piece of furniture was a veritable icon of respectable values because of its role in this highly formalized practice of social visiting, an essential part of 19th-century manners (Ames 1978; Lynes 1963:147). Proceeding through the hall, the new arrival would be ushered into the parlor. It was here that morning callers were received and afternoon tea parties

and evening receptions were held. In the parlor, the guest would experience an environment created solely for such formal receptions; a room whose embellishments expressed the public face of both middle- and working-class households (Cohen 1986). The parlor's interior was a vision of respectable clutter: weighty, dark-stained furniture shrouded in swags of heavy fabric; walls jammed with copies of famous works of art; and every flat surface home to some figurine or gilded trinket (Seale 1981; Vaux 1864:95-97). The expense of outfitting a middle-class parlor in 1877 was more than three times that of any other room (Lynes 1963:142). Only in the homes of the rich was it not maintained at the cost of some inconvenience, for this room took away space from a family's informal living space. The volume of good taste in the parlor was redundant to the point of being overwhelming, and its cultural significance was understood by all who entered (Grier 1988).

The dining room was also a public room in the Victorian house. The rules to be obeyed here were even more elaborate and intricate than in the parlor, and the display of fashionable artifacts, such as dinner ware, was equally important. The best dinner service, crystal, and silver were displayed in a dresser, while decorative platters and bric-a-brac ringed the wall on a shoulder-high plate rail. Under the popular "English" system of dining, serving vessels were passed from hand to hand around the table; plates never arrived pre-portioned from the kitchen in a well-regulated Victorian household. At a formal dinner, each table setting included several drinking vessels; until the rise of the temperance movement in the 1880s, each course might be served with its own type of wine (Lynes 1963:176-199).

Nineteenth-century intellectuals from John Ruskin to Henry Ward Beecher fostered the belief that beautiful surroundings created good people (McLoughlin 1970; Ruskin 1959; Watkin 1977). While tasteful design could educate, bad design was berated as an immoral influence (e.g., Beecher 1868). Starving a child's soul of beauty condemned it to an empty life of frustration and despair. Material culture had the power to improve and uplift, and reformers explicitly promoted specific fashion modes to achieve their religious and social ends. The moral connotations of material goods, however, shifted through time and according to observer. Whereas the Gothic Revival inspired middle-class European and American consumers from the 1840s through the 1870s, the embellishments that had formerly designated comfort came to be seen as cluttered gaudiness, connoting "sloth" by the 1890s. The Arts and Crafts and Colonial Revival movements and the Centennial celebration inspired pride in America and its accomplishments. A "Buy America" campaign stressed not only products of local origin, but products along a certain line. These goods melded the wonders of technology with the simplicity of nature, a combination that can be seen most clearly in Craftsman-style architecture. According to Gustav Stickley, a proponent of things Craftsman, "Luxurious surroundings . . . suggest and induce idleness." By the turn of the century, the American middle class had by and large rejected Victorian fashion and adopted a style of decor that was seen as simple, natural, and efficient (Cohen 1986:275).

ETHNIC DISPLAY AND BOUNDARY MAINTENANCE

Three archaeological features excavated on the IJ56 Block in 1981 were firmly associated with Chinese merchants, members of the Sze Yap district association, who occupied the lot through a sequence of fire and reconstruction in 1855. These features

and their contents show how the merchants attempted to create a traditional Chinese environment in Sacramento and used ethnicity as a tool by which to maintain and enhance their influence on both the Chinese and White communities (Praetzellis and Praetzellis 1982).

Although artifacts were important tools for influencing outsiders, the merchants' chief interest in artifacts was as salable items. Feature 1 on the IJ56 Block reflects this aspect since it contained what appeared to be a broken shipment of tableware. The ceramics were identical porcelain bowls of a type known to archaeologists as "Double Happiness," because of their *shaung hsi* motif, a common decorative element in Chinese art that expresses the wish for happiness and long life (Chavannes 1922:23). In the context of everyday use, the Double Happiness bowl reflected a familiar and long-established decorative motif that may have offered some psychological comfort to the immigrants who purchased and used them. These characteristics were used to advantage by merchants who encouraged the continued use of traditional goods, since they themselves controlled their importation and distribution.

A second collection of archaeological materials, this from Feature 5 on the IJ56 Block and also firmly associated with Chinese merchants, was the product of domestic behavior and consequently can offer insights into the use of artifacts in a different behavioral context. Although there is a preponderance of Chinese food storage and tableware vessels and food bone bearing distinctively Chinese butchering marks in this collection, some of these materials are Euroamerican.

Collections of artifacts that include both Chinese and Euroamerican items are generally interpreted as evidence of acculturation on the part of the Chinese. Historical and ethnographic research, however, provide alternative explanations for this pattern in the present context. First, the non-Chinese materials reflect the merchants' superior access to goods compared with the nonmerchant population. A mixed collection from a nonmerchant household, suggesting direct economic relations with White American society, would be a less common phenomenon if the foregoing ideas about Chinese merchants' desire to exclude White competition are correct. Material innovation is far from being coterminous with cultural change; the cultural significance of the former depends on the meaning of the artifact within a given social context.

The use of Euroamerican ceramics and some processed foods may have represented a new cultural norm for some Chinese immigrants. Such new practices, however, were not seen as being in conflict with traditional modes of thought since these values were not tightly connected with the traditional materials. Indeed, limited material innovation on the part of merchants was advantageous for the survival of more important aspects of Chinese culture, particularly those that aided in the consolidation of the merchants' own position of power within their own community.

ARCHAEOLOGY AND MATERIAL CULTURE STUDIES

Beliefs, cultural attitudes, and values are not directly accessible through archaeological data (Binford 1962, 1965). Ian Hodder, however, pointed out that ethnicity is an appropriate subject for archaeological studies if it is defined as the "mechanism by which interest groups use culture to symbolize their within-group organization in opposition to and in competition with other interest groups" (1979:452).

Thus, ethnic strategies such as boundary maintenance that were expressed in patterns of behavior that took material form can be studied archaeologically.

To apply these concepts successfully to the study of the Overseas Chinese, rigorous standards must be applied to highly focused historical and archaeological research. The highest level of control over the source of archaeological collections exists when one can identify the individual social unit responsible for it. The core of the approach taken in this study is identifying and examining, through archaeology, particular social units. As Staski (1985:239) points out, social forces would have affected portions of the immigrant Chinese society at different rates. Ethnographic and historical sources can provide a firm comparative basis from which to apply the direct historical approach. This information must provide more than just background to the archaeological finds, for “in each particular context general symbolic principles . . . are rearranged in particular ways as parts of the strategies and intents of individuals and groups” (Hodder 1982:217). Sound archaeological reasoning requires an understanding of the artifacts’ behavioral context before one may speculate on their symbolic significance for the people who used them.

Archaeology is one of the few sources through which the secular rituals practiced by 19th-century families and individuals can be examined. Archaeological data are democratic in that poorer people and cultural minorities, who are meagerly represented in the written record, are as likely as the rich to have left archaeological remains. Equally significant, however, is the ability of the archaeologist to associate remains with historically documented households of known ethnic, national, and economic characteristics. In this way, the archaeological data are sufficiently controlled to allow both synchronic and diachronic comparisons within and between groups.

In Sacramento, as elsewhere, it is postulated that some people maintained traditional practices while also conforming or converting to certain formal Victorian mores and tastes. The social and municipal agendas of Sacramento’s early Progressives were products of Victorian values that can be seen in the consciously created urban monuments constructed by these people and in archaeological remains—unconsciously made but nonetheless reflective of their era. While the values of the new age dominated much of the material culture of 19th-century Sacramento, elements of preindustrial, non-Victorian ways of life held sway in many quarters. The relative influence of Victorian values on individual households of varying social, economic, and ethnic affiliations can be gleaned from the archaeological record that has survived them.

During the 1850s and into the 1860s, the HI56 Block was the center of the Sacramento Chinese community. By the 1870s, changes from both within and without the Chinese community resulted in a new geographic focus for the area’s Chinese: I Street between 5th and 2nd streets. The HI56 Block was increasingly used for warehousing materials prior to shipping on the railway that crossed the block. Nevertheless, those portions of the block that remained residential constituted one of the most ethnically and racially mixed sections of the city well into the 20th century. Archaeological excavation, in combination with documentary evidence, has supplied the specifics of the blend of Victorian and preindustrial or ethnic modes that existed side-by-side in the pluralistic society that was 19th-century Sacramento. Consumer behavior,

fueled by the industrial revolution, has presented numerous avenues of inquiry when informed by the ethnic, economic, and demographic characteristics of the household associated with each recovered archaeological deposit.

RESEARCH THEMES

All historic archaeological deposits possess information. The problem is to determine whether this information could be obtained in a more cost-effective and straightforward manner through the documentary record, oral history, or other nonarchaeological data sources. To be effective, an archaeological research design should link archaeological deposits with historically documented events and processes so that significant archaeological research questions may be identified.

The research themes outlined below are currently being studied by historical archaeologists working in urban contexts. The themes are broad and could be studied in most urban areas, given an adequate archaeological and documentary record. Some of these questions require the analysis of only one deposit; others must be viewed at the parcel, block, neighborhood, city, or even inter-city level. In addition, Theme D addresses interpretive potential and identifies those classes of resources important for their public values.

The research questions are phrased so that they could be used to evaluate the importance of archaeological deposits as they were encountered in the field. Within a contextual approach, questions build upon each other as new data are gathered from the ground, from the archives, from maps and photographs, and from oral-history informants. The answers, when woven together, provide a richer more human history of Sacramento and a deeper understanding of the people who once lived there.

THEME A: CONSUMER BEHAVIOR/STRATEGIES

Question 1. Does this resource enable us to describe the consumer practices and disposal behavior of a household or business with specific social, occupational, economic, and/or ethnic characteristics?

This is one of the core questions of the research design. It identifies archaeological deposits created by the disposal of refuse. As in the present day, refuse includes the remains of food preparation and consumption (containers, left-overs, bones, seeds, spoiled food, etc.), as well as broken and unwanted household paraphernalia. Archaeologists study refuse deposits associated with specific households to understand the way of life of people in the past at a level that could never be achieved through the written record: What did they eat? How did they allocate their money? Where did they shop? How was food prepared and served? Was dining formal or informal? How were they influenced by fashion, mass marketing, and/or social movements? What household items did they consider disposable or unwanted? What medicines did they use and how do these correlate with gender-specific, age-specific, or occupation-specific epidemiology?

Given the previous discussion of resistance to, and modification or acceptance of, middle-class values and material culture on the part of urban working people of various ethnicities, the consumer and disposal practices of these Sacramento residents can provide a wealth of comparative data from a range of households that could make

important contributions to the understanding of this important issue. Did households purchase new or used goods? Did they shop in junk stores or from mail-order catalogues? Did Chinese residents purchase Chinese goods exclusively? Were dwellings decorated with items that were traditionally Chinese or were items currently fashionable with middle-class consumers also displayed? Was cost, tradition, quality, fashion, or efficiency the prime influence on consumer choices?

Question 2. Does this resource add to our knowledge of the availability of various classes of consumer goods at a specific place and point in time (i.e., material remains associated with a mercantile establishment)?

The question of availability must be addressed along with that of consumer choice. In some contexts, the cost and availability of goods may have had the greatest influence on consumer choices. During the Gold Rush, for example, merchants from around the world are said to have dumped their obsolete and damaged merchandise on desperate Californians scrambling for scarce consumer goods. Archaeological excavations in the remains of the Warren and Cothrin stores that burned in Sacramento's great fire of 1852 support this proposition and show the relatively limited range of goods available in early Sacramento (Butler 1979). Likewise, excavations at the Pioneer Junk Store elucidate the range of goods available secondhand in early 20th-century Sacramento and provide evidence of recycling (Praetzellis and Praetzellis 1990a).

Shops within the HI56 Block included Chinese butchers, grocers, and druggists, as well as a corner saloon operated by various persons of European descent. Refuse deposits associated with these ventures would give a partial answer to the question of availability. Did the Chinese merchants cater, in whole or in part, to their countrymen selling exotic foodstuffs essential to the preparation of traditional ethnic meals? Chinese merchants on the south side of I Street catered to their countrymen while using western material culture to advance their position within the Sacramento business community. They ate locally grown Chinese vegetables and imported dried Chinese fish, as well as quantities of pork (Praetzellis and Praetzellis 1982). Did the goods sold on the north side of I Street vary between shops or through time? Is there evidence of Chinese medicinal or butchering practices? How did the food and drink served in Sacramento saloons vary? Can this be tied to the ethnic or occupational characteristics of the saloon patrons?

Question 3. Does this resource add to our knowledge of adaptive behavior in urban settings associated with the acquisition and consumption of foodstuffs or the organization and use of space?

Although limited by factors of cost and availability, 19th-century urban dwellers had potentially good access to a variety of commercially supplied foodstuffs. The choices made by individual households in these and other purchasing decisions can be reconstructed through archaeology. The contribution to the urban diet through the efforts of individual householders can help us to gauge the level of reliance on commercial versus self-procured food resources. Pollen studies can often contribute to this work on a block or parcel level by providing evidence of vegetable gardens (Kelso and Beaudry 1990), whereas the discovery of the remains of noncommercially taken fish or evidence of animal husbandry could allow statements to be made about the food-acquisition practices of individual households.

How did households balance their economic strategies? How did households use their yards? Did this vary by ethnicity or neighborhood? What can be learned about the daily diet from the assemblages recovered from various backlots? Did residents fish or capture waterfowl from the slough? Were any animals butchered on site? Did the use of backyards change through time?

THEME B: ETHNICITY/URBAN SUBCULTURES

Question 1. Does this resource reflect the rise or relative influence of Victorianism as a class-based ideology? Does this resource reflect resistance to Victorian or post-Victorian tastes and mores, or the persistence of traditional values?

Victorian values were the values of middle-class commercial and professional interests during much of the 19th century. Others have suggested that these characteristics included (in no particular order and with some redundancy) piety, purity, submissiveness, and domesticity in women (Welter 1966:152); rectitude, thrift, sobriety, and hard work in men (Wiebe 1967:4); self-discipline, temperance, and respect for authority (Mann 1982:210); and steady work, punctuality, and compulsive behavior in general (Howe 1976:10). Apparent inconsistencies—such as hard-headed rationality along with mawkish sentimentality—pervade the system. These inconsistencies emphasize the transitional quality of Victorianism, which sought to “soften the hard edges of modernization” with glances back to a bucolic, preindustrial past and visions of a better future through science, education, and Progress (Brown 1976:31). Victorianism as a statement of fashion transformed into the Arts and Crafts movement; the values remained the same, but their appropriate material manifestation evolved to express the triumph of technology and progress.

As a multifaceted set of values that influenced the lives of its predominantly middle-class participants in many ways, Victorianism (and post-Victorianism) found its way into artifacts, behavioral patterns, and specific historical events and processes on many levels—from municipal public works, to children’s toys and decorations in ordinary families’ homes, to archaeological site structure and content (Praetzellis 1991).

Conversely, the distinctiveness of traditional Overseas Chinese and working-class consumer practices, in spite of assimilative pressures from domestic reformers and from society at large, can be viewed as resistance to middle-class values. For many workers, efficiency, productivity, and modernization simply meant mechanization and depersonalization of the work place and of the worker.

Archaeological deposits associated with mid-19th-century households can be examined for evidence of their respective degrees of participation in or rejection of Victorian and post-Victorian patterns of domestic behavior. Artifacts associated with formal entertaining can be examined for evidence that these practices became more important through time. The archaeological remains of landscape values and disposal practices of individual households can be viewed within their backlots. The survival of ethnic foodways and other practices can be studied in deposits associated with Sacramento’s various ethnic groups, who lived in close proximity to each other at this time.

Question 2. Does this resource possess artifacts and/or faunal remains that could be used to elucidate the role of symbols in defining and maintaining boundaries between groups?

Scholars have been suggesting for some time that archaeologists could make a contribution to the study of ethnic boundary maintenance (Brown and Bragdon 1982; Kelly and Kelly 1980; McGuire 1982). Much has been written by ethnographers on ethnicity as social process among the Overseas Chinese. On the community relations level, it has been noted that where the host people have been hostile to the Chinese traditional values, behaviors and organization among the immigrants have been reinforced (Coughlin 1960:192; Glick 1942:647-675). Conversely, where relations have been good, outward signs of Chinese ethnicity have become less noticeable (Amyot 1973:82). In personal interaction across ethnic lines, John Omohundru reported that Chinese merchants “advertise their ethnic distinctiveness and consequently shift the stress inherent in face-to-face commercial transactions at the ethnic group level” (1978:130). In this way, each party involved in the transaction has mutually understood expectations of the other that help to regularize their business relationships. The Chinese merchant community itself has strong reasons for preserving its ethnic boundaries: “the reason is business, the method is to organize an entire commercial ethnic group” (Omohundru 1981:84). The commercial advantages of exclusiveness include the ability to deter competition, fix prices, obtain credit, and to settle disputes informally.

Merchants were the usual choice to represent the Chinese community as a whole to local government officials and other influential bodies (Coughlin 1960:80; Glick 1938:74; Lai 1988:191). The Chinese middleman was often someone with ties to specific native individuals whom he could call upon when needed (Omohundru 1981:114). When not excluded by law or practice, Chinese businessmen became involved with local government and could serve as official intermediaries by virtue of their bilingualism and their positions of respect in both communities (Glick 1938:740).

It is clear that the Chinese merchants’ ethnicity involved more than simply cultural display for its own sake. The actor’s emphasis on ethnic differences will vary “from time to time, from situation to situation, depending on the way they interpret their interests” (Coughlin 1960:191-192). As an active force, ethnicity can be a strategy for both survival and economic advancement. The aspect of Overseas Chinese merchant culture that is most relevant to this study was their position as middlemen in relations between resident Chinese and the host community. It is in this situation that the use of symbols as ethnic boundary markers should be most evident.

Social boundaries are marked by material symbols of ethnic differences—style-bearing artifacts. The historic record of Sacramento’s Chinese community shows that style was expressed through differences in landscape, public display, dress, and language. Although the latter two characteristics have left little or nothing for the historical archaeologist to work with, historical studies of landscape and ethnically specific public display can be rewarding. For example, the site of the Sacramento Overseas Chinese community bordering Sutter Slough was geomantically favorable and provided the perfect stage for cultural displays, such as boat races, on the lake itself. While collections of artifacts that include both Chinese and Euroamerican items are generally interpreted as evidence of acculturation on the part of the Chinese, a contextual approach provides an alternative explanation for this pattern in the 1850s Chinese

merchant community in Sacramento. Here, the non-Chinese materials reflected the merchant household's superior access to goods compared with the non-merchant population. Artifacts used by merchants themselves also may have served a stylistic function in boundary maintenance displays to emphasize the differences between themselves, as boundary people, and the Chinese community at large (Praetzellis, Praetzellis, and Brown 1987).

The varied ethnicities of Sacramento households and businesses may be expressed in material form on the landscape as gardens, fences, and in other forms of public display. Understanding the meaning of landscapes, style-bearing artifacts, and behaviors reconstructed from site structure as ethnic boundary symbols could be derived from the contextual approach.

THEME C: URBAN GEOGRAPHY

Question 1. Does this resource help us to understand the characteristics of the natural environment and the landscape modifications made during the historic period? Does this resource aid in our understanding of the beginnings of urban planning and infrastructure—water supply and storage, trash and sewage disposal, fire protection, drainage—in this city?

China Lake is a highly unusual context because of its geographic proximity to a population center occupied from the beginning of the American period. The environmental record in the lake sediments is a unique source of information to expand the poorly known spectrum of pre-contact vegetation in the Central Valley. In addition, a clear pollen record could help to chart the dramatic vegetation change that occurred in the mid-19th century as native species were replaced by exotics.

Civic improvements that are carried out by government agencies are generally planned and well documented. In western cities of the late 19th and early 20th centuries, these projects were often undertaken on a large scale to overcome the natural disadvantages of the city's site. Sacramento, for example, was a classic "instant city" that sprang up to take advantage of a particular historical phenomenon: the Gold Rush. Situated at the junction of two seasonally flooding rivers, the city was assaulted by several major floods that, for a time, threatened its status as regional commercial center and state capital. As discussed above, the city's reaction was to raise the level of its business district by as much as 16 feet.

The progress and process of street raising are generally well documented in contemporary primary and secondary sources (e.g., Lagomarsino 1969). The responses of the citizenry itself, however, are largely unknown since this level of activity occurred one parcel at a time and varied significantly throughout the city in spite of city ordinances that attempted to regulate them (Praetzellis 1991). Archaeology is the only source through which we can examine the responses of individual residents to some legal norms established by the city. For example, in many cities "earth closets" (i.e., privies dug directly into the ground) were outlawed in the 1880s, and historic records document many sewer hook-ups at this time. Archaeological evidence, however, demonstrates that some urban households and neighborhoods continued to use earth privies well into the 20th century (Praetzellis and Praetzellis 1992c). Similar examples of ad hoc drainage, fire protection, and refuse disposal have been discovered archaeologically.

Question 2. Does this resource demonstrate the relationship between public perceptions of the environment and public policy? How did society's perceptions of the cultural landscape and modifications to the environment change over time?

Joan Geismar has studied variability in fill sequences in New York City, viewing fill layers in tandem with city and state health legislation to ascertain the response of inhabitants to health regulations. By 1790 as medical knowledge of disease grew, City authorities began to link aspects of refuse disposal with the spread of diseases like yellow-fever. Whereas waterfront fill in the mid-1700s included ship's ballast, abandoned ships, tannery refuse, butchery waste, construction debris, garbage from city food markets, and even human waste, refuse disposal became more highly regulated in the 1800s. During periods of yellow-fever outbreak (or of similar contagious diseases), Geismar found that layers of fill deposited in city environs were relatively sterile (i.e., contained very few or no artifacts). As the number of years after an outbreak increased, however, residents once more began to see filling activity on city lots as an opportunity to rid themselves of household and industrial wastes. Thus alternate sequences of semi-sterile fill (what people of that era called "clean, wholesome sand") interspersed with sequences of refuse-laden fill can be read, in New York City, as a record of the health of city dwellers (Yentsch 1993:331, citing Geismar 1987).

What plant life characterized the local environment prior to the arrival of the Spanish explorers? How rapidly did the environment change? What does the stratigraphic sequence created by the filling of China Lake tell us about the history of Sacramento and the health and priorities of its residents?

THEME D: INTERPRETIVE POTENTIAL

Question 1. Does the resource have public interpretive potential? For example, could the site provide information about the lifeways of a poorly documented ethnic or occupational group that can be used to better explain the group's position in the city's history to visitors and residents?

The value of archaeologically derived materials for use in exhibits is beyond question. A carefully planned display of artifacts, text, and photographs can move and educate an audience. Results from the multidisciplinary investigation described herein could form the basis for a sensitive rendering of Sacramento and its people in a way that could not be accomplished without the active voice provided by the tangible objects of the past.

Question 2. Does the resource contain artifacts that could be used to interpret the past in a museum or public display or as a tangible, hands-on component of a teaching unit developed for use in schools?

The archaeological study on the IJ56 Block resulted in the creation of a traveling display portraying the excavation and its findings. The large volume of materials expected to have survived within the archaeological record of Sacramento could form the basis for type collections to be used by local teachers in their California history sections. For example, a teaching unit focusing on the material culture of the Overseas Chinese could be developed.

CHAPTER 3 METHODS AND INITIAL STUDY

In general, the Sacramento Federal Courthouse Project followed the methods developed for the Cypress Freeway Replacement Project being undertaken at the same time in Oakland for the California Department of Transportation and outlined in the *Cypress How-to Manual* (Mc Ilroy et al. 1995). Aspects specific to the Sacramento project are presented below.

HISTORICAL RESEARCH METHODS

Research in a variety of sources (i.e., archival, interview) is usually necessary to allow full interpretation of archaeological sites. The goal of this research has been to develop two complementary sets of data: highly focused information on the associations of the archaeological features themselves—who created them, when, and in the course of what activities—and more general information on the site’s milieu. This kind of research establishes historical associations and context for a feature, helps to focus research questions on actual data gaps, and provides an independent source that can be used to complement and interpret archaeological data.

RESOURCES

Elaine-Maryse Solari conducted research in the following facilities and record groups:

County Recorder’s Office, Sacramento

Deeds

Leases (NB: index is at the Sacramento Archives)

Marriage Indexes, 1850-1880

Sacramento Archives

Assessment Rolls

Chinese Poll Tax

City Block Index

City and County Map Books

City Directories

City Tax Collector-Business License Index

District Court Records

Index to Letters, Correspondence, Diaries, Journals

Photograph Index

Probate Records

Sacramento Bee and *Sacramento Union* Indexes

Sacramento Illustrated
Sole Trader Index, 1856-1881
Tapper's Record Book, 1854-1877

Sacramento Room, Sacramento Main Public Library
Card Catalog

California Room, California State Library
California Card File
California Pioneer Cards
City Directories
Daily Democratic State Union
Pioneer Letters
San Francisco Call
Tuolumne County Great Register, 1867

Bancroft, University of California at Berkeley
The Oriental

Personal Communication
Ronald L. Gallup, 23 January 1996

Karana Hattersley-Drayton and Jeannie Yang conducted interviews with the following individuals:

Stanley Chun
Margaret [Wong] Lim
Raymond Young
Eddie Chan

All interviews were tape recorded and either transcribed verbatim or summarized. Tapes, transcriptions, and summaries are on file at the Oral History Archive, Anthropological Studies Center, Sonoma State University, Rohnert Park, California. Brief summaries of the interviews are included as Appendix A.

Until 1861 the street-numbering system in Sacramento applied only to streets south of I Street and thus excluded the study area. Residents and businesses in this area listed themselves in city directories simply by the nearest cross streets. In response to a rapidly increasing population, the Board of Supervisors voted to change this system in June 1860: I Street was established as the dividing line and all numerical streets were to be designated North or South with each 20-foot frontage being assigned a number. The alphabetical streets were also divided into segments and numbered consecutively. As can be seen from the city directories of the period, the new numbering system did not achieve acceptance and as years went by the system became increasingly unworkable and chaotic. In 1879 the city completely overhauled its numbering system (Pitti n.d.). Addresses changed through the years and did not consistently apply to a given parcel; thus identifying the addresses of specific project-area parcels involves research in numerous sources.

Previous Research

This study draws heavily on three previous works. In 1978-1979 a team of historical researchers under the leadership of Joseph McGowan compiled information on 16 blocks in downtown Sacramento from city directories and tax assessment records to produce a series of reports outlining the ownership and uses of these blocks from 1850 to 1920. Their study included the HI56 Block and provided a firm base from which to begin our research. Using the data assembled by McGowan, as well as census information and secondary sources, Peter Schulz prepared a research design for the city of Sacramento and for the 16 blocks studied specifically (Brienes, West & Schulz 1981c). The present work drew on both components of his study. In 1981 the ASC excavated portions of the block directly across the street from the present project area, the IJ56 Block (Praetzellis and Praetzellis 1982). That study recovered numerous discrete archaeological features associated with Chinese merchants who occupied the block in the 1850s and provides a source of direct comparison for the present work.

ARCHAEOLOGICAL FIELD METHODS

ARCHAEOLOGICAL FORMATION PROCESSES

It is essential to understand the processes by which cultural and natural strata are formed in order to interpret archaeological data and to evaluate their importance. When working in complex urban contexts, it is especially important to understand archaeological deposits in terms of the events that created them, not merely through the artifacts they contain. The excavation and recording system developed by Edward Harris (1974, 1977, 1979, 1988, 1989) aids in interpreting these events. Under this system, archaeologists must take note not only of solid features (such as walls) and negative features (such as pits), but also of contiguous interfaces that are created where stratigraphic units come into contact with one another. Thus, Harris recognizes layer interfaces, feature interfaces, and period interfaces—"a surface composed of a number of layer and feature interfaces" (1979:47). Leonard Wooley provides another definition of this concept: "the sum total of the ground surfaces which were ground levels in use at one and the same time" (1961:24).

Archaeological deposits reflect either periods of continuity or intervals of transition in site occupation or use. Continuous deposits are archaeological layers or living surfaces that become recognizable and distinct when buried by natural strata (i.e., flood silt, ash) or cultural strata (i.e., fill, roadway, building). Continuous deposits can form over periods of thousands of years, as on some California prehistoric sites, or in just a few years, as in the sequence of fire, flood, and fill found in Sacramento. It is a transition, natural or cultural, that results in a layer interface and the sealing of a continuous deposit into an archaeological layer. A process of continuous discard produces "sheet refuse" or gradually fills hollows and negative features. Because they accumulate gradually, these strata are highly susceptible to depositional and post-depositional disturbance. Archaeologists employ assemblages recovered from stratified, continuous archaeological layers to examine a variety of research problems concerning changes through time.

Archaeological strata formed during incidents of transition accumulate very quickly, often through a single depositional event in response to an abrupt change in the nature of site occupation and use. Activities such as the creation of a new feature interface (the removal of strata—hole digging) or the deposition of materials within a previously existing feature interface (the addition of strata—hole filling) often mark intervals of transition. Such deposits are more likely to retain their integrity than are continuous deposits and, therefore, possess greater visibility and focus in the archaeological record. In addition, deposits formed during intervals of transition may often be associated through historical research with specific households.

In urban areas, transitional feature interfaces and the strata that create them are often the result of changes on two levels: (1) those that result from the new use of a particular parcel due to the presence of a different commercial enterprise, occupant, or owner, or from modifications made by a continuing one; and (2) those produced by widespread responses to either natural disaster, such as floods or fires, or to municipal regulations governing sanitation practices, water delivery and storage, or street and lot improvements. More broadly, the latter transitions may be viewed as the movement by city government away from unplanned growth and development toward urban planning.

Sacramento's problem with floods has been of great significance to the preservation of the archaeological record. The solution was to truck in loads of fill and to raise the city streets from 4 to 16 feet. Property owners abandoned their lower floors or jacked up entire buildings. The result was the abandonment of the pre-1880s ground surface under the buildings themselves and in some of the courtyards and alleyways behind them. It was into this historic ground surface that the Sacramentans had dug their wells, privies, and drains—their feature interfaces. Over the years, the old ground surface had been covered by silt from floods, fill soil, and paving, creating layer interfaces. Beneath the late 19th-century fill an intact period interface is often found representing a most dynamic era in the history of Sacramento.

TESTING STRATEGY

The purpose of the test excavations was to determine the presence or absence of legally important property types. Potentially eligible properties were defined as deposits that contain domestic or commercial refuse, can be reliably associated with particular households or groups, and that possess substantial stratigraphic integrity. The areas to be examined were chosen using a modified version of the predictive criteria developed by Schulz (1979), as well as information about the historic-period uses of the project area. Known locations of contaminated soils were eliminated. The 1993 research design provided a focused historical outline, including historical summary, identified problems, archaeological potential, and research potential for each lot on the HI56 Block. The locations chosen for test trenching were those where it was believed high research potential coincided with high archaeological potential (survival).

Prior to beginning field work, a Health and Safety Plan, including discussion of Cal/OSHA trenching and shoring specifications and procedures for protection from soil contaminants and other dangerous conditions, was completed for the project.

The archaeological test excavation began on 14 November 1994 and continued until 25 November 1994. The elevation of the study area was approximately 8 feet below the surrounding streets; the area had been used as a parking lot in recent years. Since the

archaeological test areas specified in the project research design were situated in relation to the historic lot lines, the latter were marked on the ground by measuring from known points of historic continuity, such as the northwest corner of 6th and I streets. The accuracy of the lot lines was confirmed later by comparing the locations of wall junctions found archaeologically with those depicted on the Sanborn maps. A large area back from I and 5th and 6th streets was explored by backhoe. The object of this work was to locate features associated with the tenements at 6th and I and to identify features and stratigraphy associated with the early Chinese community that dwelt along the edge of China (a.k.a. Sutter) Lake in the 1850s.

The investigation areas were exposed by removing overlaying soils with a backhoe-loader equipped with a 36-inch trenching bucket. Historical research had shown that China Lake flooded several times in the 1850s and 1860s, depositing alluvium on the site. China Lake was filled in the early 20th century as part Southern Pacific Railroad Company’s efforts to reclaim what had become a noisome pond. Fill soils from both of these events were anticipated.

The project research design emphasized exposing archaeological features, layers, and layer interfaces that related to the occupation of the site, principally by Chinese immigrants, in the 1850s and 1860s. Thus, later fill layers were removed mechanically. As the early layer interface was exposed, technicians shovel-scraped the ground’s surface to remove loose soil, and then used trowels to define and clean features. A recording grid was laid over the entire site after it had been cleared, but provenience was recorded principally by street address. The following three areas were exposed:

	Addresses	Size (sq ft)
Area 1	812/826 6th St. & 525/527 I St.	6,300
Area 2	513/515 I St.	875
Area 3	507 I St.	1,900

Area 1

This exposure was designed to investigate deposits that accumulated within a “courtyard” created by the rear walls of several buildings that faced I and 6th streets. The yard was approximately 42 by 82 feet in size and was some 10 feet below the adjacent streets as a result of street raising in the 1850s and 1860s. To ensure that important deposits were not being overlooked, four trenches were excavated by backhoe within the building footprints themselves: Contexts 13, 14, 15, and 55. Trench 55 revealed demolition debris and flood alluvium, but not the discrete associations of artifacts or evidence of the 1855 fire that were specified in the project research design. The other trenches showed only disturbed deposits.

Area 2

An area measuring 31 feet east/west by 36 feet north/south was exposed. This area was designed on the basis of the locations of buildings shown on the 1895 Sanborn map and the Koch (1870) Bird’s-Eye View to include the backlots of 513 and 515 I Street. The western boundary of the excavation area was formed by Context 904, the remains of a brick wall. The stepped footings of this massive structure were bonded with

Portland cement, dating it to the beginning of the 20th century at the earliest. Both this footing and the entire excavation area were covered by a layer of brick and mortar demolition debris, Context 976.

Area 3

After the fire of 1855, Josiah Gallup, the property owner, constructed a 20 by 50 foot brick building on the parcel and rented it out to a Chinese company. Later, this building was expanded to the rear. The object of the investigation was to discover remains that were discarded in situ in the wake of the 1855 fire that might reflect the activities of the Chinese companies who occupied the parcel at that time. Accordingly, archaeological testing concentrated on the area within and to the rear (north) of Gallup's building.

As each feature/layer was discovered during the test investigation, it was exposed in plan by hand, photographed, and mapped in relation to a permanent datum in order that it could be relocated. The approximate depth of refuse-filled pits was gauged by probing with a steel rod. To assess the features' potential content and integrity, an appropriate portion of each was hand-excavated. In the case of a refuse-filled pit, for example, the feature was cross-sectioned and part of the top layer excavated. The proper level of effort for each feature was determined by the Field Director as the phenomena were investigated. Excavated soil was passed through 1/8- or 1/4-inch screen, as appropriate to document the presence of all classes of artifacts. It is noted that several archaeological investigations in Sacramento have recovered the tiny bones of birds and fish by the use of 1/8-inch mesh. Test excavations were limited to the minimum amount of work necessary to determine the features' crucial characteristics: structure and stratigraphic integrity, approximate date of deposition, and range and quantity of artifacts.

EVALUATION PROCEDURES AND CRITERIA

Archaeological properties discovered during testing were evaluated first for integrity. Integrity is an essential prerequisite for NRHP-eligibility. For most archaeological properties, integrity is a matter of their research potential. This dictum, however, begs the question of the property's physical condition. The research questions in the project research design have archaeological data requirements that include, in addition to portable artifacts, an adequate archaeological context in the form of archaeological strata, interfaces, and features. To possess research potential, these types of phenomena must have adequate physical integrity in the form of what James Deetz (1977) has called archaeological "focus." By focus Deetz refers to the level of clarity with which the archaeological remains can be seen to represent a particular phenomenon. Remains that represent a number of activities or other characteristics that cannot be separated out from one another are said to lack focus. Where focus is lacking as the result of disturbance, a property also lacks integrity.

The following questions were applied to each feature to assess its integrity:

1. Does the property have focus? That is, is it possible to interpret the behaviors that are represented by it?

2. Does the property have integrity of location and setting with respect to the arrangement of remains? That is, does the property retain a significant portion of its original contents and condition, and is it in its original location?

Properties that retained integrity were evaluated in relation to the NRHP criteria for evaluation (36 CFR 60.4). This involved assessing the property's historical associations and information potential under NRHP Criterion D. Archaeological test excavation was recommended for a large portion of the HI56 Block. Until this ground-truthing exercise was initiated, the overall quality of archaeological preservation was not known. If postdepositional disturbance had destroyed or damaged many of the remains, a high proportion of the surviving features may have been said to have research potential because of their rarity and, therefore, would have been potentially NRHP eligible. If preservation was good, as turned out to be the case, it was recognized that numerous archaeological features with some level of research potential would likely be uncovered.

In a world of unlimited funding for archaeological research, all of the features discovered under the latter scenario would be fully excavated, analyzed, and reported upon. Since archaeology is only one of many national priorities, however, it is important to ensure that while demonstrably useful data are recorded, redundancy is avoided. In the Advisory Council on Historic Preservation's *Treatment of Archeological Properties: A Handbook*, Tom King posed the rhetorical question "How much archaeology is enough?" Replying to his own question, King concluded that it is "enough to conclude the data recovery program approved by the consulting parties under 36 CFR Part 800" (ACHP 1990:9). In other words, "enough" is a mutable value that will vary depending on the circumstances. The Secretary of the Interior's *Guidelines for Archeological Documentation* also addresses this difficult issue:

Archeological investigations seldom are able to collect and record all possible data. It is essential to determine the point at which further data recovery and documentation fail to improve the usefulness of the archeological information being recovered. One purpose of the research design is to estimate those limits in advance and to suggest at what point information becomes duplicative. Investigation strategies should be selected based on these general principles, considering the following factors: (1) Specific data needs; (2) Time and funds available to secure the data; and (3) Relative cost efficiency of various strategies [48 CFR 44735].

According to the *Guidelines*, then, it falls to the writers of archaeological research designs to determine the point at which archaeological data becomes duplicative. Implicit in the concept of duplicative data is the notion that the archaeological research potential of a given deposit is not a fixed quality. Since research potential is measured in relation to particular research issues, one can conceive of a point at which the research value of a particular archaeological feature is reduced as data that relate to the same issue are seen to be available from other features. While it cannot necessarily be said that the excavation of similar features will lead to no new insights whatsoever into the research issue—except in relation to highly particularistic questions of unequivocal fact—it is fair to say that, at some point, the principle of diminishing returns will come into play.

This threshold is difficult to define. Mere numbers of features are not a reliable measurement of the quantity of data needed to make confident interpretations. It is a qualitative decision that can only be made by individuals experienced in the process of archaeological interpretation. After one has determined that the point of diminishing returns will be exceeded if all available properties of a certain type are excavated, the next problem to solve is how to choose between the available data sets. If historic-period archaeological features were homogeneous in the density and quality of their content, it would be reasonable to select a statistically valid sample on the basis of a random draw. This is emphatically not the case, however, for these phenomena vary markedly in their integrity, content, structure, historical associations, and overall research potential—all qualitative factors. “Cookbook” approaches, which apply hard and fast rules indiscriminately, result in a level of predictability of treatment, but often at the expense of important data and with the needless expenditure of time and money.

The approach outlined here involves employing a set of general principles that aided GSA and its consulting archaeologist in their decision about which archaeological remains were excavated and analyzed and which were not. The principles are not criteria, in that they cannot be applied directly as a “test.” Rather they are intended to guide the thoughtful consideration of a difficult qualitative issue. The principles will not substitute for the best judgment of a team of experienced professionals, but they may help to direct it. In this scheme, archaeological research potential is defined as the ability of a deposit to contribute to the questions identified in the research design.

1. Integrity. All else being equal, an archaeological phenomenon that retains good integrity will have more research potential than one whose integrity has been compromised.

2. Content. All else being equal, the research potential of a cache of archaeological materials from a domestic context will increase with the number of items and the variety of types present.

3. Historical associations. All else being equal, the research potential of an archaeological deposit that has reliable and precise historical associations will be higher than one whose associations are less certain.

4. Relative rarity. All else being equal, remains from a social, ethnic, or economic group that is poorly represented in the sample universe will be more important, because of their rarity, than remains that relate to a well-represented entity.

Of course, all remains encountered in the course of project activities have the characteristics of relative integrity, content, association, and rarity. The process of evaluation consisted of comparing individual properties on the basis of these characteristics. The evaluation, however, was not done mechanistically. It was recognized that a site with poor physical integrity might still have research potential if its relative rarity is high. Conversely, a feature might score quite high on content and associations, but it may be of a type that is already well documented and, therefore, may rate low in relative rarity.

At the completion of the testing phase on 24 November 1994, a letter report was submitted to GSA describing where testing was carried out and deviations made to the procedures set out in this plan (Praetzellis 1994). Of the 1,200-square-foot area exposed in the southeast portion of the block approximately 800 square feet contained an unbroken stratigraphic sequence of fire, demolition, filling, and sheet refuse disposal

from the early 1850s to the mid-20th century. These test investigations demonstrated the presence of remains that had the potential to address the research questions posed in the project research design. GSA and the OHP determined that the findings required the implementation of the data-recovery plan and work preceded immediately in order to accommodate the construction schedule and to prevent vandalism on the site should it have been left unattended.

DATA-RECOVERY EXCAVATION

A site record, or site context, sheet was used to record and cross reference all of the relevant excavation information. Each archaeological feature, or event, was assigned a context number, and the data relating to each observed archaeological context was entered onto the context sheet. This context sheet assists with both efficient ordering of archaeological data during field work and with the interpretation of the site during the post-field-work period. The system reduces errors by providing a series of cross-checks on each aspect of the site. It also simplifies the construction of a Harris matrix, or flow chart, that presents the observed totality of the archaeological relationships that are represented on the site (Harris 1989).

Several kinds of data were recorded for each property in order to realize its research potential: the deposit's structure (including stratification and features, areal extent and depth), and content (including the nature and quantity of artifacts). In addition, the phenomena were placed in their temporal and cultural/historical contexts. The field techniques described under Testing Strategy (above) were, in general, applicable to data recovery level work. Additional detail is provided below.

Where physical layers of deposition were not present, excavation was controlled by means of successive 4-inch (or thinner) arbitrary levels. The material was excavated using hand tools and, where appropriate, the soil passed through 1/4-inch screen. Due to the extremely wet conditions on site, the short field session, and the presence of small artifacts and faunal remains, large quantities of soil were bagged and processed back at the laboratory. Each unit of excavation was recorded on detailed forms on which the excavator and/or supervisor noted site structure and content. Artifacts were bagged according to provenience; the bags marked with the provenience designation, screen size, excavator's name, and the date. Some artifacts whose archaeological context was uncertain (i.e., unstratified finds) were collected for their potential value for public interpretation. Excavations were mapped in relation to permanent datum points. Excavations were recorded on plan and cross-section drawings drawn to scale, as well as by 35-mm black-and-white print and color slide photography.

LABORATORY METHODS

Portions of selected contexts were bagged in the field for laboratory processing. A total of 6 tons of soil, mainly from Contexts 954, 903, and 702, were screened through 1/4th, 1/8th, and 1/16th inch mesh. Materials from the 1/4th-inch sample were sorted for identifiable artifacts. Nondiagnostic items—such as unembossed bottle fragments and pieces of window panes—were counted, weighed, and discarded. The 1/8th-inch sample was sorted for beads and any unique artifacts; while a portion was

culled for fish bones. Portions of the 1/16th-inch sample were sorted for tiny beads and fish bones. The residues from these samples were curated together with the remainder of the collection for future research.

All materials recovered were cleaned, preliminarily sorted, and cataloged. Artifacts were given the Sonoma State University's Archaeological Collections Facility accession number 95-14. The remainder of the catalog number consists of the context layer from which the artifact was recovered, followed by a sequential number beginning with one for each lot within a context. Items were sorted into individual groups based on function and material, with some, such as nails, grouped by type.

Materials were divided into broad functional categories, modifying Stanley South's (1977) groupings into ones that are more appropriate for later period sites in the western United States. These categories include domestic, industrial, personal, and structural. The total number of whole and fragmentary pieces was determined, as well as a minimum number of items per feature. Whenever possible, manufacturer, manufacturing dates, and points of origin were noted.

Artifacts were sorted and cataloged. Ceramics were grouped by material. Then, these were further categorized based on form, function, decoration, and surface treatment. Glass items were divided into serving and tableware use, or bottles, or window pane. Tableware items were cataloged by color, function, and if possible manufacturing processes. Bottles were sorted by color; function was determined when possible based on the shape of base, finish, or embossment. Unless otherwise stated, all finishes are hand-applied. Other manufacturing techniques were described and dated if possible. Embossed bottle sherds were researched to determine information concerning manufacturer, contents, origin, and date ranges. Window glass was sorted by thickness and color, and only examples with corners were curated.

Artifacts produced from metal were classed and function determined. Cut nails were the most plentiful artifacts. Complete ones were measured by pennyweight, with a sample of each size curated; fragments were counted, minimum numbers established, and then discarded. The poor condition of tin cans allowed for descriptions of only some technological characteristics, mainly seams. Nondiagnostic body fragments were counted and discarded. Lester A. Ross, Historical Archaeological Consulting, aided in identifying selected metal items. A few copper alloy artifacts were soaked in citrus acid to enhance additional analysis.

Other items, such as game pieces, buttons, bone artifacts, and structural material fragments were sorted by function and then material. Manufacturing techniques were noted and, whenever possible, dated.

The collection is permanently housed at the Archaeological Collections Facility, Sonoma State University, Rohnert Park, California.

CHAPTER 4 FINDINGS

Although the archaeological record is an unedited account of the past and, therefore, a great source of unexpected information, it can also be full of pitfalls for the unwary. If a feature contains Chinese artifacts is it, therefore, to be considered to be the product of Chinese people? Conversely, if it contains predominantly non-Chinese materials is it the product of a Euroamerican household? In the case of the present site, which is relatively well documented in official records, these questions were not even considered. To avoid falling prey to circular reasoning, the historical associations of each feature were determined on the basis of each feature's archaeological structure, the presumed deposition date, and the occupants of the land on which it was located. We did not consider the relative "Chineseness" of an assemblage.

Figure 4 shows the site plan superimposed upon the 1895 Sanborn Map. Appendix B lists and describes context numbers by address.

AREA 1: 818 6TH STREET (FORMERLY 12N 6TH)

SITE STRUCTURE

The plan for 818 6th Street is included as Figure 5; the Harris Matrix for this area is Figure 6.

Context 502

This feature was a one-brick-wide building footing. The area enclosed by the feature was at least 10 feet by 8 feet 6 inches; its eastern side was not found. The southern wall was pierced by an opening, 3 feet wide. A 3-by-6-foot test trench excavated within the feature showed a few inches of clay soil and late 19th-century artifacts (Contexts 504, 510, 505). This feature may have been the lowest surviving layer of bricks from the sides of a brick-lined cellar.

Pits 500 and 501

These features were two intercutting pits. Pit 501, which was 4 feet 6 inches long by 2 feet 6 inches wide by 1 foot 6 inches deep, was partially wood-lined. It contained five layers of fill and had a *terminus post quem* (TPQ), based on a ceramic maker's mark, of 1866. This feature cut Pit 500, which was 5 feet long by 3 feet 3 inches wide and nearly 3 feet deep. This wood-lined feature contained seven layers of fill: Contexts 506, 507, 513, 514, 515, 517, and 519. Only Context 519 was made up of primary privy fill; the remainder represented flood and refuse disposal episodes (Figures 7 and 8). The feature had a TPQ, based on an embossed bottle, of 1876.

Three unusual, late-19th-century septic tanks were revealed while the area was being exposed by backhoe. Tank 67 was 8 feet in diameter and had been truncated. Tank 66 (at 820 6th) was 9 feet in diameter; its height was not determined. Tank 65 (at 822) was 5 feet in diameter by 6 feet high. All tanks were circular in cross section and domed, and were filled with clean yellow sand. Tank 65, whose relationship to surrounding strata was captured in cross section, had been set in a 2-foot-deep construction trench. Based on the general date of artifacts from layers adjacent to the construction trench, it appears that Tank 65 was constructed in the late 19th century—possibly the 1870s or 1880s.

HISTORICAL ASSOCIATIONS

Privy 500 was located at the rear of a building that was given various numbers on successive Sanborn maps—1814 in 1895 and 1818 in 1915. The addresses on this part of the block are inconsistent through the 1920s; thus more than one source is usually necessary to place a person on the parcel. The privy was located on the N1/2 of the S1/2 of the N1/2 of Lot 5 and, along with the remainder of Lot 5, was assessed to Jane P. Bonham in 1851 (McGowan et al. 1979). Jane Bonham, originally from Louisiana, was living in Sacramento as early as 1850, when she was recorded by the census taker in a household with four other women (U.S. Census 1850: Sacramento Sheet 181). In 1852 the land was valued at \$2,000 and the improvements at \$3,000 (Sacramento Assessment Rolls 1852). The following year, the property was assessed to R.A. Pearis, a Sacramento resident from 1849 to 1867 (McGowan et al. 1979). Dr. Pearis, who made a handsome sum in bridges and toll-roads, served on the Sacramento City Council and practiced medicine in town (*Sacramento Union* 21 February 1871:2[2]; Sacramento City Directories [SCD] 1853:67, 1854:72, 1856:104, 1858:58). Although the great fire of November 1852 reportedly stopped at I Street, R.A. Pearis suffered the loss of a “building etc.” worth \$4,000 (Askin 1978; *Daily Democratic State Journal* 15 November 1862:1[2-5]). The 1854 tax rolls again listed Jane Bonham as owner of Lot 5, now worth \$3,500 but with only \$100 in improvements, further evidence that the improvements on this lot were destroyed in 1852.

By 1860 Jane Bonham had divided Lot 5 and sold portions to Lorinda Washburn (a.k.a. Lucinda) and George P. Warner. Warner owned the lot under study, which now had a 20-foot street frontage, its value had dropped to \$220, his improvements, however, were valued at \$1,000. Warner worked as the steward of the Howard Benevolent Society, which was listed at 12 N 6th Street (the pre-1880 address for this lot) in the 1861 Sacramento City Directory. Warner resided two blocks away at 177 H, between 6th and 7th streets (SCD 1868, 1869). N.A.H. Ball founded the Howard Benevolent Association in December 1857 to aid the poor with food, supplies, medicine, rent, and funeral expenses. R.A. Pearis served as a director on its first board; these men collected funds from membership fees, voluntary donations, and contributions from the state legislature. They then dispersed these funds as needed to the poor and during times of crisis. The association officers and directors received no monetary compensation; only the steward was paid a very modest salary. In response to the small-pox epidemic in 1861-1862, the association spent over \$31,500 for relief (Wright 1880:174-175).

In March 1869 Warner sold the property to S.W. Blackwood (Deeds 51:256), who was assessed in that year for real estate valued at \$875, furniture valued at \$25, and a library worth \$40. Blackwood, a physician with an office on the corner of J and 6th streets, resided on the corner of N and 23rd (SCD 1870). Blackwood died in 1872 and his wife, Janette, inherited the property. In June 1875 Janette Blackwood sold the property to Lorinda Washburn (Deeds 77:389), who already owned the property just to the south. Washburn, who evidently never married, lived in Sacramento from as early as 1854, when she was listed as a dressmaker on 4th Street between J and K. Lorinda Washburn had already constructed \$100 worth of improvements on Jane Bonham's lot by 1856 and purchased the northwest corner of I and 6th by 1860. By 1864 she owned the entire S1/2 of Lot 5 and had built improvements along I Street. In 1866 Lorinda Washburn lived on 13th Street between F and G, but by 1869 her directory listing read "res I st bet 5th and 6th, bds 8 6th bet H and I" (SCD 1866, 1869), putting her in her tenements at I and 6th. She resided here through 1876, meanwhile purchasing additional real estate. By 1870, 60-year-old Lucinda Washburn, originally from Massachusetts, had acquired \$22,000 in real estate and \$8,000 in personal property (U.S. Census 1870, Ward 3, Sheet 303B).

Due to the problems in the street-numbering system, it is difficult to accurately place individual households, particularly north of I Street. The 1870 city directory lists Andrew Reuter, a laborer, at 12 6th Street, between H and I, which is probably Blackwood's lot. Laborers, a number of skilled workers for the railroads, a butcher, and a ship captain lived on 6th Street between I Street and the alley at this time. By 1880 Reuter had moved to 4th Street and gone into the cigar-manufacturing business. The other 1870s residents had also moved away, leaving a somewhat less affluent group of tenants. Working between a number of sources, research suggests that Mrs. Sarah Keely is the best candidate to be living in this residence. Mrs. Keely lived with her six children, who ranged in age from 21 to 10. The eldest two sons worked as laborers, the eldest daughter as a dressmaker. Her neighbors worked as harness makers, blacksmiths, and painters.

Miss Washburn died a very rich woman in December 1888; see 527 I Street for further details. Margaret Charlesworth bought this parcel for \$1,300 at a real-estate auction in 1890 (Washburn, Probate case 1071). By 1894 the residence had been converted to a Chinese laundry. The one-story plus basement building, which is probably the one shown on the lot on the 1869 bird's-eye view (Koch 1870), had a stable and two outbuildings in the rear yard (Figure 9). The business operated for many years as the Lee Sum Laundry. The Chinese laundry workers lived in the building. By 1910 Hong Fong Chew, 43 years old and California born, ran the business, where he lived with four other Chinese men, who had emigrated from China in the 1880s. Lorinda Washburn had lease agreements with Chinese laundrymen and may have negotiated the lease of this property before her death. In 1878 she had entered into a five-year lease with Quong Lee and Wing See for a dwelling to be used as a laundry at 70 K Street at a cost of \$55 a month. The lessees were allowed to use the roof as a place for drying clothes, but could not obstruct the skylight or drive nails or screws into the tin roof. They could partition off part of the first floor, presumably as a living quarter separate from the laundry, lease or underlet any portion of the premises for any legitimate business. At the expiration of the lease, the lessee could remove any improvements made by them, but had to return the

premises in good condition. They were also responsible to repair the front sidewalk and the tin roof (Leases A:456). After her death, the administrator of her estate criticized Miss Washburn for being loose in the collection of her rent and negligent in the management of her properties, so this agreement may have been atypical.

INTERPRETATION

PRIVY 500 (Contexts 506, 507 513, 514, 515, 517, 519)

TPQ: 1876

DEPOSITION DATE: Late 1870s to early 1880s

HISTORICAL ASSOCIATION: Euroamerican working-class household

These contexts include the primary fill of Pit 500, a privy, as well as material from layers of fill deposited later that represent alluviation.

Although no category of artifact can be said to dominate this collection, numerically faunal remains are the most common. Of the 211 identified artiodactyl bones of the major meat species, approximately 58% (n=123) are cow, 29% (n=62) are sheep, and 13% (n=26) are pig bones. Other meat species include jackrabbit, represented by four bones as well as nine bones of chicken, turkey, and wild game birds. Ten domestic cat bones are also present. Only 13% of the meat was from high-priced cuts, 68% from moderately priced cuts, and 19% from low-priced cuts (see Gust, Chapter 5). The household consumed large amounts of round steak and pot roast.

The ceramic tableware and food storage remains are almost exclusively English (Tables 1 and 2). Only two fragments of Chinese ceramic were found: one each of a porcelain bowl and a Chinese Brown Glazed Stoneware (CBGS) jar. Of the eight vessels represented by sherds of English ceramic, six bear molded designs, one is a transfer print, and one has a painted overglaze pattern.

The remainder of the assemblage consists of a wide variety of items that represent the everyday activities of a mid-19th-century household. Eating and drinking are represented in condiment bottles as well as tumblers and stemware. Work and recreation—both innocent and adult—is shown in alcohol bottles, clay smoking pipes, and fragments of flower pots, as well as a saucer from a toy tea set, and a darning egg.

The historic record indicates that most of the residents of this parcel at the time when the artifacts were deposited were Euroamericans. Significantly, there are only three Chinese artifacts in the assemblage: two ceramic sherds and a gaming piece. This combination of evidence suggests that the contents of this feature was derived from a Euroamerican household; the Chinese artifacts are taken as chance contributions, possibly sheet refuse.

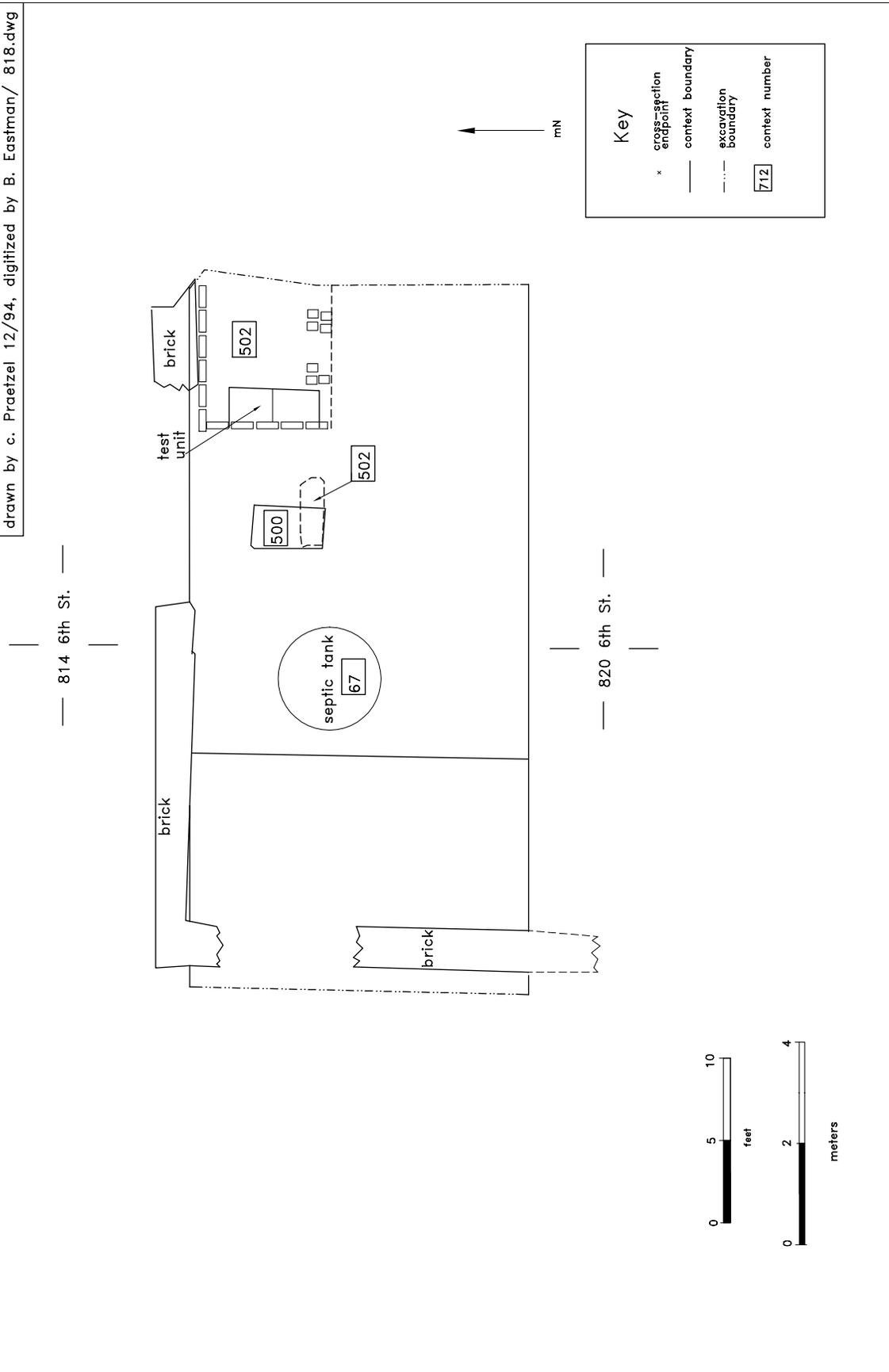
Septic tank 67, which would have replaced Privy 500, is identical to septic tanks 65 and 66 on Lorinda Washburn's neighboring 6th Street property. They were probably all constructed at the same time as part of a general improvement to her rental properties. As Miss Washburn purchased the property in June 1875, the septic tank would postdate this purchase. The TPQ for Privy 500 of 1876 supports this hypothesis (Table 3). In 1889 the Sacramento Health Officer notified the estate administrator that certain

cesspools connected with Lorinda Washburn's property were to be repaired immediately; they were subsequently emptied and repaired (Washburn, Probate 1071[1890]:3). These septic tanks obviously were already old and neglected.

Although Mrs. Neely and her children may not be directly responsible for the deposit within Privy 500, they are probably representative of the households who occupied the residence at that time.

Sacramento Federal Courthouse: HI56 Block
 818 6th Street: site plan
 Anthropological Studies Center, Sonoma State University
 drawn by c. Praetzel 12/94, digitized by B. Eastman/ 818.dwg

Figure 5. 818 6th Street, Area 1, site plan



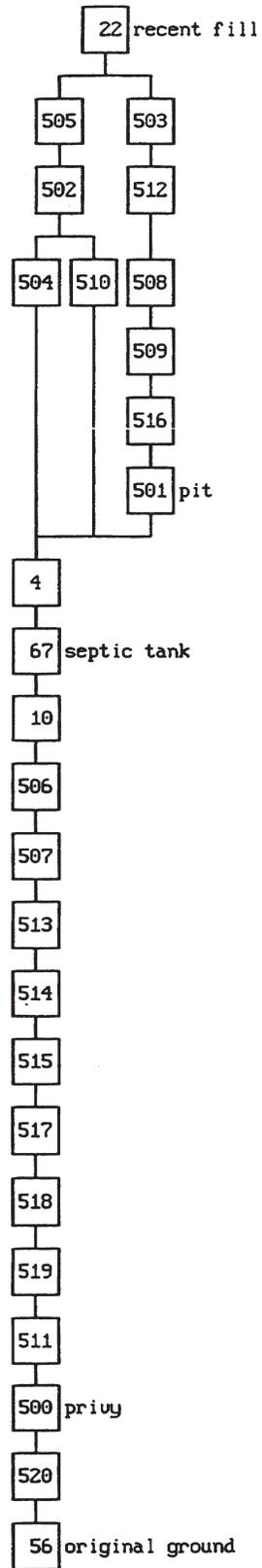


Figure 6. Harris Matrix, 818 6th Street

Sacramento Federal Courthouse: H156 Block
 818 6th Street: Privy 500, pit 501, cross-section
 Anthropological Studies Center, Sonoma State University
 drawn by M. Meyer 12/94, digitized by B. Eastman/ sac\pit501.dwg

Figure 7. Privy 500 cross-section

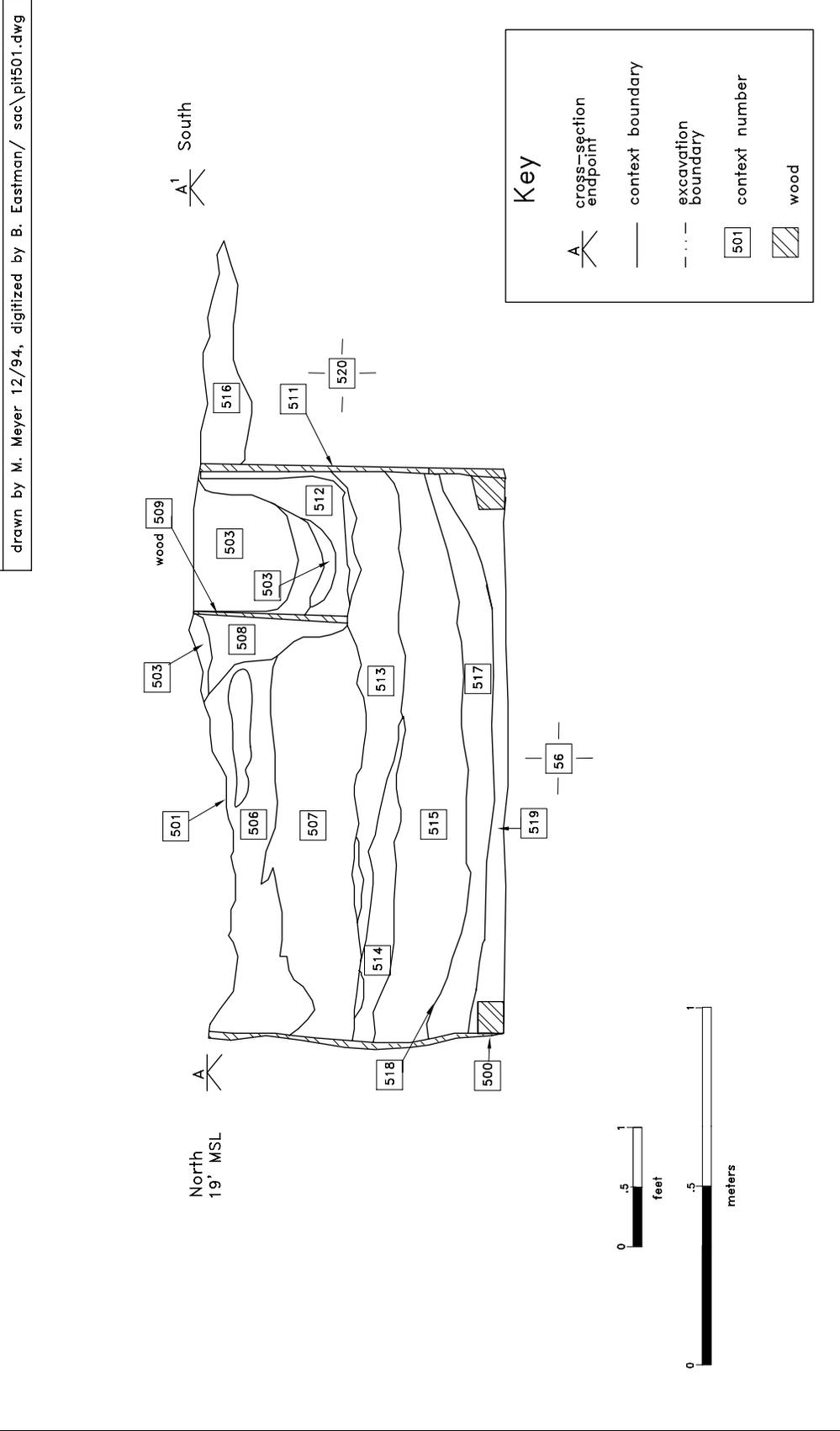




Figure 8. Privy 500, after excavation. This feature apparently went out of use in the mid-1870s when the property owner, Lucinda Washburn, installed new brick septic tanks to serve the tenants of her tenements. The renter families quickly filled this disused pit with domestic refuse. (Vertical scale = 2 feet; horizontal scale = 3 feet)



Figure 9. Koch's Bird's-Eye View of Sacramento in 1869 showing the developed portion of the HI56 Block. (From Koch 1870; courtesy of California State Library)

Table 1. Privy 500 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 506, 507, 513, 514, 515, 517, and 519

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Overglaze Polychrome	Hollow	1/ 1
<i>Subtotal</i>		<i>1/ 1</i>
<i>Non-Chinese Ceramics</i>		
Blue Transfer Print	Soup Plate	1/ 1
Molded	Ewer	1/ 1
Molded	Hollow	1/ 1
Molded "Sharon Arch"	Dish	2/ 2
Molded (Paneled)	Saucer	2/ 1
Painted Banding	Dish	1/ 1
Sided	Platter	4/ 1
<i>Subtotal</i>		<i>12/ 8</i>
Undecorated	Various	43/15
<i>Subtotal</i>		<i>43/15</i>
<i>Total</i>		<i>56/24</i>

Table 2. Artifact Summary for Privy 500, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 506, 507, 513, 514, 515, 517, and 519			
<i>Activities</i>			
Games	Game Piece	Glass Chu	1/1
Games	Teaset	Porcelain Saucer	1/1
Sewing	-	Glass Darning Egg	1/1
Tool	-	Rubberized Canvas Hose	47/1
Writing	-	Slate Pencil	2/1
Writing	-	Slate Tablet	4/1
Writing	Container	Glass Inkwell	3/1
<i>Activities Subtotal</i>			59(7.7%)/7(2.6 %)
<i>Domestic</i>			
-	-	OP Hollow	1/1
-	-	WIE Indefinite	1/1
Food	-	Egg Shell	21/1
Food	Container	Glass Condiment	1/1
Food	Container	Glass Worcestershire Sauce	1/1
Food Prep/Consumption	-	Porcelain Hollow	1/1
Food Prep/Consumption	-	WIE Hollow	2/1
Food Prep/Consumption	Serving	WIE Dish	7/5
Food Prep/Consumption	Serving	WIE Ewer	11/1
Food Prep/Consumption	Serving	WIE Platter	4/1
Food Prep/Consumption	Tableware	CP Hollow	1/1
Food Prep/Consumption	Tableware	OP Cup	1/1
Food Prep/Consumption	Tableware	WIE Cup	1/1
Food Prep/Consumption	Tableware	WIE Dish	1/1
Food Prep/Consumption	Tableware	WIE Flat	2/1
Food Prep/Consumption	Tableware	WIE Indefinite	2/2
Food Prep/Consumption	Tableware	WIE Saucer	14/3
Food Prep/Consumption	Tableware	WIE Soup Plate	7/3
Food Prep/Consumption	Tableware	Copper Alloy Fork	4/2
Food Prep/Consumption	Tableware	Copper Alloy Spoon	5/1
Food Prep/Consumption	Tableware	Glass Stemware	1/1
Food Prep/Consumption	Tableware	Glass Tumbler	6/2
Food Storage	Container	CS Recessed-Rim Jar	1/1
Furnishings	-	Common Pottery Flower Pot	6/3
Heating and Lighting	Lamp	Glass Chimney	4/1
Heating and Lighting	Lamp	Glass Globe/Lamp Cover	3/1
<i>Domestic Subtotal</i>			109(14.3%)/39(14.7%)
<i>Floral</i>			
Fruit	-	Fig	11/8
Pit	-	Seed Peach	16/13
<i>Floral Subtotal</i>			27(3.5%)/21(7.9 %)

Table 2. Artifact Summary for Privy 500, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 506, 507, 513, 514, 515, 517, and 519, continued			
<i>Indefinite Use</i>			
-	-	Stoneware Hollow	1/1
-	-	Glass Indefinite	2/1
-	-	Wood Handle	1/1
-	-	Copper Alloy Fitting	1/1
-	-	Copper Alloy Indefinite	5/2
-	-	Ferrous Strap	5/1
-	-	Leather Strap	1/1
-	-	White Metal Strap/Brace	1/1
-	Container	Glass Bottle	4/1
-	Container	Ferrous Can	48/2
<i>Indefinite Use Subtotal</i>			69(9.0%)/12(4.6 %)
<i>Personal</i>			
Accouterments	Jewelry	Glass Bead	2/2
Accouterments	Jewelry	Gold & Glass Earrings?	4/2
Clothing	-	Wool Cloth	1/1
Clothing	-	Copper Alloy Fastener	1/1
Clothing	Fastener	Copper Alloy Button	1/1
Clothing	Fastener	Ferrous Button	1/1
Clothing	Fastener	Porcelain Button	6/6
Clothing	Fastener	Shell Button	1/1
Grooming/Health	Container	Glass Bitters	4/2
Grooming/Health	Container	Glass Homeopathic Vial	11/2
Grooming/Health	Container	Glass Medicine	1/1
Grooming/Health	Toiletry	Hard Rubber Comb	1/1
Grooming/Health	Toiletry	Rubber Comb	1/1
Grooming/Health	Toiletry	Copper Alloy Indefinite	1/1
Grooming/Health	Toiletry	Bone Toothbrush	1/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	16/2
Indulgences-Alcohol	Container	Glass Wine/Champagne	6/2
Indulgences-Tobacco	-	Clay Pipe	12/7
Indulgences-Tobacco	Closure	Copper Alloy Lid	2/1
<i>Personal Subtotal</i>			73(9.6%)/36(13.6%)

Table 2. Artifact Summary for Privy 500, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 506, 507, 513, 514, 515, 517, and 519, continued			
<i>Structural</i>			
Hardware	-	Ferrous Brace?	1/1
Hardware	-	Ferrous Hinge	1/1
Hardware	-	Ferrous Mount/Hinge	1/1
Hardware	Fastener	Ferrous Nail-Cut	195/138
Hardware	Fastener	Ferrous Spike	1/1
Material	-	Clay Brick	1/1
Material	-	Concrete	1/1
Material	-	Common Pottery Floor Tile	1/1
Material	-	Mortar	1/1
Material	Window	Glass Pane	191/1
<i>Structural Subtotal</i>			394(51.6%)/147(55.5%)
<i>Undefined</i>			
-	-	Ferrous Undefined	26/1
-	-	Other Undefined	1/1
-	-	Unidentified	6/1
<i>Undefined Subtotal</i>			33(4.3%)/3(1.1 %)
Total Contexts 506, 507, 513, 514, 515, 517, and 519			764/265

Table 3. Date and Origin of Marked Ceramic and Glass Items for Privy 500, HI56 Block Sacramento

Contexts 506, 507, 513, 514, 515, 517, and 518

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
WIE Dish	Davenport	England	1861-1864	...IRONSTONE...	P & P:259	506-12	2
WIE Dish	Hope and Carter	England	1862-1880	...ER/BURSLEM	G:334	513-5	1
WIE Indefinite	Richard Alcock	England	1870-1882	...(ROYAL ARMS)...	G:206; P et al.:89	506-2	1
WIE Indefinite	Thomas Hughes	England	1860-1894	THOMAS HUGHES/BURSLEM	G:339; P et al.:44-45	507-2	1
WIE Indefinite	Unidentified			...O(E OR L)		507-28	1
WIE Platter	Jacob Furnival?	England	ca1845-1870	(ROYAL ARMS) ... STONE CHINA/J.F.	G: 262-3; P et al.:36	515-1	1
WIE Saucer	Powell & Bishop	England	1867-1878	IRONSTONE/CHINA/ POWELL & BISHOP	G:509; P et al .:69	513-3	1
WIE Saucer	E & C Challinor	England	1862-1891	(ROYAL ARMS)/ STONE CHINA/E & C CHALLINOR/ENGLAND	G:137-8; P et al .:18	513-4	1
Glass Bitters	Dr. Hostetter's	Pittsburgh	1858-1920	...HO...	F:36	515-12	1
Glass Medicine	Ayer's	Lowell	1847-1938	AYER'S	F:94	513-13	1
Glass Worcestershire Sauce	Lea & Perrins	Salem?	1876-1895	WORCESTERSHIRE SAUCE//LEA & PERRINS// J I D/S.	Z:269; L:n.p	513-14	1

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	WI	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

AREA 1: 525/527 I STREET (FORMERLY 153/155 I STREET)

SITE STRUCTURE

An east/west soil baulk was left standing during initial clearing in order to document the process of accumulation in the courtyard. Two trenches—Contexts 42 and 95—were excavated adjacent to the baulk to extend its depth. The cumulative cross section revealed over 7 feet of culturally deposited material. The upper 2 to 3 feet, Context 22, consisted of demolition debris from the early 1900s. Based on the general characteristics of the artifacts that these strata contained, the remaining 5 to 6 feet of material accumulated during the years 1850 to 1880. These strata represent episodes of habitation, fire, flood, demolition, and intentional filling. The bottom 2 feet of the deposit revealed complex stratigraphy that showed that the yard was used most intensively during the 1850s (Figures 10 and 11).

The area south of the baulk was subjected to more intensive investigation. Initially, the east, south, and west walls of the yard—Walls 1, 2, and 3, respectively—were exposed, and late 19th- and early 20th-century fill and demolition layers were removed. Trench 49 was excavated by backhoe in order to locate the stratum representing the 1855 fire. The latter, designated Context 5, was identified as the 1855 fire remains on the basis of its stratigraphic position, appearance, and artifacts: Context 5 was overlain by Wall 1, which was constructed in the late 1850s; it consisted of up to 3 inches of charcoal and ash in which were imbedded burned sherds of Chinese pottery, as well as English transfer-printed ceramics typical of the early 1850s. The intensity of the fire was clear from the burned surface that underlay Context 5. The layer varied from as much as 2 inches thick, as seen in the sides of Trench 49, to a mere black smear in the center of the courtyard (Figure 12). Context 5 was overlain by a layer of silty clay of varying thickness, Context 20, which appears to represent a major fill episode that occurred after 1876, based on the manufacturing date of a ceramic vessel.

Several features were uncovered by this stripping operation. Only four pits and one trench that were stratigraphically inferior to Context 20 are discussed here.

Pit 16

This feature was approximately 8 feet in diameter by as much as 5 feet deep (Figures 13 and 14). The upper portion of the feature was generally bowl shaped, but quite irregular; numerous small concavities had been excavated into the sides of the pit. In contrast, the lower portion of the feature had almost vertical sides, and was almost square. Although the original function of the pit is not evident from its contents, the remnant of wood lining suggests a well. Since the number of artifacts that it contained was relatively small in relation to the volume of soil, it seems unlikely that it was excavated as a refuse pit. The feature contained eight layers of fill that represent four principal depositional events that occurred between about 1855 and 1860.

Context 88, the earliest deposit in Pit 16, was up to 6 inches thick and consisted of a series of horizontal charcoal and ash lenses together with a quantity of burned ceramic sherds, and burned and melted bottle glass. The layer also contained a near whole, “Muleteer” pattern Davenport basin and other English ceramics typical of early

1850s assemblages in Sacramento. This deposit may have been created during the 1855 fire. The deposit has a TPQ of 1843 based on a ceramic maker's mark.

Context 86 consisted of a layer of mottled brown sandy clay, as much as 24 inches thick, with some domestic refuse. The lack of horizontal bedding and the mixed appearance of this soil unit suggests that this was not an alluvial deposit but rather redeposited upcast from a footing trench or similar excavation mixed with contemporary refuse.

Context 63, in contrast, was clearly an alluvium deposit. It consisted of a series of fine, superimposed bands of silt and clay, to a depth of as much as 30 inches. It is likely that the material was laid down during one of the seasonal rises of adjacent China Lake.

Context 60 was a thin layer of sandy clay containing a quantity of brick and building-stone fragments, as well as some domestic refuse. This and the layers above it appear to represent a series of ad hoc dumping episodes designed more to fill the hole and to dispose of soil than to dispose of refuse. Context 59 was a layer of brown sandy clay that contained a quantity of brick, mortar, and limestone fragments. The layer has a TPQ of 1843 based on a ceramic maker's mark. Context 18 was a thin layer of yellow sand. Context 17 was the top layer of fill in the pit. It consisted of a thin layer of green-gray clay with many charcoal inclusions.

Trench 87

This feature sloped into Pit 16 from the east. This feature contained a single layer of mottled sandy clay, Context 89, that integrated into the upper layers of pit fill. It is likely that for a time the pit and trench functioned as sump to drain surface water.

Pit 69

This small pit was adjacent to Pit 16. The feature was approximately 3 feet 6 inches in diameter by 2 feet 4 inches deep (Figures 15 and 16). The original function of the feature may have been to burn domestic refuse, since the sides and bottom of the pit were baked, and several artifacts showed the effects of burning. Only the bottom two of the pit's three layers of fill appear to have been the products of this activity, while the top layer may represent site leveling or alluviation. The feature had a TPQ of 1870.

The earliest fill in Pit 69 consisted of a layer of gray-brown sandy soil, up to 1 foot thick, that contained both an assortment of domestic artifacts and a quantity of charcoal; it was designated Context 81. The next layer, Context 80, also contained domestic refuse; many of these artifacts, however, had been burned and the matrix itself was largely composed of charcoal and charred wood. The layer was as much as 1 foot 6 inches in depth and had a TPQ of 1870 based on a marked mineral-water bottle.

The top layer of fill, Context 72, consisted of yellow-brown sandy soil with few artifacts and no charcoal; it was up to 1 foot in depth and had a TPQ of 1870 based on a marked mineral-water bottle. There is no evidence that this stratum is related to refuse burning. While several ceramic sherds crossmend between Contexts 80 and 81, only one sherd crossmends between the latter and Context 72. This is further evidence for a functional difference between the activities represented by these three layers.

Pit 79

This feature was approximately 3 feet by 2 feet 6 inches by 1 foot 6 inches deep. Part of its fill was removed by the excavation of a posthole, Context 73. The pit contained a single layer of yellow-brown sandy soil, Context 76, in which were found relatively few items of domestic refuse.

Pit 83

This feature was a maximum of 3 feet 6 inches in diameter by 1 foot 9 inches deep (Figure 17). The lower stratum, Context 85, was a gray-brown, organic, sandy soil with a relatively large quantity of charcoal. The matrix contained brick and mortar demolition debris and a large number of domestic artifacts, including an embossed bottle that provides the feature's TPQ of 1877. Context 84, a layer of yellow-brown soil, contained few artifacts but relatively more demolition debris.

HISTORICAL ASSOCIATIONS

Overpopulation, war, natural disaster, and generally unstable living conditions in southeastern China prompted the migration of large numbers of Chinese men to foreign lands during the 19th century. Most of these men originated from rural areas, where this turmoil had served to strengthen the traditional value of social obligations to family and clan among the resident peasant groups. As conditions made it increasingly difficult to support their families, men were forced to emigrate to more favorable environs. Barth describes their goal as follows:

Devotion to family motivated the peasant to abandon land and family, home and friends, in exchange for the uncertain fortunes and the certain privations that awaited him in Burma, Siam, Indochina, Malaya, on Sumatra, Java, Borneo, and the Philippines. There he planned to work until he was fifty or sixty when he would return to his native village, a wealthy and respected man, to enjoy the rest of his life venerated by the large family which he had kept intact with his earnings and savings during the long years overseas [1964:29].

Later, frontier California, with its lure of gold and demand for laborers, attracted a large portion of these migrants. According to Barth (1964:55), the bulk of these immigrants traveled by the "credit-ticket system" as "indentured servants" to the Chinese merchants at San Francisco or Hong Kong who had paid their expenses. Until they had paid their debts, the immigrants were under the control of these brokers. The strong Chinese kinship system supplied the extra-legal mechanism for such control, as this arrangement was not recognized by the United States courts. Through the adaptation of Chinese District Associations, the Chinese merchant-creditors maintained tight control over their debtors. District Associations traditionally supplied mutual aid and protection to their members; in California, they also supplied the means to control and oppress them (Barth 1964:78).

Chinatowns were both the symbol and the scene of that control. It was here that the Chinese sought aid, solace, news, and amusement. It was from here that they first ventured forth to employment and to here that the bones of the deceased sojourners were returned for shipment and reburial in China. Here, the Chinese spent their hard-earned

gold on food and drink, gambling and fraternizing. Here they received news from home and re-encountered old acquaintances. Here also, was the source of the District Associations' power; their agents ran the boardinghouses and stores where the Chinese gathered.

By 1854 the Chinese had firmly established themselves along I between 5th and 6th streets, the area being known as "Little China." Four of the five District Associations had boardinghouses here: Sam Yap (or Canton Company), Sze Yap, Yeung Wo, and Ning Yeong. This area was entirely destroyed on 13 July 1854 in the second most disastrous fire in Sacramento's history. The Chinese had constructed flimsy wood and canvas structures that quickly gave themselves up to the fire: "The Chinese are literally left homeless. They had taken almost exclusive possession of I Street, between 5th and 6th, which they had built up almost solid of materials calculated to make a flaming fire. Had they been made of cotton, they could not have burned with more feverousness. The fire seemed to lick them up as it passed" (*Sacramento Daily Union* 14 July 1854). As the fire started a number of blocks away, the Chinese had time to move some of their belongings to safety on an island in China Lake and elsewhere in town. Although the paper stated the fire must have ruined "most of the Chinese merchants," only one merchant, Tuck Lung on K Street between 4th and 5th, was mentioned specifically in the "List of Sufferers." The list did mention "about a dozen Chinese shanties" on the east side of 5th between I and J, and a "number of frames occupied by Chinese" on I Street between 5th and 6th (*Sacramento Daily Union* 14 July 1854).

A large portion of the Chinese section must have been rebuilt immediately. Between July and October of 1854, at least 11 business licenses were issued to Chinese concerns on I Street between 5th and 6th, including 5 markets, 1 merchandise store, 1 bar and boarding house, and 4 gaming houses (Sacramento Secretary of Common Council's Quarterly License Register 1854: 3rd quarter). Barber and Baker illustrated this new Chinese neighborhood before it burned again on 3 July 1855 (see Figure 3). This fire started on the second floor of the Sze Yap Company building on the north side of I Street near 5th. A small blaze, unchecked for the want of a full bucket of water, spread rapidly within the canvas structure and consumed the entire half-block within an hour. The fire confined to a triangular area bounded by the levee and 6th and I streets was occupied, with one exception, entirely by Chinese. Fire companies, initially hampered by lack of water as their truck parked at Madame Rosa's residence had already been consumed by flames, were aided by a shift in the wind, which blew the fire toward China Lake and prevented it from spreading to other parts of the town. The rapid spread of the fire prevented removal of goods and furniture, and losses from the fire and from water damage were reported to be from \$65,000 to \$100,000. The *Sacramento Daily Union* presented an abbreviated list of sufferers, reporting that the Sang Lee Company's \$10,000 loss was primarily opium, while the other merchants lost, among other goods, a total of 85 tons of rice (*Sacramento Daily Union* 4 July 1855).

The *Sacramento Democratic State Journal* (4 July 1855) published a more complete list (see page 19). From this list—which appears to tabulate losses in order moving west along I Street—and numerous other sources, we have tentatively identified the occupant of this parcel at the time of the 1855 fire.

“Ah Chick” applied for a water tap on I Street 51 feet north of I/5/6 north on 18 August 1854 for a “China House” (Tapper’s Book:7). This was probably Tong K. Achick, agent for the Yeung-wo Company in San Francisco. Tong was born in Tangjia village, Xiangshan, Guangdong Province, China, in 1827. He attended the Morrison Educational Society elementary school in Macao from 1839 until 1843, when he was sent to Shanghai as an interpreter for the first British consulate. After 18 months, he returned to the school, where he remained until its closure in 1849. In 1847 Tong was appointed interpreter for the Magistrate’s Court, a position he held until 1851, when he was replaced following charges that he associated with pirates. During this time, he was also baptized and became entangled in a controversy involving a prostitute. With letters of introduction, Tong and his uncle left for San Francisco in January 1852. Tong joined the Presbyterian church’s first Bible class for Chinese and the Yeung-wo Company elected him head, as Norman Assing’s successor (Ng 1995:1497-1498). In June 1852 Tong met with Governor Bigler to plead against the Foreign Miners’ Tax and other anti-Chinese agendas. He came bearing gifts—“shawls of rarest patterns, rolls of silk of the costliest texture, and some . . . seventy handkerchiefs of the choicest description.” Although Tong was wined and dined at the governor’s mansion, he had little success in forwarding the cause of Chinese miners (Barth 1964:146-149). When the legislature held hearings on the Foreign Miners’ Tax in 1853, Tong served as interpreter and presented the District Associations’ position. He, likewise, translated the law as passed into Chinese (Ng 1995:1498).

In the summer of 1854, members of the other four Chinese companies banded together to fight the Yeung-wo (Barth 1964:94). One such battle, involving some six hundred warriors “armed with tin hats, bamboo shields, tin and iron swords and cutlass a la pick handles” transpired one hot September day on I Street between 5th and 6th (*Daily Alta California* 10 September 1854). Although the press described it as a free-for-all, it was more likely part of the struggle between “Canton” and “Hong Kong” companies that raged in Chinese California that summer. Marysville representatives of the “Canton” faction sought the advantages of a favorable press and explained their differences to the local editor as follows:

The Hong Kongites [Yeung-wo] have prepared weapons and are anxious to get up a fight with the Cantonians, who, on the contrary prefer not going to war. The former are engaged in business avocations, while the latter frequent houses of bad repute, and after nightfall sallying out for purposes of provoking difficulty, and perhaps robbing or stealing [*Daily Alta California* 10 September 1854].

In January 1855 the Yeung-wo Company, which represented emigrants from the districts of Heung-shan, Tung-kun, and Tsang-shing, had its headquarters in San Francisco, a branch in Sacramento, and a house in Stockton, but “no regular agent employed” in the latter two cities. These houses were built for their members’ “accommodation in coming and going”; they were “mere lodging places.” Both the Yeung-wo and Sze Yap District Associations reported 11,000 members in 1854 (*San Francisco Herald Examiner* 4 September 1854). By 1855 the Yeung-wo Company was

numerically the largest of the five Chinese District Companies operating out of San Francisco, with 14,000 members (*The Oriental* 1[4]:1).¹

It is unknown if the Yeung-wo Company operated in Sacramento prior to the July 1854 fire, or if they merely took advantage of the succeeding chaos to move people and goods into town. On 3 August 1854, the “Young Wo Co.” in San Francisco hired five trams from Josiah Gallup (*Gallup v. Young Wo Co.* 1856), presumably to move goods and people to their new property in Sacramento, which was plumed by Ah Chick shortly thereafter. Gallup operated a business moving Chinese between San Francisco, Sacramento, and the mining districts. He also purchased supplies and served as a translator for representatives of various Chinese companies in Sacramento (for more on Gallup, see 507 I Street). Although an astute businessman, Gallup frequently made the mistake of providing goods and services on credit (Gallup, 13 March 1854). When the Yeung-wo Company lost its Sacramento property in the fire of July 1855, Gallup— anxious about his payment—negotiated an agreement with the “Young Wo Company House in San Francisco,” whereby the company would pay off their debt of \$870 in eight monthly installments beginning 11 September 1855. Tong K. Achick witnessed this agreement. The company made the first three payments, but then stopped. Josiah Gallup sued them in District Court for the remainder plus interest in July 1856 (*Gallup v. Young Wo. Co.* 1856).

The Yeung-wo Company apparently did not rebuild in Sacramento after the 1855 fire. They certainly would have paid their debt to Gallup had they remained in town. Josiah Gallup made many risky loans in Sacramento but, according to his probate, few, if any, of these were made to Chinese concerns. Perhaps the hostility of the other companies encouraged the Company to concentrate its resources elsewhere. In a possibly related matter, “Ah Chick of the Shanghai species was fined \$50 and costs, or in default of payment, sent aboard the Brig for thirty days, for stealing two bags of rice from Wing-Lee, on the evening of the late conflagration” (*Daily Democratic State Journal* 7 July 1855). If this is the same Ah Chick, it seems unlikely that an agent of an important Chinese Company would have stolen two bags of rice from his next-door neighbor. Given the animosity between the companies, however, he might have been framed, thus ruining his reputation and likelihood of negotiating further lease agreements with his landlady. Tong Achick, in fact, may have got off lightly. In 1862 when the Hop Wo Company separated from the Sze Yap Company, Sze Yap agent Ah Cow was assassinated in an I Street gambling hall (Praetzellis and Praetzellis 1982:29). Tong returned to China in the 1857 and joined the staff of the Chinese customs service. The Jardine, Matheson and Company in Tianjin made him their comprador in 1871, and he succeeded to a position as the company’s Shanghai comprador in 1873, a position he held until his death in 1897 (Ng 1995:1498). European establishments doing businesses in China employ a comprador to oversee their Chinese staff and to serve as intermediaries between the business and their Chinese customers.

¹ For consistency, spelling of Chinese District Company names are taken from William Speer’s *Oriental*. Speer spoke a Chinese dialect and was closely connected with the Chinese agents. These spellings were changed over the years, often by mistake.

Lucinda Washburn had constructed an improvement valued at \$100 on land owned by Jane Bonham in 1856 (Sacramento Assessment Rolls 1856), which is probably the double-wide, false-front building shown on the corner of I and 6th streets on the 1857 bird's-eye view (Baker 1857). By 1864 Lucinda Washburn owned the S1/2 of Lot 5 and by 1867 her improvements on that parcel were assessed at \$3,100 (Sacramento Assessment Rolls 1864-5, 1867-8). It is unclear when the property reached its arrangement as depicted on the 1895 Sanborn map. The tenements along 6th Street were definitely in place by 1869 and are clearly shown on the bird's-eye view published in 1870 (Figure 9). Although the bird's-eye view shows a continuous facade along Miss Washburn's I Street frontage, it is unclear what, if anything, is behind this facade.

The 1869 city directory lists Lorinda Washburn as "res I st bet 5th and 6th, bds 6th bet H and I," which might indicate that both tenements were in use by that time. The 1870 census lists her as a 60-year-old, single woman with \$22,000 worth of real estate and \$8,000 worth of personal property (U.S. Census 1870:3rd Ward, Sheet 303B:23). Lorinda Washburn left Kingston, Massachusetts, in the late 1840s and came to Sacramento via Ohio. Miss Washburn worked first as a dressmaker, but gradually purchased property in town. When she died at an "advanced age" in December 1888, her estate was worth over \$150,000, while her debts did not exceed \$10,000. Although she had written a will (a testamentary disposition), the courts refused to recognize it because of the informality of its execution. The administrator of the estate also roundly criticized the deceased for her loose course in the collection of rents—she allowed tenants to offset their rent with labor and other irregularities—and for the lack of maintenance on the properties: "roofs leaked, sewers were overflowing, sidewalks condemned, and the property generally in a sad state of dilapidation and demoralization" (Washburn, Probate 1071:[1890] 2; see also Privy 500).

In 1870 Miss Washburn's tenants included a variety of working men ranging from laborers to a ship's captain, as well as railroad machinists and engineers. Juliette Chase kept house at No. 2 6th Street, on the I Street corner, for three Central Pacific Railroad machinists, one or two of whom were probably her brothers. Noel Nason, also a machinist, lived at the same address with his wife (U.S. Census 1870: 3rd Ward Sheet 303b:26, Sheet 290:228). By 1880 Lorinda Washburn no longer lived at this property. W. Hicks, a bookkeeper, resided with his wife at 527 I Street, and a variety of households lived in the 6th Street tenements: two blacksmiths, one with a wife and four children; a brakeman, his wife and two children; a retired man and his two daughters; a harness maker, his wife and stepson; and a saloon keeper and his wife (U.S. Census 1880: Enumeration District 78:Sheet 33B).

In 1890 the estate auctioned off some of Lorinda Washburn's property. The first and second sales of the tenement properties were contested. Finally, N. Zemansky purchased the 525/527 building and P. Pendergast purchased the tenement fronting along 6th (Washburn, Probate 1071:[1892] 5). By 1890 the property operated as a lodging house. In 1900 a German widow ran the house with her divorced daughter (U.S. Census 1900:Enumeration District 77).

INTERPRETATION

Pit 16 yielded two distinct cultural deposits, described separately below.

PIT 16 (Early Deposit: Contexts 63, 86, 88)

TPQ: 1843

DEPOSITION DATE: ca. 1855

HISTORICAL ASSOCIATION: Yeung-wo Company

The number and proportions of artifact types from the earlier contexts are quite different from those in the later deposit: these contexts have relatively small quantities of ceramics and glass, but far more faunal remains.

English ceramic forms include a transfer-printed washbasin and soup plate, serving bowls, and plates, for a total of approximately 14 objects. Fragments of the same number of Chinese tableware and storage vessels were found: bowls of Celadon glaze and in the Double Happiness pattern, large and small storage vessels of CBGS, and several wide-mouthed jars (see Tables 4 and 5). Of the five alcohol containers, one is a CBGS bottle, one a Scottish stoneware bottle, and three are glass wine bottles.

The faunal remains are most revealing. Seventeen fragments representing two Chinese turtles were recovered. These contexts also contained bones from two Chinese fish species: the Golden Threadfin and Sea Bream (see Schulz, Chapter 5). Of the 94 bones of identified individual artiodactyls of the major meat species, approximately 40% represent beef, 20% sheep, and 40% pig. A very large number of bones of incidental, nonfood species are present: a total of 48 bones representing dog, cat, rat, gopher, and an unidentified rodent were found. Five bird species are represented among 98 bones. Of these, approximately 90% are domesticated species: either chicken or turkey and a single pheasant; the remainder are of wild species: ducks and geese (see Gust, Chapter 5).

These contexts are believed to have been created relatively slowly by an accumulation of domestic refuse. Several lines of evidence support this notion. First, the soils that make up the layers themselves are alluvial, quite organic, contain a large quantity of charcoal and ash, and in some cases are finely laminated. All this suggests that the feature lay open during periods of wet weather and flooding, and that the adjacent household was contributing kitchen and stove waste. The partial carcasses of so many vermin and non-food domestic species indicate that the pit was used for general refuse disposal. Marked artifacts were not helpful in dating this portion of Pit 16 (Table 6).

Pit 16 was located just behind the rear wall of the tenements shown on the 1895 Sanborn map at 525 and 527 I Street; it appears to have been under a raised back porch attached to the building. Located on the S1/2 of Lot 5, the feature shares its ownership history with Privy 500 through 1857, being connected with Jane Bonham and Dr. Pearis (see Privy 500). Unlike the Privy 500 parcel, however, this parcel is firmly associated with the Overseas Chinese occupation of I Street in the early 1850s.

Pit 16 was probably a wood-lined well used by the Chinese occupants whose property was destroyed by the fire of July 1854. When the Yeung-wo Company took over the parcel and arranged for piped water, the well was no longer needed. Located behind the company boarding house, the open hole gradually filled with refuse. The fire of July 1855 burned the feature and created additional refuse that found its way into the

depression. In summary, the contexts are taken to represent the domestic refuse of households that occupied the building at 525/527 I Street at about the time of the 1855 fire that razed much of the block.

PIT 16 (Late Deposit: Contexts 59, 60, 89)

TPQ: 1853

DEPOSITION DATE: ca. late 1850s

HISTORICAL ASSOCIATION: Chinese and Euroamerican tenants

The ceramics from this feature fall into two groups based on their respective origins: China and Europe (Tables 7, 8, and 9). The Chinese group contains a wide range of functional and decorative types used for food storage and preparation, and tableware. The Chinese tableware consists of bowls, plates, a spoon, a wine cup, and a tea pot—all of porcelain or porcelaineous stoneware. Traditional patterns dominate the collection: Double Happiness, Bamboo, Four Flowers, and Celadon glaze. Most of the food-storage and preparation vessels are of CBGS; forms include huge barrel jar, globular jar, spouted jar, straight-sided jar, wide-mouth jar, liquor bottle, an unusual rectangular jar (Figure 51), and an unglazed fragment of a stew pot. Approximately 29 Chinese serving and storage vessels are represented. Other distinctively Chinese artifacts include fragments of an opium pipe bowl and an opium can, a stoneware gaming piece (*chu*), and five *tong bao* (square coin).

Most of the remaining household ceramics that could be identified are likely to be English. Both transfer-printed and plain, white forms are represented. Tableware forms dominate this group: slop jar, bowl, saucer, plates, soup plates, and a mug. Two vessels, a basin and ewer, may have been used for personal hygiene. A plain porcelain vase, probably of French or German origin, is also present. Approximately 26 European vessels are represented. Most of the faunal remains from these contexts are of major meat species. Of the 58 total large identified artiodactyl bones, cow bones predominate (48%), followed by pig (28%), and sheep (24%). Seven chicken and duck bones are present in similar numbers (see Gust, Chapter 5).

It is likely that these contexts were deposited in quick succession, probably as the result of a household cleaning event. Although the collection contains a large number of fragments, especially ceramics, a relatively small number of objects are represented. This suggests that many of the artifacts were almost whole when they were discarded. The presence of structural debris and hardware indicates that the cleaning was precipitated by a building renovation. In summary, the material from these contexts is taken to represent domestic and structural refuse from the households that occupied the building at 525/527 I Street in the late 1850s. Historical research suggests that the tenants may have included both Chinese and Euroamericans.

From the 1857 bird's-eye view it appears that a frame structure was built on this lot by that year. The assessed improvements on the lot at this time were minimal and it is unknown who resided on the parcel. The feature may have functioned briefly as a sump before it was backfilled with available refuse prior to and during the construction of the Mrs. Washburn's tenements. Her brick buildings may have gone up following the flood of 1861-1862, which probably severely damaged the flimsy buildings shown on the bird's-eye view. These deposits would therefore represent the people who lived at this

address prior to the brick buildings. It is possible that the Chinese briefly reoccupied this parcel in the flood damaged building before being forced to move to less desirable locations following the decision to locate the Southern Pacific tracks through the rear of this block, thereby increasing its value for warehouses.

PIT 83 (Contexts 84, 85)

TPQ: 1877

DEPOSITION DATE: Late 1870s to early 1880s

HISTORICAL ASSOCIATION: Mrs. Washburn's working-class tenants

This assemblage is derived from layers of pit fill. It is taken to be the domestic refuse of the primarily Euroamerican residents of the tenements at 525/527 I Street in the late 1870s to the early to mid-1880s.

Food bone is the most numerous artifact type from this feature. A total of 233 mammal bones are represented, including 158 of identifiable artiodactyls of the major meat species. Of these, approximately 50% (n=78) are cattle, 30% (n=48) are sheep, and 20% (n=32) are pig bones. Elk and jackrabbit, two incidental meat species, are represented by five bones. Curiously, 20 domestic cat bones are also present (see Gust, Chapter 5).

Other food-related artifacts include fragments of several mineral-water and pickle bottles, and 12 alcohol bottles (Table 10). The mineral water came from Jacob Hoehn, who built his warehouse just down the street at 513/515 I Street in 1870. Fragments of approximately 23 British ceramic tableware items were found: soup plate, ewer, serving vessel lids, bowls, cup, saucer, and a dish. Of the 9 decorated items, all but one is mold decorated. Several different designs are represented including the popular Sharon Arch and Fig patterns. In contrast, only two sherds of Chinese tableware—one each of Celadon and Double Happiness bowls—and two CBGS forms are present (Table 11). This is taken to indicate that these objects are chance occurrences and were probably not deposited by the household(s) responsible for the remainder of the collection.

Ninety-seven glass beads of seven types were found in this feature. Of these, 85 are small embroidery beads, while the remainder, are plain decorative beads. All are types commonly used for decorating clothing and personal items (see Ross, Chapter 5).

Pit 83 was located in the courtyard formed by Mrs. Washburn's tenements along I and 6th streets and the neighboring Union Ice Company. In 1895 the yard had not been raised to street level and was 10 feet below grade. The pit is associated with Mrs. Washburn and her tenants. The demolition debris indicates that the feature may have gone out of use during the general renovation and clean up of the property that took place in the late 1870s after Mrs. Washburn purchased the residence at 818 6th Street and put in septic tanks. The feature's TPQ of 1877 supports this date (Table 12).

PIT 69 (Contexts 80, 81)

TPQ: 1870

DEPOSITION DATE: 1870s

HISTORICAL ASSOCIATION: Mrs. Washburn's working-class tenants

These contexts represent layers of fill in what appears to be a pit used for burning domestic refuse. The assemblage of bone from the major meat species consists of cow 52% (n=138), sheep 31% (n=82), and pig 17% (n=44) as well as three bones from an elk, antelope, and jackrabbit. Domestic poultry is well represented by 39 chicken and 5 turkey bones. Ten wild bird bones, mostly species of water fowl, are also present (see Gust, Chapter 5).

The table- and serving wares are almost exclusively English; parts of only one Chinese vessel, a Double Happiness bowl, were found (Table 13). Of the approximately 16 English-made earthenware vessels, 9 show molded decoration—including the well-known “Fig” pattern—and only one has a transfer print. The forms include plates, soup plates, bowls, cups, slop jars, dishes, and ewers.

The remainder of the collection consists of diverse array of domestic artifacts, including clothing buttons, shoes, and corset parts, as well as alcohol and mineral-water bottles (Table 14 and 15). Like Pit 83, Pit 16 was located in the courtyard of Mrs. Washburn's tenements. This collection is taken as being domestic refuse from the residents of these tenements.

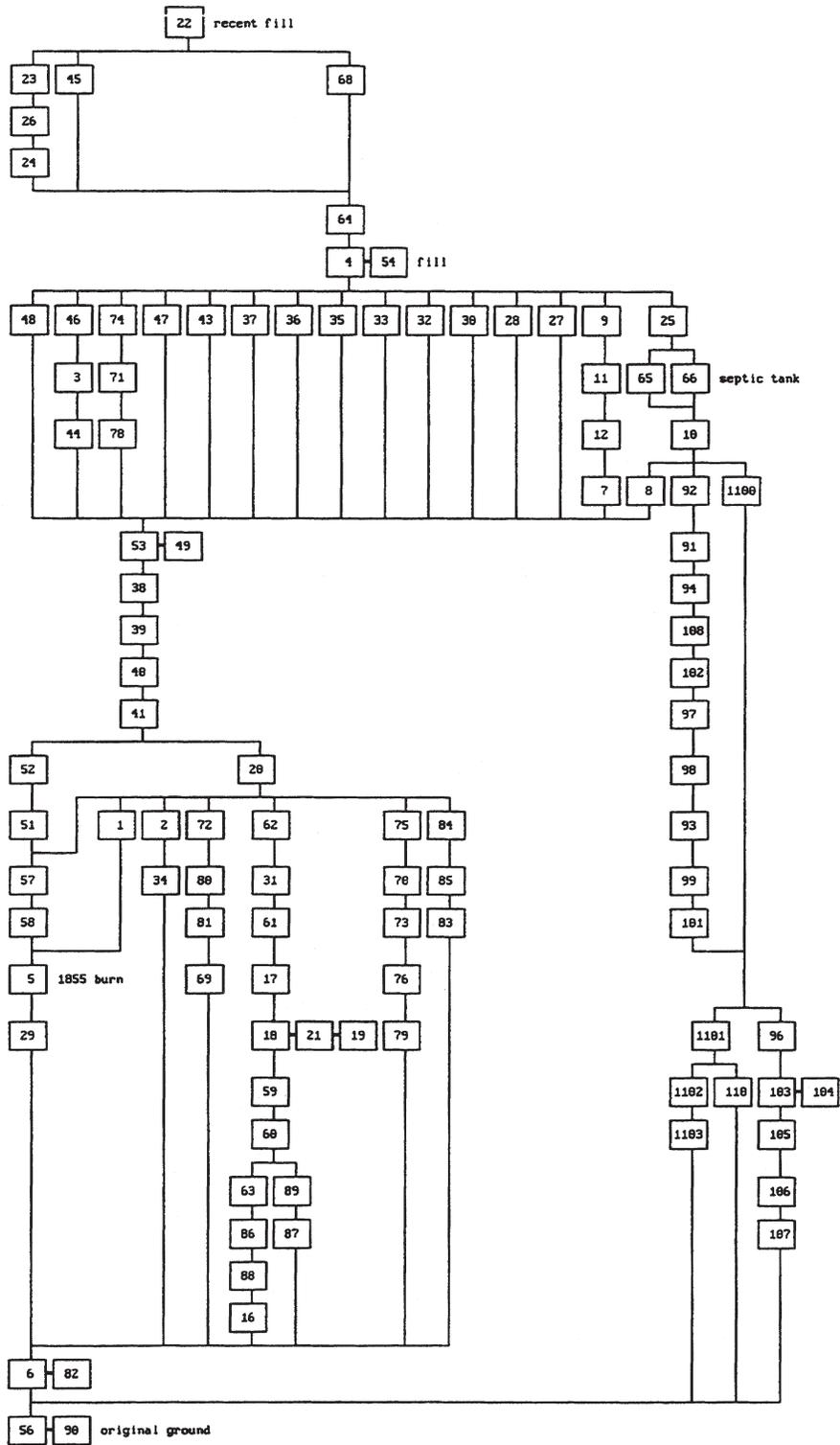


Figure 11. Harris Matrix, 525-527 I Street and 820-828 6th Street

Sacramento Federal Courthouse: H156 Block

525-527 I Street: cross-section

Anthropological Studies Center, Sonoma State University

drawn by G. Ziesing 12/94, digitized by B. Eastman/ sac\pit22A.dwg

Figure 12. Cross section through 525-527

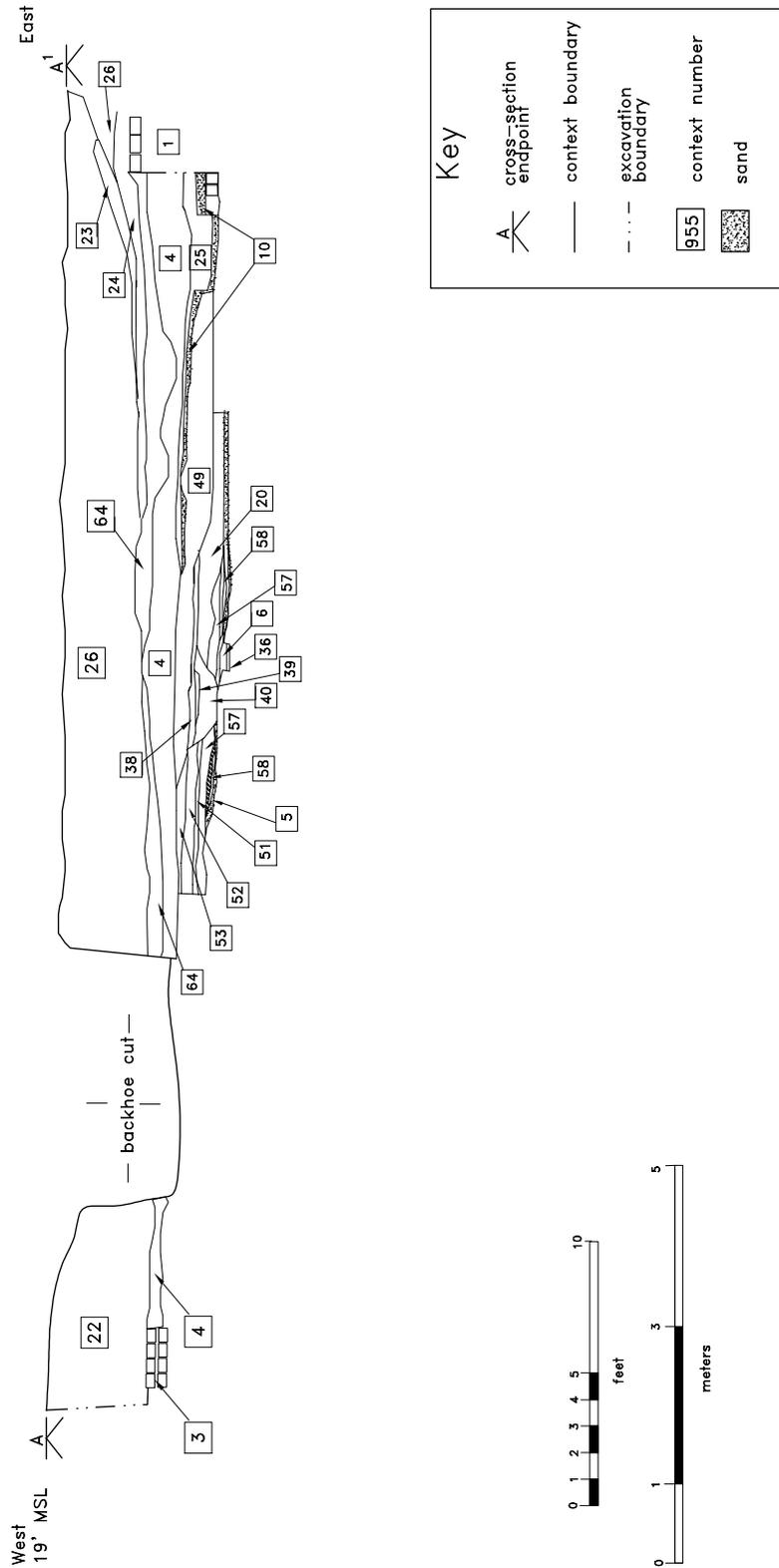
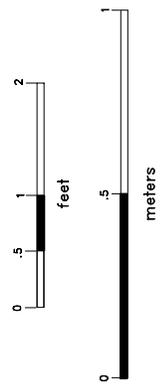
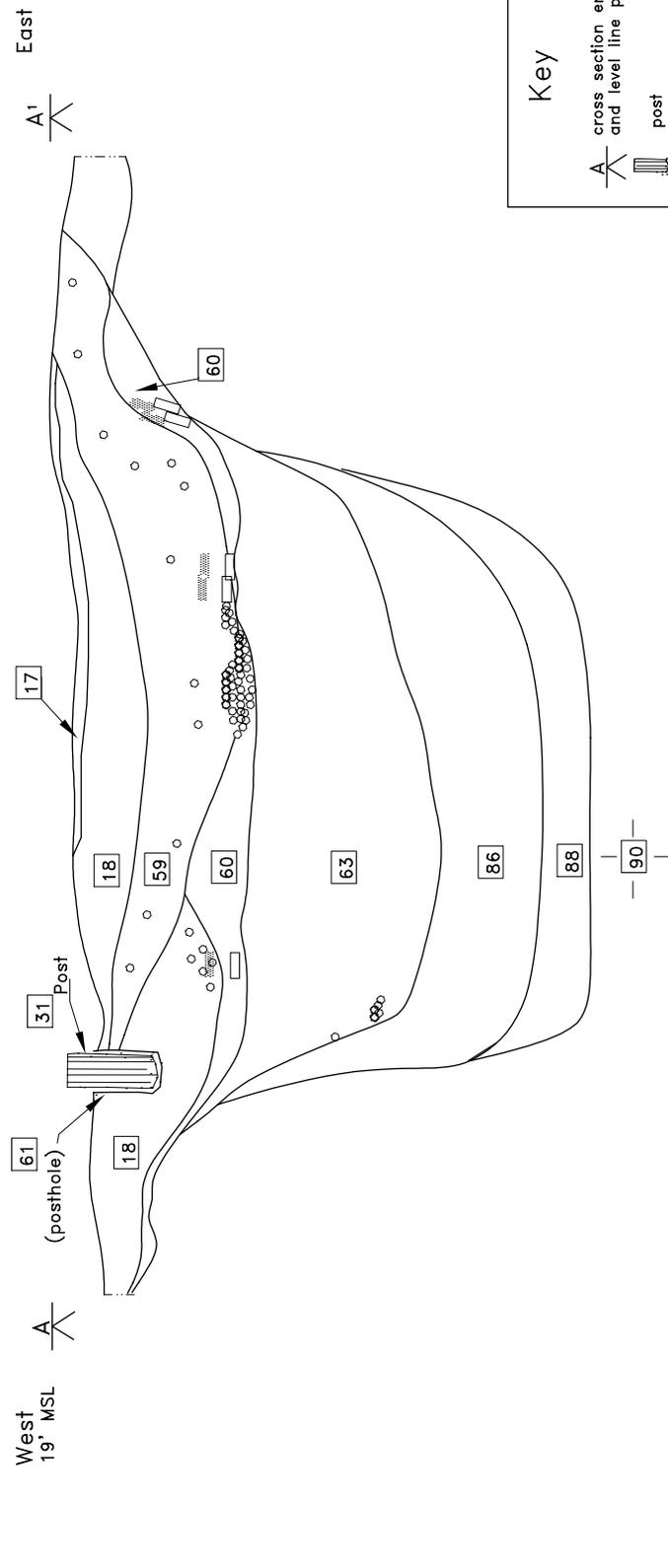


Figure 13. Pit 16 cross section



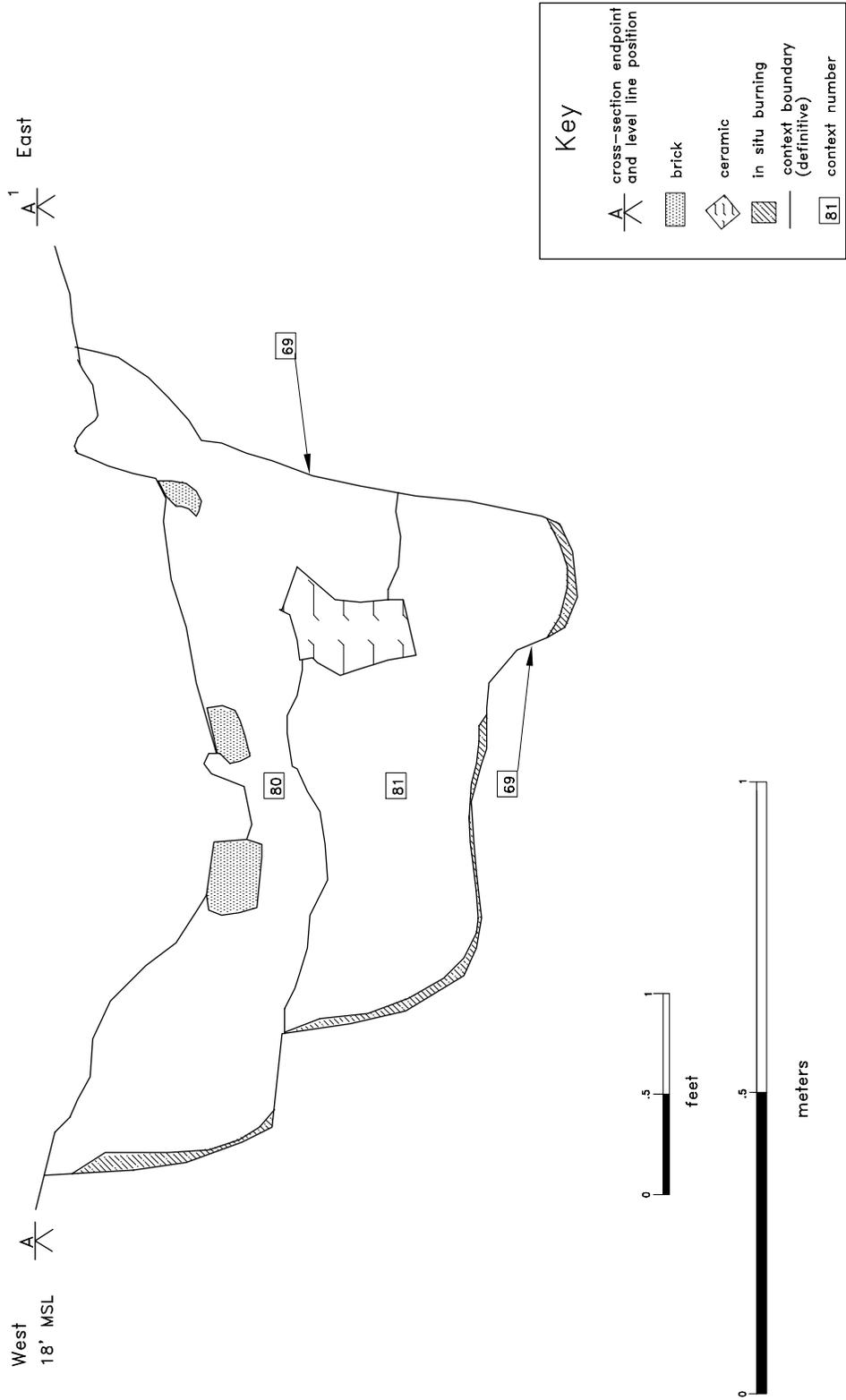
Key

- cross section endpoint and level line position
- post
- brick
- limestone
- excavation boundary
- context boundary (definitive)
- context number



Figure 14. Pit 16, cross-sectioned. Originally excavated as a well or cistern, this pit fell out of use in about 1855 and was filled with refuse, including a variety of Chinese fish and reptile remains. The feature's contents are believed to be associated with the Yeung-Wo Company, which occupied the parcel at that time. (Scale = 3 feet)

Figure 15. Pit 69 cross section



Sacramento Federal Courthouse: H156 Block
 525-527 I Street: Pit 83, cross section
 Anthropological Studies Center, Sonoma State University
 drawn by B. Mischke 12/94, digitized by B. Eastman/ sac\pit83.dwg

Figure 17. Pit 83 cross section

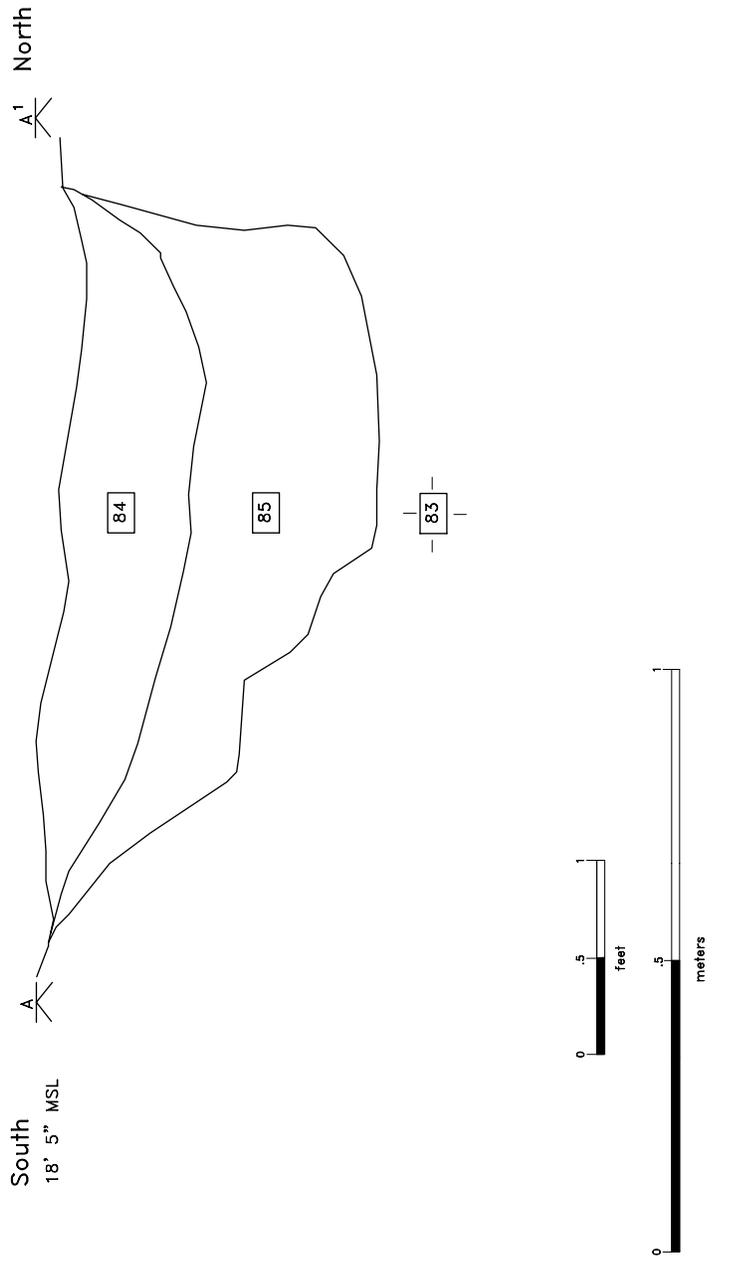


Table 4. Pit 16, Early Deposit, Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 88, 86, and 63

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Medium Bowl	1/1
Celadon	Medium Bowl	14/1
Double Happiness	Bowl	3/1
Double Happiness	Medium Bowl	8/1
Four Flowers	Bowl	6/2
Underglaze Blue	Medium Bowl	2/1
<i>Subtotal</i>		<i>34/7</i>
Undecorated	Various	6/1
<i>Subtotal</i>		<i>6/1</i>
<i>Non-Chinese Ceramics</i>		
Annular	Bowl	1/1
Blue Transfer Print	Lid	1/1
Blue Transfer Print	Soup Plate	3/1
Blue Transfer Print "Muleteer"	Basin	21/1
Blue Transfer Print "Waverley"	Soup Plate	32/1
Blue Transfer Print "Willow"	Plate	1/1
Blue Transfer Print (Floral)	Plate	4/1
Blue Transfer Print (Scenic)	Soup Plate	6/2
Flow Blue (Scenic)	Plate	1/1
Gaudy	Soup Plate	1/1
Molded (Paneled)	Soup Plate	3/1
Sided; Molded (Paneled)	Soup Plate	17/1
<i>Subtotal</i>		<i>91/14</i>
Undecorated	Various	2/ 1
<i>Subtotal</i>		<i>2/ 1</i>
<i>Total</i>		<i>133/23</i>

Table 5. Artifact Summary for Pit 16, Early Deposit, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 63, 86, and 88			
<i>Activities</i>			
Games	Game Piece	Glass Chu	1/1
Games	Game Piece	Porcelain Marble	1/1
Tool	-	Ferrous Chisel	1/1
Writing	-	Slate Pencil	1/1
Writing	-	Slate Tablet	1/1
Writing	Container	Glass Inkwell	1/1
<i>Activities Subtotal</i>			6(1.6%)/6(8.5 %)
<i>Domestic</i>			
-	-	WIE Basin	21/1
Food	Container	Glass Olive Oil	2/1
Food	Container	Glass Pickle	19/2
Food	Container	Glass Soda/Mineral Water	1/1
Food Prep/Consumption	Closure	WIE Lid	1/1
Food Prep/Consumption	Serving	CP Bowl	3/1
Food Prep/Consumption	Serving	WIE Bowl	1/1
Food Prep/Consumption	Tableware	Porcelain Hollow	2/1
Food Prep/Consumption	Tableware	CP Bowl	6/2
Food Prep/Consumption	Tableware	CP Medium Bowl	27/4
Food Prep/Consumption	Tableware	CP Plate	4/1
Food Prep/Consumption	Tableware	WIE Plate	6/1
Food Prep/Consumption	Tableware	WIE Soup Plate	62/2
Food Storage	-	CS Indefinite	3/1
Food Storage	Closure	CGGS Lid	2/2
Food Storage	Container	CS Indefinite	1/1
Food Storage	Container	CBGS Large Storage Vessel	3/2
Food Storage	Container	CBGS Small Storage Vessel	8/2
Food Storage	Container	CBGS Wide Mouth Jar	41/4
<i>Domestic Subtotal</i>			213(57.1%)/31(43.7 %)
<i>Faunal</i>			
Shell	-	Shell Oyster	17/2
<i>Faunal Subtotal</i>			17(4.6%)/2(2.8 %)
<i>Floral</i>			
Seed	-	Seed Chinese Olive	2/1
<i>Floral Subtotal</i>			2(.5%)/1(1.4 %)
<i>Indefinite Use</i>			
-	-	Ferrous Indefinite	1/1
-	-	Ferrous Rod	1/1
-	-	Ferrous Strap	7/1
-	Container	Glass Bottle	5/1
<i>Indefinite Use Subtotal</i>			14(3.8%)/4(5.6 %)

Table 5. Artifact Summary for Pit 16, Early Deposit, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 63, 86, and 88, continued			
<i>Personal</i>			
Clothing	Fastener	Porcelain Button	4/4
Footwear	-	Leather Boot/Shoe	1/1
Footwear	-	Metal Boot/Shoe	1/1
Indulgences-Alcohol	Container	Stoneware Ale/Beer	4/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	3/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	75/3
<i>Personal Subtotal</i>			88(23.6%)/11(15.5%)
<i>Structural</i>			
-	-	Ferrous Strap	4/1
Hardware	-	Ferrous Mount	1/1
Hardware	Fastener	Ferrous Nail-Cut	10/8
Hardware	Fastener	Ferrous Tack	1/1
Material	-	Clay Brick	1/1
Material	-	Concrete	1/1
<i>Structural Subtotal</i>			18(4.8%)/13(18.3%)
<i>Undefined</i>			
-	-	Ferrous Undefined	6/1
-	-	Lead Undefined	7/1
-	-	White Metal Undefined	2/1
<i>Undefined Subtotal</i>			15(4.0%)/3(4.2 %)
Total Contexts 63, 86, and 88			373/71

Table 6. Date and Origin of Marked Ceramic and Glass Items for Pit 16, Early Deposit, HI56 Block Sacramento

Contexts 88, 86, and 63

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
CP Med Bowl		China		Undefined		86-1	1
CP Plate		China		Undefined		63-4	1
WIE Soup Plate	TJ & J Mayer	England	1843-1855		G:424; P et al.:52	88-3	1
WIE Soup Plate	Davenport	England	1830-1887	...AVERLEY DAVENPORT	G:189-91	88-11	1
Glass Alcohol Bottle	Unidentified		1818-	MG/1818		63-24	1
Glass Alcohol Bottle	Unidentified			...[PAT]ENT[ED]...		86-12	1
<i>Reference Abbreviations:</i>							
C	Cushion 1976		M & M	Markota and Markota 1994	S	Schulz et al. 1980	
F	Fike 1987		P	Praetzellis et al. 1980	T	Thorn 1947	
G	Godden 1991		P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980	
Gn	Godden 1980		P et al.	Praetzellis et al. 1983	Wl	Williams 1978	
L	Lunn 1981				Z	Zumwalt 1980	

Table 7. Pit 16, Late Deposit Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 59, 60, and 89

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Bowl	2/ 1
Bamboo	Hollow	10/ 1
Bamboo	Medium Bowl	12/ 1
Celadon	Cup	5/ 1
Celadon	Medium Bowl	41/ 2
Celadon	Plate	6/ 1
Double Happiness	Medium Bowl	169/ 4
Four Flowers	Medium Bowl	2/ 1
Four Flowers	Plate	2/ 1
Four Flowers?	Spoon	1/ 1
Overglaze Polychrome	Hollow	16/ 1
Overglaze Polychrome	Plate/Dish	2/ 1
Simple Flower	Sauce Pot	2/ 1
<i>Subtotal</i>		<i>270/17</i>
Undecorated	Various	38/ 2
<i>Subtotal</i>		<i>38/ 2</i>
<i>Non-Chinese Ceramics</i>		
Annular	Bowl	1/ 1
Blue Shell Edge	Soup Plate	4/ 1
Blue Transfer Print (Geometric)	Hollow	3/ 1
Blue Transfer Print (Geometric)	Lid	1/ 1
Blue Transfer Print (Scenic); Sided	Soup Plate	7/ 1
Blue Transfer Print	Dish/Saucer	3/ 1
Blue Transfer Print "Floral"	Plate	3/ 1
Blue Transfer Print "Waverley"	Plate	1/ 1
Blue Transfer Print "Willow"	Mug	3/ 1
Blue Transfer Print "Willow"	Plate	17/ 2
Blue Transfer Print (Diaper)	Soup Plate	2/ 1
Blue Transfer Print (Scenic)	Hollow	5/ 1
Blue Transfer Print (Scenic)	Plate	6/ 1
Blue Transfer Print (Scenic)	Soup Plate	4/ 1
Flow Blue	Flat	2/ 1
Flow Blue (Geometric)	Hollow	1/ 1
Flow Blue (Scenic)	Plate	4/ 1
Gaudy	Soup Plate	13/ 1
Molded	Basin	3/ 1
Molded	Cup/Slop Bowl	2/ 1
Molded	Hollow	5/ 1
Molded "Wheat"	Vase	1/ 1
Molded (Paneled)	Soup Plate	15/ 2
Sided	Teapot	29/ 1
<i>Subtotal</i>		<i>135/26</i>
Undecorated	Various	92/ 8
<i>Subtotal</i>		<i>92/ 8</i>
<i>Total</i>		<i>535/53</i>

Table 8. Artifact Summary for Pit 16, Late Deposit, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 59, 60, and 89			
<i>Activities</i>			
Collecting	-	Quartzite Sample	1/1
Commerce	Coin	Copper Alloy Tongbao	6/5
Games	Game Piece	Stoneware Chu	2/2
Games	Teaset	Porcelain Plate	1/1
Writing	-	Lead Pencil	1/1
Writing	-	Slate Pencil	2/2
<i>Activities Subtotal</i>			13(1.5%)/12(8.5 %)
<i>Domestic</i>			
-	-	WIE Basin	3/1
Food	Container	Glass Olive Oil	4/1
Food	Container	Glass Soda/Mineral Water	14/3
Food Prep/Consumption	-	CP Hollow	11/2
Food Prep/Consumption	-	OP Hollow	1/1
Food Prep/Consumption	-	WIE Cup/Slop Bowl	2/1
Food Prep/Consumption	-	WIE Hollow	15/1
Food Prep/Consumption	-	WIE Indefinite	39/1
Food Prep/Consumption	Closure	CGGS Lid	1/1
Food Prep/Consumption	Closure	WIE Lid	1/1
Food Prep/Consumption	Container	CS Stewpot	1/1
Food Prep/Consumption	Serving	Porcelain Teapot	29/1
Food Prep/Consumption	Serving	Porcelain Vase	1/1
Food Prep/Consumption	Serving	CP Sauce Pot	2/1
Food Prep/Consumption	Serving	CP Bowl	11/1
Food Prep/Consumption	Serving	WIE Bowl	1/1
Food Prep/Consumption	Serving	Earthenware Ewer	1/1
Food Prep/Consumption	Tableware	Porcelain Cup	1/1
Food Prep/Consumption	Tableware	CP Cup	5/1
Food Prep/Consumption	Tableware	CP Hollow	18/1
Food Prep/Consumption	Tableware	CP Medium Bowl	249/8
Food Prep/Consumption	Tableware	CP Plate	8/2
Food Prep/Consumption	Tableware	CP Plate/Dish	2/1
Food Prep/Consumption	Tableware	CP Spoon	1/1
Food Prep/Consumption	Tableware	CP Tiny Cup	1/1
Food Prep/Consumption	Tableware	WIE Dish/Saucer	3/1
Food Prep/Consumption	Tableware	WIE Flat	32/6
Food Prep/Consumption	Tableware	WIE Hollow	14/2
Food Prep/Consumption	Tableware	WIE Mug	3/1
Food Prep/Consumption	Tableware	WIE Plate	32/6
Food Prep/Consumption	Tableware	WIE Soup Plate	49/7
Food Storage	Closure	CS/CGGS Lid	2/1
Food Storage	Container	CBGS Barrel Jar	1/1
Food Storage	Container	CBGS Globular Jar	1/1
Food Storage	Container	CBGS Large Storage Vessel	7/1
Food Storage	Container	CBGS Rectangular Vessel	7/2
Food Storage	Container	CBGS Small Storage Vessel	26/1
Food Storage	Container	CBGS Spouted Jar	3/1
Food Storage	Container	CBGS Straight-Sided Jar	2/1
Food Storage	Container	CBGS Wide Mouth Jar	6/1

Table 8. Artifact Summary for Pit 16, Late Deposit, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 59, 60, and 89, continued			
Furnishings	-	Glass Mirror	4/1
Heating and Lighting	-	Slag Fuel	1/1
Heating and Lighting	Lamp	Glass Chimney	7/2
Heating and Lighting	Lamp	Glass Globe/Lamp Cover	1/1
<i>Domestic Subtotal</i>			623(71.1%)/74(52.1%)
<i>Faunal</i>			
Shell	-	Shell Oyster	8/4
<i>Faunal Subtotal</i>			8(.9%)/4(2.8%)
<i>Indefinite Use</i>			
-	-	WIE Hollow	18/1
-	-	Copper Alloy Indefinite	13/1
-	-	Glass Indefinite	1/1
-	-	Marble Indefinite	1/1
-	-	Porcelain Indefinite	2/1
-	-	Ferrous Ring	1/1
-	-	Ferrous Strap	9/1
-	-	Lead Tube	2/1
-	-	Ferrous Wire	9/1
-	Container	Porcelain Bottle	1/1
-	Container	Glass Bottle	28/1
-	Container	Ferrous Can	2/1
<i>Indefinite Use Subtotal</i>			87(9.9%)/12(8.5%)
<i>Personal</i>			
Clothing	Fastener	Porcelain Button	3/3
Clothing	Fastener	Shell Button	3/3
Grooming/Health	Container	WIE Ointment	1/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	2/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	83/3
Indulgences-Opium	-	Earthenware Pipe	2/2
Indulgences-Opium	Container	Copper-Alloy Opium	3/1
<i>Personal Subtotal</i>			97(11.1%)/14(9.9%)
<i>Structural</i>			
Hardware	-	Ceramic Door Knob	3/1
Hardware	Fastener	Ferrous Nail-Cut	24/21
Material	-	Clay Brick	1/1
Material	-	Concrete	1/1
Material	Window	Glass Pane	7/1
<i>Structural Subtotal</i>			36(4.1%)/25(17.5%)
<i>Undefined</i>			
-	-	Unidentified	12/1
<i>Undefined Subtotal</i>			12(1.4%)/1(.7%)
Total Contexts 59, 60, and 89			876/142

Table 9. Date and Origin of Marked Ceramic and Glass Items for Pit 16, Late Deposit, HI56 Block Sacramento

Contexts 89, 60, and 59

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
CP Hollow		China		XIENG ZHEN		59-7	1
CP Hollow	Cheng He	China		CHENG HE		60-4	1
CP Medium Bowl	Yong Li	China		YONG LI		59-1	3
CP Medium Bowl		China		XIENG [Illegible]		59-4	1
CP Medium Bowl		China		Undefined		59-5	2
CP Plate		China		Undefined		60-6	1
CP Plate/Dish		China		Sign of Longevity		60-9	1
WIE Hollow	TJ & J Mayer	England	1843-1855	T.J. & J MAYER'S/IMPROVED IRO...	G:424; P et al.:52	59-41	1
WIE Hollow	TJ & J Mayer	England	1843-1855		G:424; P et al.:52	60-19	1
WIE Oinment	J. B. Thorn, Chemist	England & New York	1853-	...THORN/...EMIST	P:Plate 33a	59-46	1
WIE Plate	Unidentified			AU...		59-36	1
WIE Plate	James Edwards & Son	England	1852-1882	STONE CHINA/...DWARDS & SON/...LEHALL	G:231; P et al.:231	59-42	1
WIE Soup Plate	Davenport	England	1830-1860	(prt) IRON STONE/DAVENPORT (imp) (?)/ DAVENPORT/(ANCHOR)/...E CHINA/4`	G:189-191	59-39	1
WIE Soup Plate	TJ & J Mayer	England	1843-1855	T.J. & J..../IMPRO.../IRON...	G:424; P et al.:52	59-43	1

Reference Abbreviations:

C Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn Godden 1980	P et al.	Praetzellis et al. 1983	Wl	Williams 1978
L Lunn 1981			Z	Zumwalt 1980

Table 10. Artifact Summary for Pit 83, HI56 Block

Category	Type	Description	N/MNI
Contexts 85 and 84			
<i>Activities</i>			
Commerce	-	Gold	1/1
Games	Chess	Bone Rook or Castle	1/1
Transportation	Wagon	Ferrous Staple	1/1
Writing	-	Slate Pencil	4/2
Writing	-	Slate Tablet	1/1
<i>Activities Subtotal</i>			8(1.4%)/6(3.0 %)
<i>Domestic</i>			
Food	Container	Glass Mineral Water	14/3
Food	Container	Glass Soda/Mineral Water	130/5
Food	Container	Glass Pickle	6/1
Food	Container	Glass Spice	1/1
Food Prep/Consumption	-	OP Hollow	1/1
Food Prep/Consumption	-	WIE Hollow	3/1
Food Prep/Consumption	Closure	WIE Lid	1/1
Food Prep/Consumption	Kitchen	Ferrous Knife	1/1
Food Prep/Consumption	Serving	Porcelain Dish	1/1
Food Prep/Consumption	Serving	WIE Bowl	2/1
Food Prep/Consumption	Serving	WIE Dish	2/1
Food Prep/Consumption	Serving	WIE Ewer	7/2
Food Prep/Consumption	Serving	WIE Hollow	7/1
Food Prep/Consumption	Serving	WIE Lid	1/1
Food Prep/Consumption	Serving	Glass Creamer	5/1
Food Prep/Consumption	Tableware	CP Medium Bowl	3/1
Food Prep/Consumption	Tableware	Porcelain Cup	2/1
Food Prep/Consumption	Tableware	OP Cup	1/1
Food Prep/Consumption	Tableware	OP Saucer	1/1
Food Prep/Consumption	Tableware	WIE Cup	3/1
Food Prep/Consumption	Tableware	WIE Flat	6/1
Food Prep/Consumption	Tableware	WIE Plate	7/4
Food Prep/Consumption	Tableware	WIE Saucer	2/2
Food Prep/Consumption	Tableware	WIE Soup Plate	12/2
Food Prep/Consumption	Tableware	Glass Hollow	5/1
Food Prep/Consumption	Tableware	Glass Mug?	3/1
Food Prep/Consumption	Tableware	Glass Stemware	2/2
Food Prep/Consumption	Tableware	Glass Tumbler	16/3
Food Storage	Container	CBGS Wide Mouth Jar	3/1
Furnishings	-	Ferrous Tack	2/2
Heating and Lighting	Lamp	Glass Chimney	16/1
<i>Domestic Subtotal</i>			266(47.7%)/47(23.7 %)
<i>Faunal</i>			
Shell	-	Shell Mussel	2/1
Shell	-	Shell Mussel/Clam	1/1
Shell	-	Shell Oyster	5/3
<i>Faunal Subtotal</i>			8(1.4%)/5(2.5 %)
<i>Floral</i>			
Pit	-	Seed Peach	1/1
<i>Floral Subtotal</i>			1(.2%)/1(.5%)

Table 10. Artifact Summary for Pit 83, HI56 Block

Category	Type	Description	N/MNI
Contexts 85 and 84, continued			
<i>Indefinite Use</i>			
-	-	Porcelain Indefinite	1/1
-	-	Glass Hollow/Bottle	4/1
-	-	Glass Ring	5/5
-	-	Ferrous Band	1/1
-	-	Copper-Alloy Indefinite	1/1
-	-	Ferrous Strap	3/1
-	-	Ferrous Wire	1/1
-	-	Ferrous Indefinite	1/1
-	Closure	Ferrous Can Lid	5/3
-	Container	Glass Bottle	15/2
-	Container	Ferrous Can	2/1
<i>Indefinite Use Subtotal</i>			39 (7.0%)/18(9.1 %)
<i>Personal</i>			
Accouterments	-	Hard Rubber Hair Comb	1/1
Accouterments	Jewelry	Glass Bead	97/97
Clothing	Fastener	Copper Alloy Button	1/1
Clothing	Fastener	Ferrous & Wood Button	2/2
Clothing	Fastener	Glass Button	1/1
Clothing	Fastener	Porcelain Button	8/8
Clothing	Fastener	Shell Button	3/3
Footwear	-	Leather Boot/Shoe	6/2
Grooming/Health	Container	Glass Ginger	1/1
Grooming/Health	Container	Glass Medicinal Oil	1/1
Grooming/Health	Container	Glass Nervine/Pain Killer	2/1
Grooming/Health	Toiletry	Hard Rubber Comb	1/1
Indulgences-Alcohol	Container	Stoneware Ale/Beer	3/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	1/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	77/9
Indulgences-Alcohol	Container	Glass Wine/Champagne	1/1
Indulgences-Tobacco	-	Earthenware Pipe	1/1
<i>Personal Subtotal</i>			203(36.4%)/132(66.7%)
<i>Structural</i>			
Hardware	-	Ferrous Mount	1/1
Hardware	Fastener	Ferrous Nail-Cut	10/8
Hardware	Fastener	Ferrous Nail/Washer	3/2
Hardware	Fastener	Ferrous Tack	1/1
Material	-	Ceramic Floor Tile	1/1
Material	Window	Glass Pane	16/1
<i>Structural Subtotal</i>			32(5.7%)/14(7.1 %)
<i>Undefined</i>			
-	-	Ferrous Undefined	1/1
<i>Undefined Subtotal</i>			1(.2%)/1(.5%)
<i>Total Contexts 85 and 84</i>			558/224

Table 11. Pit 83 Ceramic Tableware and Serving Vessels, HI56 Block

Contexts 84 and 85

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Celadon	Medium Bowl	1/ 1
Double Happiness	Medium Bowl	2/ 1
<i>Subtotal</i>		<i>3/ 2</i>
<i>Non-Chinese Ceramics</i>		
Flow Blue; Molded	Lid	1/ 1
Gaudy	Soup Plate	1/ 1
Molded	Ewer	1/ 1
Molded "Fig"	Lid	1/ 1
Molded "Sharon Arch"	Hollow	1/ 1
Molded (Paneled)	Bowl	2/ 1
Molded (Paneled)	Saucer	1/ 1
Sided	Cup	2/ 1
Sided; Molded	Dish	2/ 1
<i>Subtotal</i>		<i>12/ 9</i>
Undecorated	Various	48/14
<i>Subtotal</i>		<i>48/14</i>
<i>Total</i>		<i>62/25</i>

Table 12. Date and Origin of Marked Ceramic and Glass Items for Pit 83, HI56 Block Sacramento

Contexts 84 and 85

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat#	MNI
WIE Bowl	Thomas Hughes	England	1860-1894	(ROYAL ARMS) T...	G:137-8; P et al.:45	84-3	1
WIE Bowl	Thomas Hughes	England	1860-1894		G:137-8; P et al.:45	85-10	1
WIE Ewer				2.70		85-19	1
WIE Hollow	Wedgwood/Davenport	England	1861-1864		W:79	85-14	1
WIE Lid	Wedgwood/Davenport	England	9/1856-1859		W:43	85-8	1
WIE Lid			1842-1867	STONE/CHINA/(portion of early registry mark)	W:22	85-9	1
WIE Plate	E & C Challinor	England	1862-1891	IRONSTONE/CHINA/E & C CHALLINOR	G:137-8; P et al.:18	85-11	3
WIE Plate	Thomas Hughes	England	1860-1891	...MAS HUGHS/5	G:137-8; P et al.:45	85-16	1
WIE Saucer	Edward Clarke	England	1865-1877	(ROYAL ARMS) EDWARD CLARKE/ PORCELAIN TUNSTALL OPAQ...	G:97; P et al.:14	85-12	1
WIE Soup Plate	Robert Cochran	Scotland	1846-1891	(ROYAL ARMS)...RRANTED STONE CHINA/R	G:157-8; P et al.:25	85-13	1
WIE Soup Plate	Davenport	England	1850-1887	(FIGURE EIGHT WITH ANCHOR) 2/IRON- STONE//12.68	G:189-91; P et al.:29	85-15	1
Glass Alcohol	Unidentified			WW		85-48	1
Glass Alcohol	Unidentified			...D		85-49	1
Glass Alcohol	Unidentified			A B ... & ...		85-50	1
Glass Alcohol	Unidentified			H...		85-80	1
Glass Jamaica Ginger	Lyons & Co	San Francisco	ca 1852-	...S & CO/...INGER/S.F.	F:129	85-38	1
Glass Medicinal Oil	James N. Pratt	San Francisco	1850's-	FOR/ABOLISH PAIN	F:195	85-34	1
Glass Nervine/Pain	Radway & Co	New York	1877-	...R.R./...ADWAY & CO/...EW YORK//...NTD ACORD	F:74	85-35	1
Glass Water	Jacob Hoehn	Sacramento	1870-1883	MINERAL WATER// J.H.	S:141; M&M:100-1	84-19	1
Glass Water	Jacob Hoehn	Sacramento	1870-1883	SUMMIT/MINERAL EA.../J.H.	S:141; M&M:100-1	85-39	2
Glass Water	E.L. Billings	Sacramento	1865-1884	E.L. BILLINGS// SAC CITY	S:122; M&M:100-1	84-20	1
Glass Water	E.L. Billings	Sacramento	1865-1884	E.L. BILLINGS// SAC CITY	S:122; M&M:100-1	85-40	1

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	Wl	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

Table 13. Pit 69 Ceramic Tableware and Serving Vessels, HI56 Block

Contexts 80 and 81

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Double Happiness	Medium Bowl	2/1
<i>Subtotal</i>		<i>2/1</i>
<i>Non-Chinese Ceramics</i>		
Blue Transfer Print	Flat	1/1
Molded	Plate	1/1
Molded "Fig"	Slop Bowl	2/1
Molded (Floral)	Hollow	2/1
Molded (Paneled)	Bowl	8/1
Molded (Paneled)	Saucer	6/2
Sided	Cup (Porcelain)	3/1
Sided	Cup (WIE)	1/1
Sided; Molded (Paneled)	Plate	1/1
<i>Subtotal</i>		<i>25/10</i>
Undecorated	Various	85/16
<i>Subtotal</i>		<i>85/16</i>
<i>Total</i>		<i>112/27</i>

Table 14. Artifact Summary for Pit 69, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 80 and 81			
<i>Activities</i>			
Games	Toy	Porcelain Doll	3/1
Tool	-	Ferrous Trowel	1/1
Writing	-	Slate Pencil	1/1
Writing	Container	Glass Inkwell	4/1
<i>Activities Subtotal</i>			9(1.3%)/4(3.1 %)
<i>Domestic</i>			
Food	Container	Glass Mineral Water	12/2
Food	Container	Glass Soda/Mineral Water	135/5
Food	Container	Glass Pickle	4/2
Food Prep/Consumption	-	WIE Hollow	16/1
Food Prep/Consumption	-	WIE Indefinite	4/1
Food Prep/Consumption	Closure	Earthenware Lid	2/1
Food Prep/Consumption	Kitchen	Bone & Ferrous Knife	1/1
Food Prep/Consumption	Kitchen	Ferrous Masher	2/1
Food Prep/Consumption	Serving	OP Ewer	1/1
Food Prep/Consumption	Serving	OP Plateau Liner	1/1
Food Prep/Consumption	Serving	WIE Bowl	8/1
Food Prep/Consumption	Serving	WIE Dish	1/1
Food Prep/Consumption	Serving	WIE Ewer	5/1
Food Prep/Consumption	Serving	WIE Platter	2/1
Food Prep/Consumption	Serving	WIE Slop Bowl	5/2
Food Prep/Consumption	Serving	Glass Creamer	12/1
Food Prep/Consumption	Tableware	CP Medium Bowl	2/1
Food Prep/Consumption	Tableware	Porcelain Cup	3/1
Food Prep/Consumption	Tableware	Porcelain Flat	2/1
Food Prep/Consumption	Tableware	OP Cup	10/1
Food Prep/Consumption	Tableware	OP Saucer	1/1
Food Prep/Consumption	Tableware	WIE Cup	3/2
Food Prep/Consumption	Tableware	WIE Flat	11/1
Food Prep/Consumption	Tableware	WIE Plate	17/2
Food Prep/Consumption	Tableware	WIE Saucer	12/3
Food Prep/Consumption	Tableware	WIE Soup Plate	4/1
Food Prep/Consumption	Tableware	Glass Hollow	13/1
Food Prep/Consumption	Tableware	Glass Mug	12/1
Food Prep/Consumption	Tableware	Glass Stemware	1/1
Food Prep/Consumption	Tableware	Glass Tumbler	8/2
Food Storage	Container	Stoneware Crock	2/1
Furnishings	-	Copper-Alloy Tack	1/1
Heating and Lighting	-	Glass Fixture	1/1
Heating and Lighting	Lamp	Glass Chimney	18/3
Heating and Lighting	Lamp	Copper Alloy Holder	1/1
<i>Domestic Subtotal</i>			333(47.3%)/49(38.0%)
<i>Faunal</i>			
Shell	-	Shell Mussel/Clam	6/4
<i>Faunal Subtotal</i>			6(.9%)/4(3.1 %)

Table 14. Artifact Summary for Pit 69, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 80 and 81			
<i>Floral</i>			
Pit	-	Seed Apricot	1/1
Pit	-	Seed Peach	3/3
Pit	-	Seed Peach/Nectarine	1/1
Pit	-	Seed Plum	2/2
<i>Floral Subtotal</i>			7(1.0%)/7(5.4 %)
<i>Indefinite Use</i>			
-	-	Bone Handle	1/1
-	-	Copper-Alloy Strap	1/1
-	-	Ferrous Strap	4/1
-	-	Ferrous Wire	3/1
-	-	Lead Indefinite	5/1
-	-	Other Indefinite	3/1
-	Closure	Rubber Stopper	1/1
-	Container	Glass Bottle	75/7
-	Container	Ferrous Can	27/2
-	Fastener	Ferrous Buckle	1/1
<i>Indefinite Use Subtotal</i>			121(17.1%)/17(13.2%)
<i>Personal</i>			
Accouterments	-	Hard Rubber Hair Comb	1/1
Accouterments	Jewelry	Copper-Alloy Ring	1/1
Clothing	Fastener	Ferrous Button	3/2
Clothing	Fastener	Glass Button	2/2
Clothing	Fastener	Porcelain Button	5/5
Clothing	Fastener	Ferrous Corset	3/1
Clothing	Fastener	Ferrous Safety Pin	2/1
Footwear	-	Leather Boot/Shoe	25/9
Grooming/Health	Container	Glass Ginger	1/1
Grooming/Health	Container	Glass Medicine	4/2
Grooming/Health	Toiletry	Copper-Alloy Comb	1/1
Indulgences-Alcohol	Container	Stoneware Ale/Beer	3/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	93/7
Indulgences-Alcohol	Container	Glass Wine/Champagne	1/1
Indulgences-Tobacco	-	Clay Pipe	3/1
<i>Personal Subtotal</i>			148(21.0%)/36(27.9%)
<i>Structural</i>			
Hardware	Fastener	Ferrous Bolt	2/1
Hardware	Fastener	Ferrous Nail-Cut	16/8
Material	-	Ferrous Screen	3/1
Material	Window	Glass Pane	53/1
<i>Structural Subtotal</i>			74(10.5%)/11(8.5 %)
<i>Undefined</i>			
-	-	Copper Alloy Undefined	6/1
<i>Undefined Subtotal</i>			6(.9%)/1(.8%)
Total Contexts 80 & 81			704/129

Table 15. Date and Origin of Marked Ceramic and Glass Items for Pit 69, HI56 Block Sacramento

Contexts 80 and 81

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
WIE Bowl	Thomas Hughes	England	1860-1894		G:339; P et al.:45	80-15	1
WIE Bowl	Thomas Hughes	England	1860-1894		G:339; P et al.:45	81-21	1
WIE Plate	Robert Cochran	Scotland	1846-1891	WARRANTED/(ROYAL ARMS)/R...	G:157-8; P et al.:44	81-3	1
WIE Plate	Thomas Hughes	England	1860-1891	THOMAS HUGHES/BURSLEM	G:339; P et al.:44	81-5	1
WIE Platter	Edward Clarke	England	1865-1877	(ROYAL ARMS)/EDWARD CLARKE/ PORCELAIN OPAQUE/TUNSTALL	G:97; P et al.:21	81-6	1
WIE Saucer	E & C Challinor	England	1862-1891	IRONSTONE/CHINA/E. & C CHALLINOR	G:137-8; P et al.:18	80-8	1
WIE Saucer	E & C Challinor	England	1862-1891	(ROYAL ARMS)...	G:137-8; P et al.:18	81-4	1
WIE Slop Bowl	Wedgwood/ Davenport	England	9/1856-		W:46	80-5	1
WIE Slop Bowl	William Adams	England	1853-1865	(ROYAL ARMS)/WILLIAM ADAMS/IRON- STONE CHINA/TUNSTALL	P et al.:3	81-7	1
Glass Ginger	Unidentified	San Francisco		...S.F./R/S.F. ...		81-47	1
Glass Medicine	Ayer's	Lowell	1841-1938	...OWEL/MAS...	F:94	81-37	1
Glass Water	Jacob Hoehn	Sacramento	1870-1883	...ATER;...UMML...;... H	S:141; M&M:100-1	80-30	1
Glass Water	E.L. Billings	Sacramento	1865-1884	...G'S...;BILL...;GEY...;...CIT...;GEY...	S:123-4	80-29	2
Glass Water	E.L. Billings	Sacramento	1865-1884	E.L. BIL...	S.:123-4	81-56	1

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S.	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	WI	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

AREA 2: 513/515 I STREET (FORMERLY 139/141 I STREET)

Figure 18 is a plan view of the area after the excavation of Layer 954; Figure 19 is the Harris Matrix for these addresses; Figure 20 shows the cross section through the area after the excavation of Layer 954.

SITE STRUCTURE

Pier Bases

After Context 976 and other demolition-associated contexts were cleared, 11 brick pier bases were exposed (Contexts 916, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930). As these features were somewhat irregularly placed, it is unclear exactly how many buildings they represent. However, it seems likely that Contexts 923 through 930 were associated with a building toward the rear of the parcels, while the others are the remains of a second building that faced I Street. The pier bases ranged from 3 feet square to 3 feet 6 inches square and consisted of a series of stepped courses surmounted, in some cases, by the remnant of a brick pier 2 feet 6 inches square. Artifacts from the footing trenches did not provide tight dating evidence. However, the same lead water pipe that was found on 507 I Street also appeared on the present parcel. This pipe, designated Context 970, was clearly in place when the pier bases were constructed, whereas Wall 904 was constructed around the pipe.

The footing trenches of all pier bases were excavated into Context 902, a layer of fine, yellow-brown, sandy silt. This stratum was from 2 to 8 inches in thickness and covered the entire area. It has an artifact-based TPQ of 1853 and appears to be an alluvium deposited by the flood of 1861-1862. The surface of this layer was used as a living surface and contained intrusions of brick and mortar from the overlaying demolition rubble, as well as a large quantity of domestic artifacts including Chinese ceramics, food bone, and glass sherds.

Four pits were discovered after the removal of Context 902. These features were cut into Context 903, the presumed 1855 fire layer, and thus were excavated and filled between 1855 and 1861.

Pits 919, 962, 965

These were small, shallow pits each containing only a single layer of fill and only a few artifacts. Pits 919 and 962 had TPQs of 1849 and 1843, respectively, based on ceramic makers' marks.

Pit 953

This feature was a relatively deep and substantial pit (Figures 21 and 22). It was only partly excavated as it extended under Walls 915 and 904 to the south and west, respectively. The feature was at least 2 feet 6 inches by 3 feet and 2 feet 6 inches deep.

The feature contained four layers of soil, Contexts 958, 959, 960, and 961, which appeared to have been deposited in quick succession. Artifacts included Chinese and European ceramics, brick rubble, ash, and charcoal. The edges of the pit were baked red

to a depth of about 2 feet; since no burned artifacts were found in the fill, however, it is unclear whether refuse disposal was the pit's initial function.

Context 903

This context consisted of a layer of charcoal and ash that extended across the entire exposure. It was taken to represent the 1855 fire (Figures 23 and 24). The stratum's thickness ranged from 3 inches in the southern portion of the parcel to a mere charcoal stain in the north end. Many Chinese and European domestic artifacts, both burned and unburned, were found within the matrix. The layer was removed in 3-foot squares in order to more accurately record these artifacts' provenience. All the matrix was bagged to be wet-screened later at the archaeological lab. This layer had a TPQ of 1845 based on a ceramic maker's mark.

Pit 979

This pit was sealed by Context 903, and thus was filled before 1855. Context 979 was a straight-sided pit, 2 feet by 2 feet 3 inches by 1 foot 3 inches deep. The feature contained a box of similar dimensions made of sheet iron. This box contained a variety of artifacts, including a skinning knife, musket balls, and some articulated animal bones. Since the box fit so snugly in the pit, it is assumed that the pit was dug especially to receive it.

Pit 964

This was a small pit, up to 10 inches deep by 1 foot 6 inches in diameter. It contained one layer of fill: a light brown sandy clay that contained ash and charcoal.

Context 954

Also sealed by the 1855 fire deposit was Context 954, a layer of brown silty loam. The layer, which covered the entire parcel to a depth of from 2 to 4 inches, contained a very large quantity of domestic debris, including food bone, British and Chinese ceramics, and bottle glass, as well some unique personal objects. Like the fire deposit, Context 954 was excavated in a series of 3-foot squares to improve provenience recording. All the matrix forming this context—some 6 tons in all—was bagged and transported back to the archaeology lab where it was screened through 1/8-inch mesh and a sample floated to extract plant macrofossils.

The artifacts in this layer represents the earliest accumulation of archaeological materials on this parcel. It is believed that this context represents a mixture of flood-borne soils and artifacts that were disposed of ad hoc on the shore of China Lake by a heterogeneous group of individuals who had set up residence there in the five years immediately following the Gold Rush when the area was beginning to assume its Chinese character.

HISTORICAL ASSOCIATIONS

Again, it should be noted that throughout the years addresses are inconsistent on this part of I Street; it is only through working between sources that the correlation of 1860s and 1880s addresses was ascertained. These addresses were located on the E1/2 of

Lot 7, with a 40-foot frontage on I Street. George S. Fake was assessed for this double lot in 1851; the land was valued at \$1,600 and the improvements at \$2,400 (Sacramento Assessment Rolls 1851). In September 1851, incumbent Judge Fake was renominated as the Independent candidate for the office of Justice of the Peace for the City of Sacramento (*Sacramento Union* 3 September 1851). The 15 men nominating Judge Fake included the owner of property bordering his on I Street to the east, E. Gillespie. Following his term, Mr. Fake worked as a lawyer (SCD 1856-1857:17). The *Daily Democrat* (15 November 1852) did not list Judge Fake in their comprehensive list of the sufferers from the fire of 2 November 1851. It is unclear where the Chinese merchants who lost a quarter of a million dollars worth of goods in that fire lived. It is clear that after the fire they dwelt on I Street. According to the *Daily Union*:

I Street has grown more than ever in importance. Escaping as it did, almost entirely from the ruinous effects of the conflagration, thousands of persons throng it daily—vehicles of all kinds are constantly passing backwards and forwards, bearing the rescued household effects to different points of destination—and the Chinese, particularly, have converted it into their K street, where the entire portion of that population resort. Above Fifth they are opening up places of business, and appear to have imbibed a large degree of that American feeling which knows no stop under adverse circumstances [8 November 1852].

Sacramentans began to rebuild before the ashes had time to cool: “The clinking of tools in the hands of busy workmen are heard every where. Babel could not have produced a more animated scene than presents itself wherever one goes throughout the burnt portions of the city” (*Sacramento Union* 8 November 1852). Teams of 20 to 40 oxen moved buildings up to three stories high for distances of many miles to replace those burned in the fire. Even “John Chinaman has turned housebuilder. Yesterday we saw him, ten times multiplied, bestriding the rafters of a frame building on I street, busily engaged with saw, hammer, and hatchet, splitting boards, driving nails, hewing timbers, and making himself otherwise useful. Well done John!” (*Sacramento Union* 11 November 1852). Despite this rebuilding and modernization, people still camped around China Lake. Just after the fire, a large party of Chinese were evicted from their campsite “under the Levee near H street in the immediate vicinity of a large number of frame dwellings and other combustible material” (*Sacramento Union* 5 November 1852).

When the city burned again in July 1854, the Chinese on I Street were left homeless, although they were able to move some of their belongings to safety on an island in China Lake (*Sacramento Union* 14 July 1854). They rebuilt immediately only to have the north side of I Street between 5th and 6th destroyed again by a fire less than a year later (*Sacramento Union* 4 July 1855). See 525/527 I Street for a complete discussion of these fires.

In 1854 and 1855 the E1/2 Lot 7 was assessed to Rossiter Preston Johnson, a merchant and agent for the Marysville-line steamers (SCD 1853:44). Mr. Johnson served as a Sacramento city councilman from April 1853 to April 1854, when he was elected mayor. Following his term as mayor, Johnson was elected President of the Sacramento Gas Company (SCD 1856:72). Born in the state of New York in 1811, R.P. Johnson had risen from his beginnings as a school teacher at age 18 to that of a prominent lawyer and

former New York legislator, when he organized a company of 10 men and headed across the Plains for the California gold mines in the spring of 1849. After an indifferent season in the mines, Johnson and a partner purchased a storeship moored at the foot of J Street and went into business as commission merchants and steamboat agents. Johnson's memorial described him as one of Sacramento's "most prominent, popular and worthy Pioneer Citizens". . . who "either as a farmer's boy, student, schoolmaster, mechanic, citizen, merchant, judge, legislator, miner or mayor of a city," was "true in every path of duty to his family, to his Society, as a private citizen or public officer" (*San Jose Pioneer* 15 November 1900; Sawyer 1886).

Following the July 1854 fire, R.P. Johnson immediately called a city council meeting and pushed for an extension of the fire limits within which only brick buildings could be built (SCD 1856:72). He may have suffered some embarrassment when the July 1855 fire burned the flimsy frame building on his I Street property. By 1856 R.H. Stanley owned this parcel. Richard H. Stanley, originally from New York, worked as an attorney and began purchasing property in Sacramento as early as February 1850, when he purchased property from John Sutter. Stanley married Ellen McDonald in 1858. Both Ellen and Richard, together and separately, had a tendency to get into debt. Between 1852 and 1858 they were involved in numerous lawsuits over unpaid promissory notes, mortgages, and business agreements. When personal property could not cover the judgments, the courts auctioned off their real estate. Thus, in August 1858, Stanley lost the E1/2 of Lot 6 HI56 Block, and in February 1859 he lost Lot 4 HI56 Block, among other property (Deeds W:446, Y:410).

By 1864 W.A. Piper owned this double lot. Piper, a politician, owned the lot until around 1870 when he sold to Jacob Hoehn; Piper was nominated as a congressional candidate in 1875. German emigrant Jacob Hoehn worked at the Plaza Saloon on J Street in the late 1860s. After purchasing Piper's lot, Hoehn constructed a brick building, eventually renumbered 143/145 I, to house an ice and coal business. Hoehn advertised as the Summit Ice Company in the 1870 city directory; by 1872 he also advertised Summit Mineral Water (SCD 1866, 1868, 1870, 1872, 1876). Hoehn and his heirs owned this parcel through 1920, but between 1891 and 1895 the brick building was removed. This parcel remained vacant through 1952.

Of course, none of the lawyers or politicians who owned this property before Jacob Hoehn actually lived or worked on the property. Numerous lines of evidence suggest that from 1853 through 1869 the Yu Chung Company leased this property from its owners. Table 16 presents data collected on the I Street Chinese merchants from various sources. It is extremely difficult to trace Chinese businesses through mid-19th-century records. Names are inconsistently spelled, handwriting is illegible, and distinctions are not made between company and individual names. Yu Chung is usually listed as a company and is believed to have been used as such by a number of individual merchants who remain unidentified.

According to the *Daily Democrat*, the Yu Chung Company suffered the greatest losses of any of the Chinese merchants on the block—\$9,000 including goods and the building (5 July 1855). The company rebuilt immediately and consistently possessed the highest or one of the highest assessed values of any of the Chinese merchants operating on I Street. Judging by the 1860 census records, two or three merchants probably lived at this address; they may have been joined by a cook, barber, or laborer. A woman listed as

Table 16. Chinese Businesses Facing on I Street between 5th and 6th, 1854-1873, HI56 Block Sacramento

Name	D1854	A1854	L1854	Fa1855	Fb1855	A1856	D1856	A1857	D1857	A1858 ¹
Sze Yap	X			X	\$1200	137 I	to 1861			
Sang Lee	I/5/6	\$1700	X	\$10,000	\$8000	\$2000	I/5/6	N \$300	I/5/6X	N \$1200
Wing Lee	I/6	\$1500	X	\$6000	\$6000	\$1800	I/5/6	S \$1000	I/5/6	\$160
Yu Chung Co.	I/5/6	\$2000	X	\$10,000	\$9000	N \$1500	I/5/6	N \$1000	I/5/6	N \$400
Wah Fong				\$6000	\$5000	\$3000	I/5/6		I/5/6	5/I \$400
Tailor					\$600					
Poh Green Fong					\$1000					
Yu Tuck				\$10,000	\$8000	N \$1200 ²	I/5/6	N \$1100	I/5/6	
Restaurant (2)					\$3000					
Rin Sing			X		\$3000					
Won Hang					\$1200					
Tsoe Wah					\$700					
Tin Wah Zong			X		\$1100					
Ming Yaong Co.					\$1000					
Hop Yuen						1/5 \$600	I/cor5	N \$800	I/5/6	N \$300
Quong Chung						\$2000 ³	I/5/6	S \$1000	I/5/6	N \$1400
Quong Fat						S \$1800		S \$800	148 I	148I \$1200
Tuck Lung							I/5/6			
Lep Chong								S \$100		
Wing Ling								I/cor5 \$150		
La Yake										S \$360
Qua Who								S \$800		
Long Sing										131I \$1200
Wah Yong										144I \$800

86

¹ D=Directory, A=Assessments, L=Business License Day Book, Fa=Fire of 1855, *Daily Union* 4 July 1855, Fb=*Daily Democrat* 4 July 1855, W=Wells Fargo Directory

² \$3,500 improvements, \$5,325 personal property added to assessment in pencil

³ \$2,000 lot,\$1,800 improvements, \$1,500 personal property in pencil to assessment

Table 16. Chinese Businesses Facing on I Street Between 5th and 6th Streets, 1854-1873, HI56 Block Sacramento, continued

Name	A1859	L1860	L1861	A1862	A1863	A1868	A1869	L1869	A1872	W1873
Sang Lee	N \$1400	I/5/6								
Wing Lee	S \$1500	I/5/6	I/5/6	148I \$1500						
Yu Chung Co.	S \$1000	I/5/6	I/5/6	141I \$2000	141I \$2000	X	X	I/5/6		86I
Wah Fong	S \$1000	I/5/6								
Hop Yuen	137I \$650	I/5/6								
Quong Chung	N \$1400	I/5/6								
Quong Fat	S \$1000									
Ton Wu Chan	N \$1000				66I \$1000				I/3	
La Yake		I/5/6	I/cor5	129I \$360	\$500					
Qua-Who			I/5/6							
Long Sing			I/cor5	I/cor5 \$600	131I \$300	X	X		131I	131I
Wah Hing			I/cor5			X		I/5		
Fong Hong	N \$100	I/5/6								
Ten Yuen	S \$900	I/5/6		152I \$1500	152I \$1000	X		150I		48I ?
Long Yee			I/5/6							
Hop Wo			I/5/6	87I \$150	87I \$300					
Wah Hing				128I \$600				I/5	I/5	134I
Chung Key				131I \$300			X			
Foo Hang					I/6 \$500					
Quong Wo							X		131I	131I

a wife or a prostitute may also have been part of the household. Last listed on this block in the 1868 business license day book, the Yu Chung Company moved to 86 I Street, when Hoehn purchased the property and built his brick warehouse.

INTERPRETATION

PIT 953 (Contexts 958, 959, 960, 961)

TPQ: 1853

DEPOSITION DATE: 1855-1861

HISTORICAL ASSOCIATION: Yu Chung Company

These contexts, layers in a pit, contained a relatively small quantity of artifacts that appear to represent refuse from the Chinese business that occupied this parcel in the late 1850s. The assemblage is dominated by ceramic tableware and storage vessels. Of the approximately 30 vessels represented, 20 were of Chinese origin (Tables 17 and 18). Tableware forms, which made up half of the Chinese ceramic group, included bowls, a dish, and a spoon in the Four Flowers, Bamboo, and Double Happiness designs; while the storage vessels were of CBGS and consisted of lids, globular jars, wide mouth jars, a liquor bottle, and other identifiable storage jars of various sizes.

The remainder of the ceramics appear to be of British origin. The tablewares consist of transfer-printed and molded plates and hollowware vessels; 10 sherds represent the same number of items. The small size and unique character of each of these sherds suggests that the British ceramics may have been secondary refuse—that the material was on the ground's surface when the feature was being filled, and that its presence in this feature is fortuitous.

The faunal remains consist of 26 mammalian bones representing at least 7 species. Of these, approximately 80% (n=21) of identified species are major meat species—cow, sheep, or pig; the remainder are minor meat animals—elk, deer, and jackrabbit—and incidental species (see Gust, Chapter 5).

Pit 953 was dug into Layer 903, sealed by flood layer 902, and cut by the walls of Hoehn's brick building. As such it dates between 1855 and 1861 and is associated with the activities of the Yu Chung Company.

CONTEXT 903

TPQ: 1850

DEPOSITION DATE: 1855

HISTORICAL ASSOCIATION: Yu Chung Company

This artifact-rich layer of blackened soil, charcoal, and ash represents the debris left by the fire of 1855. The stratum contained quantities of food bone, utilitarian ceramics from both China and Europe, decorative beads, and a variety of unique artifacts.

Of the 180 identified bones of the major meat species in the assemblage, approximately 50% (n=91) are cow, 37% (n=66) are pig, and 13% (n=23) are sheep; one elk and one jackrabbit bone are also present. Of the 12 bird bones, remains of wild species (ducks and geese) outnumber those of domestic chickens and turkeys (see Gust,

Chapter 5). Seven of the eight fish species represented are California natives; the group is dominated by Sacramento perch. The remaining species, represented by single bone, is a Chinese snapper (see Schulz, Chapter 5).

Most of the 31 glass beads found in this context are inexpensive monochrome or polychrome drawn beads, used principally in embroidery. A few decorative faceted beads that were used in jewelry and on religious artifacts are also present (see Ross, Chapter 5). No Chinese beads are present.

Chinese tablewares are represented by portions of approximately 17 items. Most are decorated in the familiar patterns of Bamboo, Celadon, Double Happiness, Four Flowers, and Simple Flower patterns; some are decorated using overglaze polychrome or blue-on-white techniques. Vessel forms include small and medium-sized bowls, cups, spoons, and a sauce pot. CBGS storage, cooking, and serving vessels occur as large and small storage jars, globular jars, barrel jars, liquor bottles, rectangular and square jars, wide mouthed jars, spouted jars, pans, and an unusual pedestaled vessel. Thirty-eight of the approximately 41 CBGS vessels represented in the assemblage are large storage vessels; 12 of these are globular jars (Tables 19, 20, and 21).

The non-Chinese ceramic tablewares are dominated by English-made plates, soup plates, dishes, basins, cups, and saucers. Of the approximately 24 items, about 14 are edge decorated or transfer printed, and 5 have molded decoration; most of the remainder are plain white earthenwares.

A variety of small, unusual items were recovered from this context. These include several *tongboa*, gun flints and lead shot, part of a jade bracelet, two bone dice, and 19 alcohol bottles—four of which are of CBGS. Although no Chinese buttons were found in this layer, several bone clothing buttons usually associated with Euroamerican dress were found. Among the seeds are specimens of the Chinese date and Chinese olive, both of which are used for medicinal purposes (see Hirn, Chapter 5).

PIT 979 (Contexts 974, 975, 980)

TAQ: 1855

DEPOSITION DATE: ca. 1854

HISTORICAL ASSOCIATION: Yu Chung Company

These contexts include the contents of a much decayed ferrous metal box and the hole in which it was installed. They contain an eclectic mixture of artifacts (Tables 22, 23, and 24). The English ceramics include both plain and transfer-printed fragments of a cup, bowl, plate, and saucer for a total of nine items; a stoneware crock, which may be North American or even local, was also found. The Chinese ceramic tablewares consist of sherds of two Double Happiness bowls and a blue-on-white ginger jar. Liquor-related artifacts consist of fragments of approximately three glass bottles, one of which is a French-made champagne bottle, and a portion of a CBGS liquor bottle.

Several unusual artifacts from these contexts bring to mind the Gold Rush. These include pieces of granitic rock and quartzite, which were surely ore samples, a round lead shot, and a bone and ferrous metal skinning knife. These contexts are taken to represent an isolated episode of refuse disposal in about 1854, a time when the property was occupied by Chinese immigrants. It is speculated that, at one time, the box may have held valuables that were secreted under a floor.

Pit 979 was beneath the burn layer and cut into Layer 954; it predates the July 1855 fire. The pit was dug to house the metal box. Overseas Chinese frequently hide items of value either in boxes beneath the floorboards or within walls. Archaeologists recovered a cache of \$200 in gold coins from beneath the floor of a Chinese residence in Lovelock, Nevada. The owner of the valuables stored in the box buried on I Street evidently had time to remove them before the fire consumed the building. The refuse that then found its way into the cavity is probably associated with the Yu Chung Company.

CONTEXT 954

TPQ: 1850 (an 1853 maker's mark is taken to be intrusive)

TAQ: 1855

DEPOSITION DATE: 1849-1855

HISTORICAL ASSOCIATION: Ethnic mix followed by Chinese after about 1852

The contents of this stratum of alluvium represent an accumulation of artifacts that occurred between the intensive settlement of Sacramento, in about 1849, and the summer of 1855. Historically, this location would have been close enough to the shore of China Lake to be only seasonally exposed. While historic documents show that the area was occupied principally by Chinese pioneers after about 1852, the record is sparse for the earlier years. Probably by November 1852 and certainly by 1854, Chinese merchants lived and worked on the parcel. This context produced a very large collection of artifacts, dominated by domestic ceramics and food remains, and with an eclectic mixture of personal accouterments (Figure 25).

The collection contains nearly 4,200 fish, mammal, and bird bones, almost all of which represent food remains. The 57 total identified fishes represent 15 species; of these 10 are California natives. Sacramento perch constitute 54% (n=31) of the total fishes represented (see Schulz, Chapter 5). The identified mammal food remains are dominated by the major meat species: cow (n=1,320), pig (n=309), and sheep (n=177) bones constitute approximately 98% of the collection. The remaining 37 are elk and deer. In contrast, the remains of wild avian species—a total of 108 bones, including those of geese, ducks, coots, swans, crane, and dove—outnumber chicken and turkey by a ratio of 2:1 (see Gust, Chapter 5).

All of the ceramics whose origin can be identified are from either China or Britain. Fragments of approximately 16 Chinese-made, porcelain tableware vessels were found (Table 25). Although these included examples of all of the most common types, the collection includes an unusually high proportion of unique, blue-underglaze-decorated vessels (see Hellmann and Yang, Chapter 5). Sherds representing 9 different forms of CBGS storage vessels were also found. The 83 British tablewares and serving vessels are mainly decorated with transfer-printed, edged, sprig, molded, and sided designs. At least 13 different manufacturers are represented among these items (Table 26).

The collection contains 219 glass beads (see Ross, Chapter 5). Most of these are either tiny seed beads, used for embroidery, or larger faceted beads that may have been attached to clothing. Personal effects range from a powder flask, lead balls, and gun flints to clothing buttons and fragments of at least 39 alcohol bottles (Table 27).

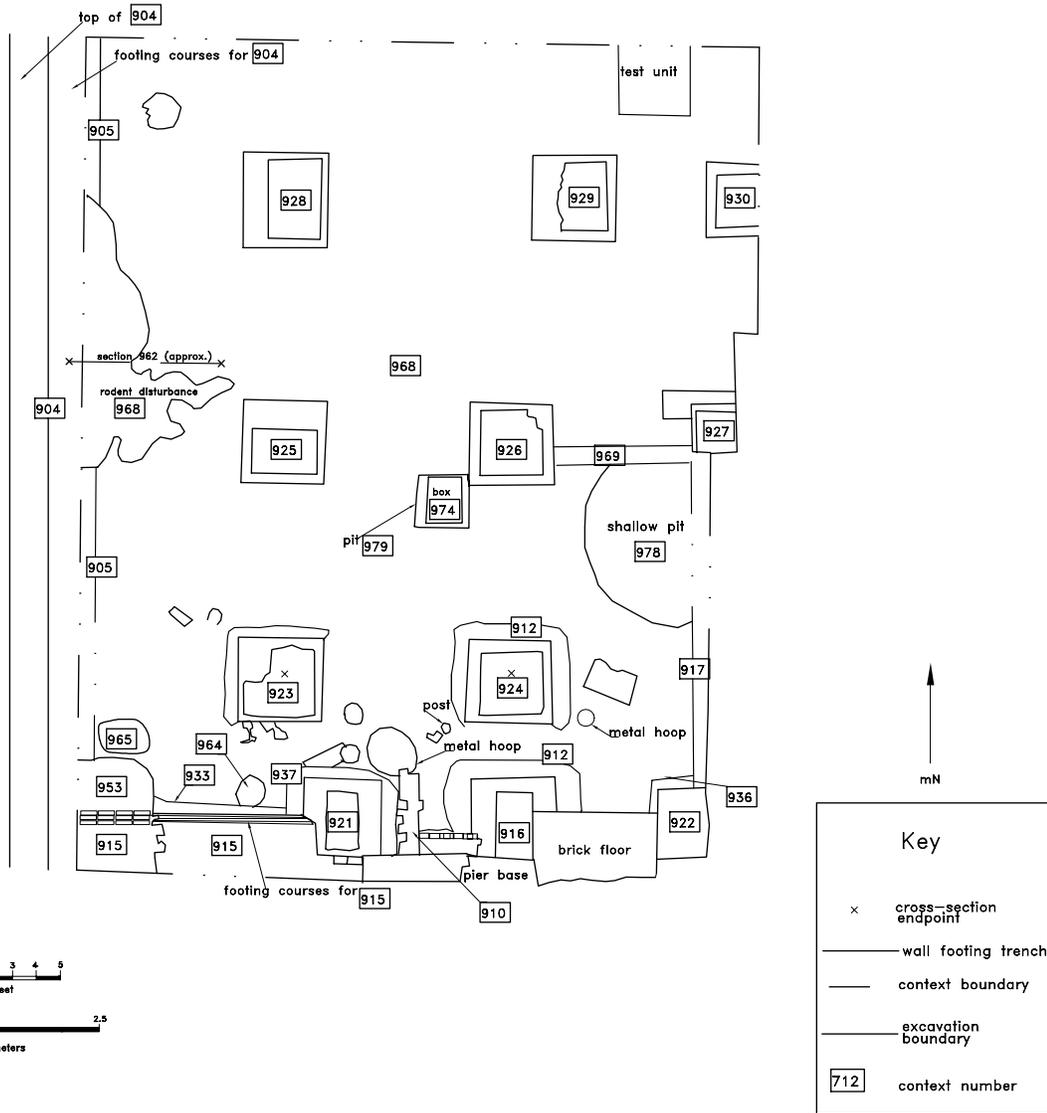
Figure 18. 513/515 I Street,
Area 2, site plan

Sacramento Federal Courthouse: HI56 Block

513/515 I Street: context 968 exposed

Anthropological Studies Center, Sonoma State University

drawn by C. Praetzel 12/94, digitized by B. Eastman/ sac\968p.dwg



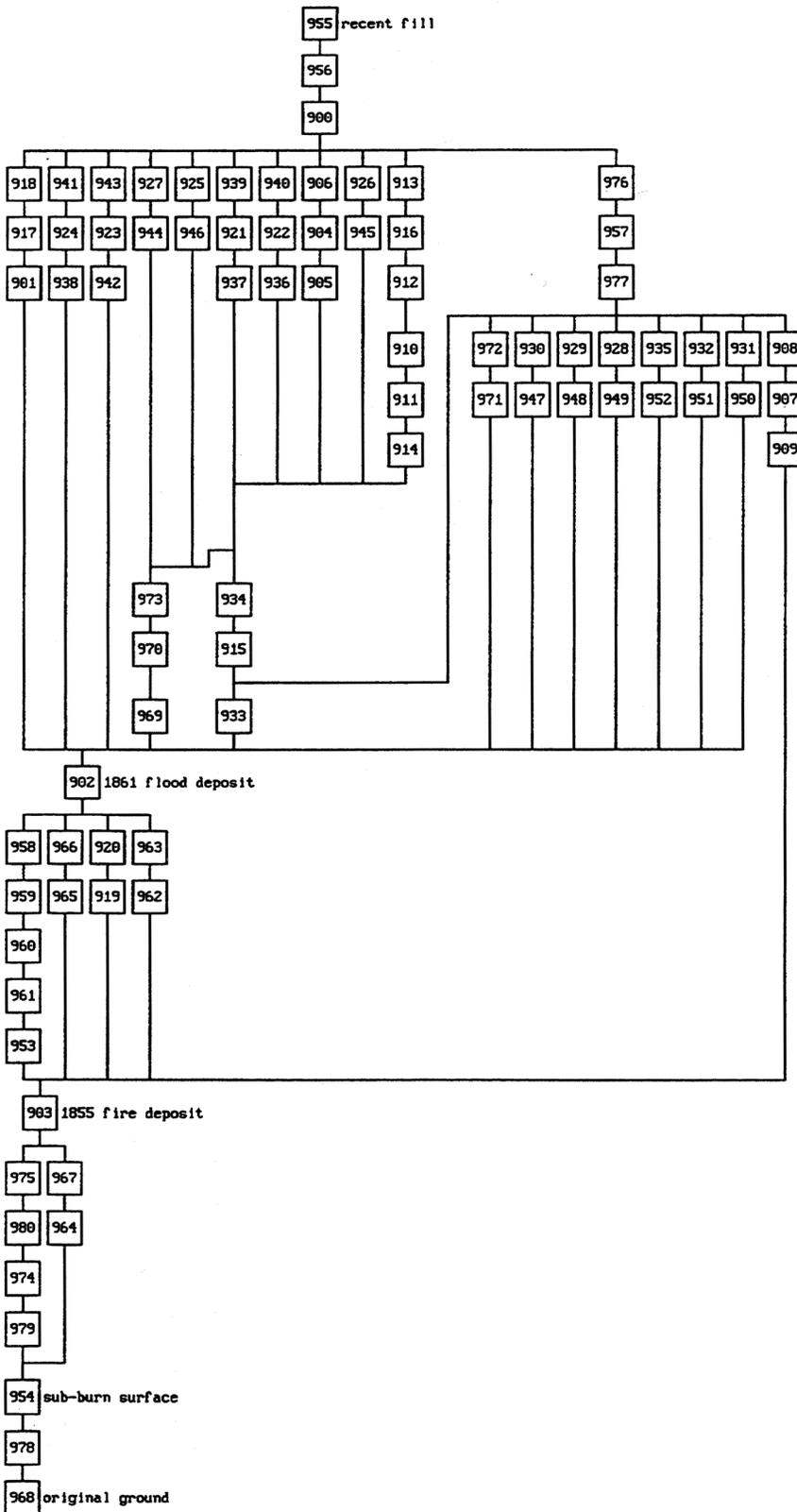


Figure 19. Harris Matrix, 513-515 I Street

Sacramento Federal Courthouse: HI56 Block
 513-515 I Street: cross-section
 Anthropological Studies Center, Sonoma State University
 drawn by M. Schur 12/94, digitized by B. Eastman/ sac156.dwg

Figure 20. Cross-section through 513/515

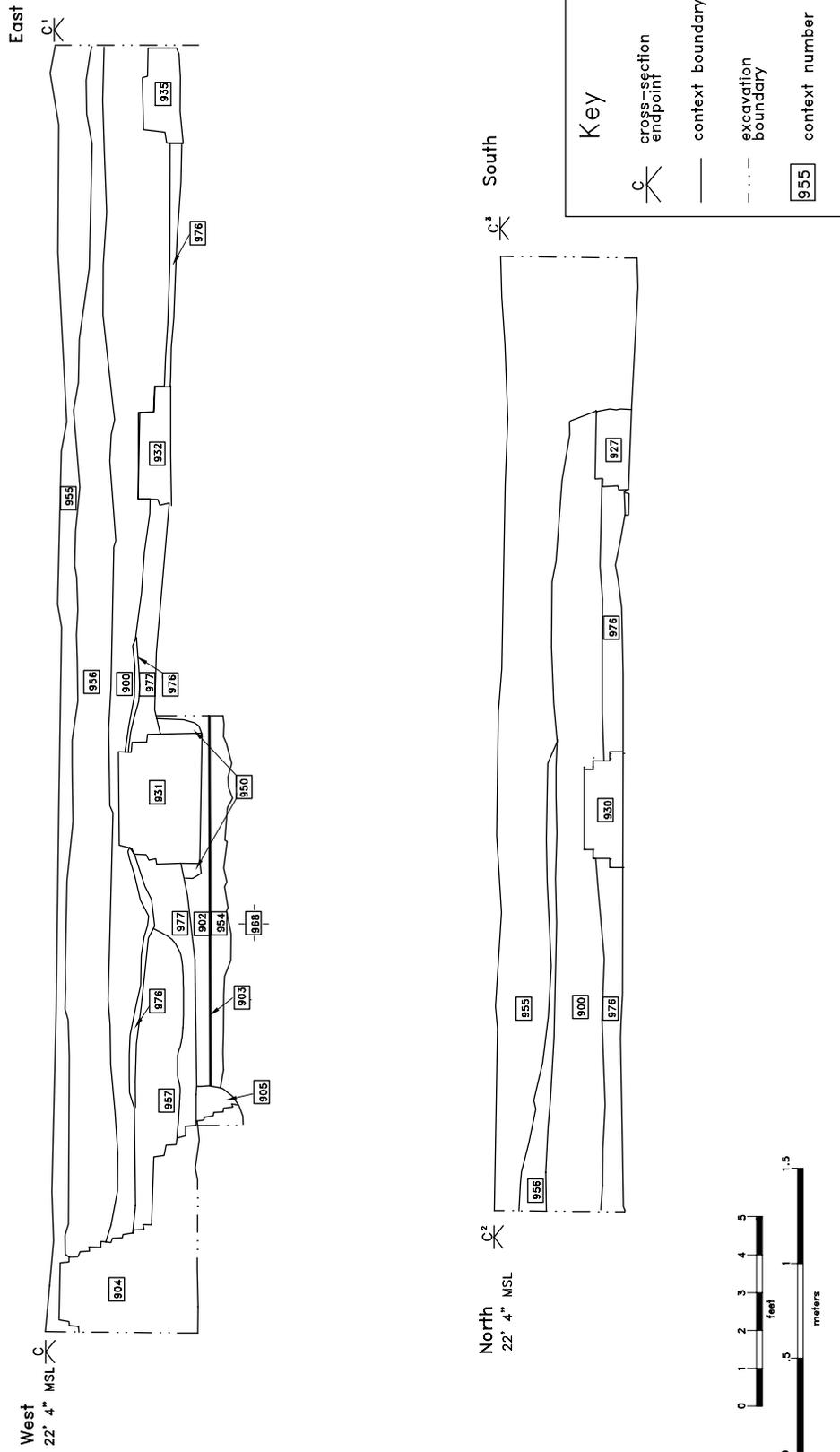


Figure 21. Pit 953 Cross section

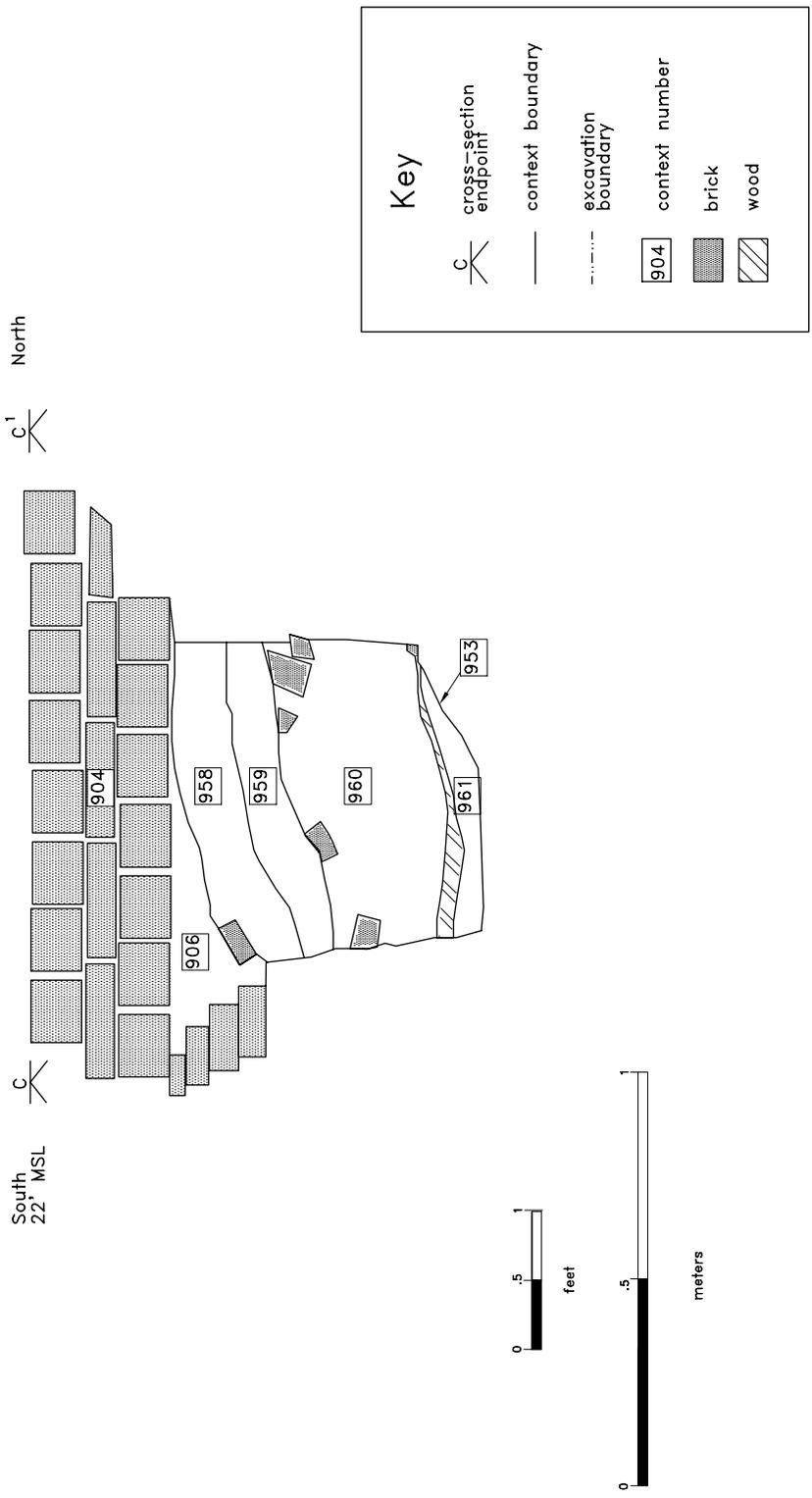




Figure 22. Pit 953, partly excavated. *This feature, which contained domestic refuse and building debris, was filled in the mid- or late 1850s. Portions of the fill extended under two substantial brick walls and could not be safely excavated. (Scale = 3 feet)*



Figure 23. Excavation of Context 903. *This layer of charcoal and abundant artifacts was created by the fire of 1855, which destroyed the store and offices of the Yu Chung Company.*



Figure 24. Excavation of Context 903. *A layer of artifacts, created when the Yu Chung Company's store burned in 1855, covered most of the parcel at 513 I Street. The large brick piers were installed by 1870 to support a warehouse building.*



Figure 25. Artifacts from Context 954. *These materials of glass, ceramic, bone, and metal accumulated on the shore of China Lake in the early 1850s immediately before the fire that razed Sacramento's Chinese district.*

Table 17. Pit 953 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 958, 959, 960, and 961

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Medium Bowl	1/ 1
Double Happiness	Medium Bowl	3/ 1
Four Flowers	Dish	2/ 2
Four Flowers	Large Bowl	9/ 1
Four Flowers	Spoon	2/ 1
Overglaze Polychrome	Medium Bowl	2/ 2
Overglaze Polychrome	Plate	3/ 1
Underglaze Blue	Dish	1/ 1
Underglaze Blue	Large Bowl	2/ 1
<i>Subtotal</i>		<i>25/11</i>
Undecorated	Various	6/ 2
<i>Subtotal</i>		<i>6/ 2</i>
<i>Non-Chinese Ceramics</i>		
Blue Transfer Print "Florentine"	Flat	1/ 1
Blue Transfer Print (Floral)	Plate	2/ 1
Blue Transfer Print (Scenic)	Plate	1/ 1
Red Transfer Print	Plate	1/ 1
Flow Blue	Plate	1/ 1
Molded	Dish	1/ 1
Molded	Hollow	2/ 1
Molded	Platter	1/ 1
<i>Subtotal</i>		<i>10/8</i>
Undecorated	Various	7/ 2
<i>Subtotal</i>		<i>7/ 2</i>
<i>Total</i>		<i>48/23</i>

Table 18. Artifact Summary for Pit 953, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 958, 959, 960, and 961			
<i>Activities</i>			
Commerce	Coin	Copper-Alloy <i>Tongbao</i>	1/1
Firearms	Gun	Lead Shot	7/7
Tool	-	Stone Grinding Stone	11/2
Writing	-	Slate Pencil	1/1
<i>Activities Subtotal</i>			20(4.9%)/11(11.3%)
<i>Domestic</i>			
Food Prep/Consumption	Closure	Glass Lid	1/1
Food Prep/Consumption	Serving	CP Bowl	1/1
Food Prep/Consumption	Serving	CP Dish	3/3
Food Prep/Consumption	Serving	CP Large Bowl	11/2
Food Prep/Consumption	Serving	CP Plate	3/1
Food Prep/Consumption	Serving	CP Small Dish	5/1
Food Prep/Consumption	Serving	WIE Dish	3/2
Food Prep/Consumption	Serving	WIE Platter	1/1
Food Prep/Consumption	Tableware	CP Medium Bowl	6/4
Food Prep/Consumption	Tableware	CP Spoon	2/1
Food Prep/Consumption	Tableware	WIE Flat	1/1
Food Prep/Consumption	Tableware	WIE Hollow	2/1
Food Prep/Consumption	Tableware	WIE Plate	5/4
Food Prep/Consumption	Tableware	WIE Soup Plate	5/1
Food Storage	Closure	CBGS Lid	1/1
Food Storage	Closure	CS Lid	4/3
Food Storage	Container	CBGS Globular Jar	106/2
Food Storage	Container	CGGS Globular Jar	18/2
Food Storage	Container	CBGS Large Storage Vessel	14/1
Food Storage	Container	CBGS Small Storage Vessel	8/1
Food Storage	Container	CBGS Wide Mouth Jar	14/1
<i>Domestic Subtotal</i>			214(52.3%)/35(36.1%)
<i>Faunal</i>			
Shell	-	Shell Barnacle & Mussel/Clam	3/1
<i>Faunal Subtotal</i>			3(.7%)/1(1.0%)
<i>Indefinite Use</i>			
-	-	Ferrous Bucket	13/2
-	-	Copper-Alloy Handle	1/1
-	-	Ferrous Kettle	1/1
-	-	Copper-Alloy Pipe	1/1
-	-	Ferrous Strap	3/1
-	Container	Stoneware Bottle	1/1
-	Container	Glass Bottle	6/2
-	Container	Ferrous Can	28/1
<i>Indefinite Use Subtotal</i>			54(13.2%)/10(10.3%)

Table 18. Artifact Summary for Pit 953, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 958, 959, 960, and 961			
<i>Personal</i>			
Accouterments	Jewelry	Glass Bead	4/4
Clothing	Fastener	Bone Button	1/1
Clothing	Fastener	Copper Alloy Button	1/1
Clothing	Fastener	Shell Button	1/1
Clothing	Fastener	Copper Alloy Eye Hook	1/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	2/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	4/1
Indulgences-Alcohol	Container	Glass Wine/Champagne	18/1
Indulgences-Tobacco	-	Clay Pipe	3/1
<i>Personal Subtotal</i>			35(8.6%)/12(12.4%)
<i>Structural</i>			
Hardware	-	Ferrous Hinge	1/1
Hardware	-	Ferrous Hook	1/1
Hardware	-	Ferrous Mount	1/1
Hardware	-	Ferrous Pintel Hinge	1/1
Hardware	Fastener	Ferrous Nail-Cut	70/20
Material	-	Mortar	1/1
Material	Window	Glass Pane	6/1
<i>Structural Subtotal</i>			81(19.8%)/26(26.8%)
<i>Undefined</i>			
-	-	Lead Undefined	1/1
-	-	White Metal Undefined	1/1
<i>Undefined Subtotal</i>			2(.5%)/2(2.1 %)
Total Contexts 958, 959, 960, and 961			409/97

Table 19. Context 903 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Context 903

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Medium Bowl	6/ 1
Celadon	Bowl	1/ 1
Celadon	Cup	1/ 1
Celadon	Hollow	2/ 1
Celadon	Medium Bowl	3/ 1
Celadon	Spoon	1/ 1
Double Happiness	Medium Bowl	3/ 1
Four Flowers	Medium Dish	1/ 1
Overglaze Polychrome	Bowl	1/ 1
Overglaze Polychrome	Cup	3/ 1
Overglaze Polychrome	Hollow	1/ 1
Overglaze Polychrome	Medium Dish	1/ 1
Overglaze Polychrome	Spoon	1/ 1
Simple Flower	Sauce Pot	2/ 1
Simple Flower	Tiny Cup	1/ 1
Underglaze Blue	Medium Bowl	8/ 1
Underglaze Blue	Sauce Pot	1/ 1
<i>Subtotal</i>		<i>37/17</i>
<i>Non-Chinese Ceramics</i>		
Blue Shell Edge	Soup Plate	1/ 1
Blue Transfer Print	Flat	1/ 1
Blue Transfer Print	Plate	10/1
Blue Transfer Print "Willow"	Plate	1/ 1
Blue Transfer Print (Diaper)	Plate	1/ 1
Blue Transfer Print (Floral)	Flat	1/ 1
Blue Transfer Print (Floral)	Hollow	3/ 1
Blue Transfer Print (Floral)	Soup Plate	3/ 1
Red Transfer Print (Scenic)	Plate	1/ 1
Flow Blue "Rose & Lily"	Hollow	20/3
Flow Blue (Floral)	Cup	1/ 1
Flow Blue (Floral)	Hollow	2/ 1
Molded	Basin	2/ 1
Molded	Hollow	4/ 1
Molded (Paneled)	Flat	1/ 1
Molded (Paneled)	Saucer	2/ 1
Molded (Paneled)	Soup Plate	1/ 1
Painted Banding	Cup	1/ 1
<i>Subtotal</i>		<i>56/20</i>
Undecorated	Various	35/ 4
<i>Subtotal</i>		<i>35/ 4</i>
<i>Total</i>		<i>128/41</i>

Table 20. Artifact Summary for Context 903, HI56 Block Sacramento

Category	Type	Description	N/MNI
Context 903			
<i>Activities</i>			
Civic	-	White Metal Identification Badge	1/1
Commerce	-	Gold Mineral	16/4
Commerce	Coin	Copper-Alloy <i>Tongbao</i>	10/10
Firearms	Gun	Stone Flint	3/3
Firearms	Gun	Lead Shot	4/4
Games	Game Piece	Bone Dice	2/2
Sewing	-	Copper Alloy Thimble	1/1
Tool	-	Ferrous Hoe	1/1
<i>Activities Subtotal</i>			38(2.7%)/26(8.4 %)
<i>Domestic</i>			
-	-	WIE Basin	2/1
-	-	WIE Hollow	3/1
Food	-	Egg Shell	9/1
Food	Container	Glass Bottle	2/1
Food	Container	Glass Jelly	1/1
Food	Container	Glass Soda/Mineral Water	31/6
Food	Container	Glass Spice	2/1
Food Prep/Consumption	-	WIE Hollow	14/2
Food Prep/Consumption	-	CS Hollow	3/1
Food Prep/Consumption	-	CBGS Pan	1/1
Food Prep/Consumption	Kitchen	WIE Hollow	4/1
Food Prep/Consumption	Serving	CP Bowl	1/1
Food Prep/Consumption	Serving	CP Medium Dish	2/2
Food Prep/Consumption	Serving	CP Sauce Pot	2/2
Food Prep/Consumption	Serving	WIE Hollow	3/1
Food Prep/Consumption	Tableware	Porcelain Cup	12/1
Food Prep/Consumption	Tableware	Porcelain Soup Plate	1/1
Food Prep/Consumption	Tableware	CP Bowl	1/1
Food Prep/Consumption	Tableware	CP Cup	4/2
Food Prep/Consumption	Tableware	CP Hollow	3/2
Food Prep/Consumption	Tableware	CP Medium Bowl	20/4
Food Prep/Consumption	Tableware	CP Spoon	2/2
Food Prep/Consumption	Tableware	CP Tiny Cup	1/1
Food Prep/Consumption	Tableware	WIE Cup	12/2
Food Prep/Consumption	Tableware	WIE Flat	7/3
Food Prep/Consumption	Tableware	WIE Hollow	12/2
Food Prep/Consumption	Tableware	WIE Plate	14/5
Food Prep/Consumption	Tableware	WIE Saucer	2/1
Food Prep/Consumption	Tableware	WIE Soup Plate	8/4
Food Prep/Consumption	Tableware	Glass Hollow	1/1
Food Prep/Consumption	Tableware	Glass Indefinite	1/1
Food Prep/Consumption	Tableware	Glass Tumbler	2/1
Food Prep/Consumption	Tableware	Copper Alloy Spoon	2/1
Food Prep/Consumption	Tableware	Ferrous/wood Fork	1/1
Food Storage	Closure	CBGS Lid	10/3

Table 20. Artifact Summary for Context 903, HI56 Block Sacramento

Category	Type	Description	N/MNI
Food Storage	Closure	CS Lid	18/3
Context 903, continued			
Food Storage	Closure	Glass Stopper	1/1
Food Storage	Container	CBGS Barrel Jar	3/2
Food Storage	Container	CBGS Globular Jar	315/11
Food Storage	Container	CGGS Globular Jar	2/1
Food Storage	Container	CBGS Large Storage Vessel	327/3
Food Storage	Container	CGGS Large Storage Vessel	1/1
Food Storage	Container	CGGS Pedestaled Vessel	3/1
Food Storage	Container	CBGS Recessed-Rim Jar	12/1
Food Storage	Container	CBGS Rectangular Vessel	3/1
Food Storage	Container	CBGS Small Storage Vessel	11/1
Food Storage	Container	CBGS Spouted Jar	10/1
Food Storage	Container	CGGS Sq. St. Sided Jar	14/1
Food Storage	Container	CBGS Straight-Sided Jar	1/1
Food Storage	Container	CBGS Wide Mouth Jar	31/11
Food Storage	Container	Stoneware Crock	2/1
Furnishings	-	Glass Mirror	1/1
Furnishings	-	Ferrous Tack	36/36
Heating and Lighting	-	Slag Fuel	2/1
Heating and Lighting	Lamp	Glass Chimney	9/1
Heating and Lighting	Lamp	Glass Tinkler	1/1
<i>Domestic Subtotal</i>			999(71.3%)/143(46.0%)
<i>Faunal</i>			
Shell	-	Shell Mussel	2/1
Shell	-	Shell Oyster	2/2
Shell	-	Shell Snail	1/1
<i>Faunal Subtotal</i>			5(.4%)/4(1.3%)
<i>Floral</i>			
Pit	-	Seed Peach/Nectarine	1/1
Seed	-	Seed Chinese Olive	1/1
<i>Floral Subtotal</i>			2(.1%)/2(.6%)
<i>Indefinite Use</i>			
-	-	Bone Handle	3/1
-	-	Stoneware Hollow	1/1
-	-	Copper-Alloy Indefinite	3/1
-	-	Cork? Indefinite	3/1
-	-	Ferrous Indefinite	1/1
-	-	Lead Indefinite	1/1
-	-	White Metal Indefinite	8/2
-	-	White Metal Wire?	1/1
-	Closure	Copper Alloy Cap	1/1
-	Container	Glass Bottle	41/7
-	Container	Stoneware Bottle	2/1
-	Container	Ferrous Can	5/1

Table 20. Artifact Summary for Context 903, HI56 Block Sacramento

Category	Type	Description	N/MNI
<i>Indefinite Use Subtotal</i>			70(5.0%)/19(6.1 %)
Context 903, continued			
<i>Personal</i>			
Accouterments	-	Glass Eye-Glass Lens	2/1
Accouterments	-	Glass Indefinite	1/1
Accouterments	-	White Metal Indefinite	1/1
Accouterments	Jewelry	Copper-Alloy Bead	1/1
Accouterments	Jewelry	Glass Bead	32/31
Accouterments	Jewelry	Glass Bracelet	1/1
Accouterments	Jewelry	Jade Bracelet	3/1
Clothing	Fastener	Bone Button	7/7
Clothing	Fastener	Copper Alloy Button	1/1
Clothing	Fastener	Ferrous Button	3/3
Clothing	Fastener	Porcelain Button	1/1
Clothing	Fastener	Shell Button	1/1
Footwear	-	Leather Boot/Shoe	1/1
Grooming/Health	Container	Glass Bottle	2/1
Grooming/Health	Toiletry	Bone Toothbrush	9/1
Indulgences-Alcohol	Container	Stoneware Ale/Beer	3/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	25/4
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	92/13
Indulgences-Alcohol	Container	Glass Wine/Champagne	3/1
Indulgences-Opium	-	Earthenware Pipe	22/3
Indulgences-Opium	Lamp	Glass Chimney	3/1
Indulgences-Opium	Lamp	Glass Wick Holder	1/1
Indulgences-Tobacco	-	Clay Pipe	2/1
<i>Personal Subtotal</i>			217(15.5%)/78(25.1%)
<i>Structural</i>			
Hardware	-	Ferrous Cup Hook	1/1
Hardware	-	Ferrous Hook	2/2
Hardware	Fastener	Ferrous Nail-Cut	49/29
Hardware	Fastener	Copper Alloy Tack	1/1
Hardware	Fastener	Ferrous Tack	2/2
Material	-	Clay Brick	5/1
Material	-	Mortar	2/1
Material	Window	Glass Pane	6/1
<i>Structural Subtotal</i>			68(4.9%)/38(12.2%)
<i>Undefined</i>			
-	-	Lead Undefined	1/1
<i>Undefined Subtotal</i>			1(.1%)/1(.3%)
Total Context 903			1400/311

Table 21. Date and Origin of Marked Ceramic and Glass Items for Context 903, HI56 Block Sacramento

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
CP Medium Bowl		China		XING-YO		903.68-3	1
CP Tiny Cup		China		Undefined		903.68-4	1
CP Spoon		China		ZHI ZAI CI SHAN ZHONG		903.68-6	1
CBGS Wide Mouth Jar		China		.../XIANG/HE		903.12-3	1
CGGS Sq. St. Sided Jar		China		SAN JI		903.68-17	1
WIE Flat	Unidentified			...HES		903.40-1	1
WIE Soup Plate	Edward Walley	England	1845-1856	...NA/...Y	G:644; P et al.:78	903.08-1	1
WIE Hollow	Edward Walley	England	1845-1856	...ONSTONE/...WARD WALL...	G:644; P et al:78	903.09-1	1
WIE Hollow	Davenport	England	1830-1887	R.../...DAVENPOR...	G:189-91; P et al:27	903.45-1	1
WIE Hollow	Davenport	England	1830-1887		G:189-91; P et al:27	903.68-10	1
Glass Soda/Water	Boley & Co/Union	Sacramento/PA	1850-1862	B.../SAC...//...LE.../...IT...//...ION.../PHIL	M & M:7	903.14-3	1
Glass Soda/Water	Boley & Co/Union	Sacramento/PA	1850-1862	B.../...A...	M & M:7	903.15-5	1
Glass Soda/Water	Unidentified			...L... & ...RK....		903.23-5	1

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzelis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzelis and Praetzelis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzelis et al. 1983	Wl	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

Table 22. Pit 979 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 974, 975, and 980

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Double Happiness	Medium Bowl	5/2
Underglaze Blue	Ginger Jar	5/1
Subtotal		10/3
<i>Non-Chinese Ceramics</i>		
Black Transfer-Print (Scenic)	Hollow	1/1
Blue Transfer-Print "Willow"	Plate	1/1
Subtotal		2/2
Undecorated	Various	13/7
Subtotal		13/7
Total		25/12

Table 23. Artifact Summary for Pit 979, HI56 Block Sacramento

<i>Category</i>	<i>Type</i>	<i>Description</i>	<i>Number/MNI</i>
Contexts 974, 975, and 980			
<i>Activities</i>			
Collecting	-	Granitic Sample	1/1
Collecting	-	Quartzite Sample	1/1
Firearms	-	Bone/Ferrous Skinning Knife	1/1
Firearms	Gun	Lead Shot	1/1
Tool	-	Ferrous Hayfork	1/1
<i>Activities Subtotal</i>			5(4.1%)/5(10.6%)
<i>Domestic</i>			
Food	Container	Glass Pickle	5/1
Food Prep/Consumption	-	WIE Indefinite	10/4
Food Prep/Consumption	Tableware	CP Medium Bowl	5/2
Food Prep/Consumption	Tableware	WIE Cup	1/1
Food Prep/Consumption	Tableware	WIE Flat	1/1
Food Prep/Consumption	Tableware	WIE Hollow	1/1
Food Prep/Consumption	Tableware	WIE Plate	1/1
Food Prep/Consumption	Tableware	WIE Saucer	1/1
Food Prep/Consumption	Tableware	Glass Stemware	1/1
Food Prep/Consumption	Tableware	Glass Tumbler	1/1
Food Storage	Container	Stoneware Crock	4/1
Food Storage	Container	CP Ginger Jar	5/1
Furnishings	-	Glass Mirror	1/1
<i>Domestic Subtotal</i>			37(30.1%)/17(36.2%)
<i>Faunal</i>			
Shell	-	Shell Scallop	1/1
<i>Faunal Subtotal</i>			1(.8%)/1(2.1%)
<i>Indefinite Use</i>			
-	-	Wood Handle	1/1
-	Container	Glass Bottle	14/10
-	Container	Stoneware Bottle	1/1
-	Container	Ferrous Can	2/1
<i>Indefinite Use Subtotal</i>			18(14.6%)/13(27.7%)
<i>Personal</i>			
Clothing	Fastener	Bone Button	1/1
Clothing	Fastener	Copper-Alloy Button	1/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	5/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	44/2
Indulgences-Alcohol	Container	Glass Wine/Champagne	3/1
<i>Personal Subtotal</i>			54(43.9%)/6(12.8%)
<i>Structural</i>			
Hardware	-	Ferrous Hinge	1/1
Hardware	-	Ferrous Hook	2/2
Hardware	Fastener	Ferrous Nail-Cut	3/1
Material	Window	Glass Pane	2/1
<i>Structural Subtotal</i>			8(6.5%)/5(10.6%)
Total Contexts 974, 975, and 980			123/47

Table 24. Date and Origin of Marked Ceramic and Glass Items for Pit 979, HI56 Block Sacramento

Contexts 974, 980, and 975

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
WIE Saucer	E. Challinor	England	1853-1862	PEARL.../IRONSTONE.../R. CH...	G:137; P et al:19-20	975-3	1
WIE Flat	J & S Alcock Jrs.	England	3/27/1848-1850	JO.../(REGISTRY DIAMOND; MONTH IS MARCH) (Illegible)	C:294; G:28	980-3	1
WIE Indefinite	Unidentified					980-16	1

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	WI	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

Table 25. Context 954 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Medium Bowl	22/ 1
Bamboo	Medium Dish	1/ 1
Celedon	Medium Bowl	1/ 1
Chinese Export Porcelain	Medium Bowl	12/ 1
Double Happiness	Medium Bowl	9/ 1
Four Flowers	Medium Dish	1/ 1
Four Flowers	Small Bowl	2/ 1
Four Flowers	Tiny Cup	1/ 1
Overglaze Polychrome	Spoon	1/ 1
Underglaze Blue	Dish	2/ 1
Underglaze Blue	Ginger Jar	15/ 1
Underglaze Blue	Indefinite	18/ 1
Underglaze Blue	Medium Bowl	23/ 1
Underglaze Blue	Medium Dish	3/ 2
Underglaze Blue	Spoon	1/ 1
<i>Subtotal</i>		<i>98/16</i>
Undecorated	Various	13/2
<i>Subtotal</i>		<i>13/2</i>
<i>Non-Chinese Ceramics</i>		
Annular	Hollow	1/ 1
Blue Shell Edge	Dish	6/ 1
Blue Shell Edge	Plate	5/ 1
Blue Shell Edge	Soup Plate	5/ 2
Red Shell Edge	Soup Plate	2/ 1
Black Transfer Print	Plate	3/ 1
Black Transfer Print (Scenic)	Flat	1/ 1
Black Transfer Print; Molded (Paneled)	Saucer	8/ 2
Blue Transfer Print "Florentine"	Cup	20/ 2
Blue Transfer Print "Florentine"	Plate	1/ 1
Blue Transfer Print "Florentine"	Saucer	6/ 1
Blue Transfer Print "Flosculous"	Soup Plate	7/ 1
Blue Transfer Print "Medici"	Saucer	13/2
Blue Transfer Print "Rhine"	Flat	1/ 1
Blue Transfer Print "Willow"	Hollow	1/ 1
Blue Transfer Print "Willow"	Plate	5/ 1
Blue Transfer Print "Willow"; Sided	Flat	1/ 1
Blue Transfer Print "Willow"; Sided	Plate	4/ 1
Blue Transfer Print (Diaper)	Soup Plate	1/ 1
Blue Transfer Print (Floral)	Cup	1/ 1
Blue Transfer Print (Floral)	Flat	1/ 1
Blue Transfer Print (Floral); Sided	Saucer	6/ 1
Blue Transfer Print (Ionian)	Flat	1/ 1
Blue Transfer Print (Scenic)	Cup	2/ 1
Blue Transfer Print (Scenic)	Flat	2/ 1
Blue Transfer Print (Scenic)	Hollow	4/ 1
Blue Transfer Print (Scenic)	Slop Bowl	22/3

Decoration	Form	N/MNI
Context 954, continued		
Blue Transfer Print (Scenic)	Soup Plate	2/ 1
Blue Transfer Print (Scenic); Sided	Cup	4/ 1
Blue Transfer Print (Scenic); Sided	Soup Plate	4/ 1
Blue Transfer Print	Flat	8/ 1
Blue Transfer Print	Indefinite	3/ 1
Blue Transfer Print	Plate	1/ 1
Blue Transfer Print	Saucer	9/ 1
Blue Transfer Print	Soup Plate	2/ 1
Brown Transfer Print (Ionian)	Hollow	8/ 1
Green Transfer Print	Flat	1/ 1
Mulbry Transfer Print (Floral)	Saucer	2/ 1
Red Transfer Print (Floral)	Indefinite	1/ 1
Red Transfer Print (Scenic)	Soup Plate	5/ 1
Flow Blue "Rose & Lily"	Hollow	2/ 1
Flow Blue "Tillenberg"	Flat	7/ 1
Flow Blue "Tillenberg"	Soup Plate	17/2
Flow Blue (Floral)	Flat	7/ 1
Flow Blue (Floral)	Saucer	2/ 1
Flow Blue; Sided	Lid	1/ 1
Molded	Hollow	9/ 1
Molded	Plate	6/ 1
Molded "Sprig"	Cup	2/ 1
Molded "Sprig"	Hollow	3/ 1
Molded "Sprig"	Lid	1/ 1
Molded "Sprig"	Soup Plate	3/ 1
Molded (Floral)	Lid	1/ 1
Molded (Paneled)	Cup	2/ 1
Molded (Paneled)	Dish	1/ 1
Molded (Paneled)	Flat	10/1
Molded (Paneled)	Saucer	7/ 2
Molded (Paneled)	Soup Plate	8/ 2
Sided	Cup	11/1
Sided	Plate	1/ 1
Sided	Platter	2/ 1
Sided	Soup Plate	5/ 1
Sided; Molded	Saucer	16/1
Sided; Molded	Soup Plate	2/ 1
Sided; Molded (Paneled)	Dish	3/ 1
Sided; Molded (Paneled)	Plate	8/ 1
Sided; Molded (Paneled)	Soup Plate	2/ 1
Sponge	Cup	3/ 2
<i>Subtotal</i>		<i>322/78</i>
Undecorated	Various	204/ 5
<i>Subtotal</i>		<i>204/ 5</i>
<i>Total</i>		<i>652/101</i>

Table 26. Date and Origin of Marked Ceramic and Glass Items for Context 954, HI56 Block Sacramento

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
CP Ginger Jar		China		Undefined		954.1 -217	1
CP Medium Bowl		China		SHENG HE		954.5 -43	1
CP Medium Bowl		China		Undefined		954.1 -6	1
CP Medium Dish		China		Sign of Longevity		954.2 -1	1
CP Small Bowl		China		Sign of Longevity		954.2 -3	1
CBGS Large Storage Vessel		China		Illegible		954.4 -50	1
CBGS Liquor Bottle		China		JUING CHANG		954.2 -22	2
CBGS Liquor Bottle		China		(Illegible)CHANG...TJ		954.4 -42	2
WIE Cup	TJ & J Mayer	England	1843-1855		G:424; P et al.:52	954.1 -24	1
WIE Cup	TJ & J Mayer	England	1843-1855		G:424; P et al.:52	954.1 -25	1
WIE Cup	J & S Alcock, Jrs.	England	3/27/1848-1852	...LCOCK/ (REGISTRY MARK)/ BRIDGE	C:294; P et al.:8	954.1 -33	1
WIE Dish	Evans & Glasson	Wales		BEST GOODS	T:73	954.4 -7	1
WIE Flat	Samuel Alcock & Co	England	1828-1859	...ERIAL/...NE CHINA/...LCOCK & CO	G:28; P et al.:9	954.4 -11	2
WIE Flat	Joseph Clementson	England	1839-1864	...ILLENBERG/ CLEMENTSON	G:150; P et al.:22	954.1 -38	1
WIE Flat	TJ & J Mayer	England	1843-1855	(FLOWER GARTER FRAGMENT)	G:424; P et al.:52	954.1 -39	1
WIE Hollow	Davenport	England	1830-1887		G:189-91; P et al.:27	954.7 -14	1
WIE Indefinite	E Challinor & Co.	England	1853-1862		G:37; P et al.:19-20	954.2 -14	1
WIE Indefinite	T J & J Mayer	England	1843-1855	(prt) T. J. &...//IM.../IRON.../CHIN... (imp) 5	G:424; P et al.:52	954.5 -42	1
WIE Indefinite	William Adams & Sons	England	1819-1864	...RENCH PORCELA.../W. ADAMS & SONS	G:21; P et al.:4	954.5 -49	1
WIE Plate	Mellor, Venables &	England	1834-1851	IRONSTONE CHINA/MELLOR VENABLES & CO	G:432; P et al.:59	954.2 -4	1
WIE Plate	Samuel Alcock & Co	England	1828-1859	(ROYAL ARMS)/IMPERI.../IRONSTON.../SAM AL...	G:28; P et al.:9	954.7 -12	1
WIE Plate	T & R Boote	England	1842-1891	...IN/...R/...BOOTE	G:84; P et al.:12	954.5 -52	1
WIE Plate	TJ & J Mayer	England	1843-1855		O:424; P et al.:52	954.4 -175	1
WIE Platter	J. Wedgwood	England	1841-1860	IRONSTONE CHINA/PEARL/J. WEDGWOOD	G:687; P et al:80	954.4 -8	1
WIE Saucer	TJ & J Mayer	England	1843-1855			954.1 -30	1
WIE Saucer	TJ & J Mayer	England	1843-1855	T. J. & J. MAYER'S//IMPROVED IRONSTONE/ CHINA	G:424; P et al.:52	954.5 -41	2
WIE Saucer	Thomas Walker	England	1845-1851	PEARL/IRONSTONE/CHINA//T. WALKER/ TUNSTALL	G:643; P et al.:78	954.5 -48	1

Table 26. Date and Origin of Marked Ceramic and Glass Items for Context 954, continued

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #
WIE Saucer	Unidentified			...OP B...RBER/...ONE		954.3 -4 1
WIE Saucer	Unidentified			(BOW FRAGMENT)		954.1 -32 1
WIE Slop Bowl	Unidentified			...O...;JT...		954.1 -21 2
WIE Soup Plate	J Genella	San Francisco	1850-1852	SAN FRANCISCO	P et al.:37-8	954.1 -16 1
WIE Soup Plate	William Ridgeway & Co	England	1834-1854	WR.../FLO...	Wl:629; G:538	954.4 -5 1
Glass Alcohol	Unidentified			...FELD. 1...		954.9 -9 1
Glass Alcohol	Unidentified			X X/X		954.7 -37 1
Glass Alcohol	Unidentified			PATENT//LIVERPOOL; DIXON & CO		954.1 -88 1
Glass Alcohol	Unidentified			...ATENT		954.1 -93 1
Glass Bottle	Unidentified			...RS...		954.3 -19 1
Glass Lotion/Oinment	Unidentified			D		954.1 -58 1
Glass Malaria	Osgood's	New York	1841-	CHO...	F:175	954.4 -69 1
Glass Malaria	Osgood's	New York	1841-	...OD'S//...OGUE//...YORK	F:175	954.1 -80 1
Glass Perfume	LT River	Paris & London		L.T. RIVER/PARIS/LONDON		954.4 -54 1
Glass Soda/Water	Unidentified			PR.../...ODA W...		954.2 -47 1
Glass Soda/Water	Union Glass Works?	Philadelphia		...WORKS/ ...DA		954.1 -85 1

125

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	Wl	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
<i>Activities</i>			
Collecting	-	Quartz Sample	2/2
Commerce	-	Gold	1/1
Commerce	Coin	White Metal Quarter?	1/1
Commerce	Coin	Copper-Alloy <i>Tongbao</i>	5/5
Firearms	-	Copper Alloy Powder Flask	1/1
Firearms	Gun	Lead Bullet	1/1
Firearms	Gun	Flint Stone	3/3
Firearms	Gun	Copper-Alloy Primer Cap	2/2
Firearms	Gun	Lead Shot	40/40
Games	Game Piece	Bone Dice	1/1
Games	Game Piece	Glass Marble	1/1
Knitting	-	Bone Knitting Needle?	1/1
Sewing	-	Copper -Alloy Straight Pin	1/1
Sewing	-	Copper -Alloy Thimble	1/1
Tool	-	Ferrous Adze/Pick	1/1
Tool	-	Ferrous Hewing Hatchet	1/1
Tool	-	Lead Punch	1/1
Transportation	Animal	Ferrous Horse Bit	1/1
Transportation	Animal	Ferrous Horse Shoe	2/2
Transportation	Wagon	Copper-Alloy Rivet	1/1
Writing	-	Slate Pencil	9/5
Writing	-	Slate Tablet	16/1
Writing	Container	Glass Inkwell	4/2
<i>Activities Subtotal</i>			97(2.6%)/76(8.0 %)
<i>Domestic</i>			
-	-	WIE Basin	3/1
-	-	Earthenware Hollow	1/1
-	-	WIE Hollow	9/1
-	-	Porcelain Indefinite	1/1
Food	Container	Glass Bottle	9/1
Food	Container	Glass Brandied Cherries	15/3
Food	Container	Glass Honey	31/3
Food	Container	Glass Jelly	17/1
Food	Container	Glass Olive Oil	13/3
Food	Container	Glass Pickle	1/1
Food	Container	Glass Soda/Mineral Water	9/4
Food	Container	Glass Spice	17/3
Food Prep/Consumption	-	WIE Hollow	23/3
Food Prep/Consumption	-	WIE Indefinite	19/1
Food Prep/Consumption	-	CBGS Pan	4/1
Food Prep/Consumption	Closure	Ferrous Lid	1/1
Food Prep/Consumption	Closure	Glass Lid	1/1
Food Prep/Consumption	Closure	WIE Lid	3/3
Food Prep/Consumption	Container	Earthenware Hollow	2/1
Food Prep/Consumption	Container	Ferrous Hollow	2/1
Food Prep/Consumption	Container	Stoneware Hollow	2/1
Food Prep/Consumption	Kitchen	Earthenware Bottle	1/1
Food Prep/Consumption	Kitchen	WIE Hollow	12/1

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
Context 954, continued			
Food Prep/Consumption	Kitchen	Ferrous Knife	1/1
Food Prep/Consumption	Serving	Porcelain Bowl	1/1
Food Prep/Consumption	Serving	CP Dish	2/1
Food Prep/Consumption	Serving	CP Medium Dish	9/3
Food Prep/Consumption	Serving	CP Small Dish	1/1
Food Prep/Consumption	Serving	WIE Dish	10/3
Food Prep/Consumption	Serving	WIE Hollow	7/1
Food Prep/Consumption	Serving	WIE Platter	2/1
Food Prep/Consumption	Serving	WIE Slop Bowl	22/3
Food Prep/Consumption	Serving	Glass Master Salt	2/1
Food Prep/Consumption	Serving	Glass Bowl	16/1
Food Prep/Consumption	Tableware	Porcelain Cup	2/1
Food Prep/Consumption	Tableware	Porcelain Flat	3/1
Food Prep/Consumption	Tableware	Porcelain Medium Bowl	12/5
Food Prep/Consumption	Tableware	Porcelain Soup Plate	2/1
Food Prep/Consumption	Tableware	CP Indefinite	18/1
Food Prep/Consumption	Tableware	CP Medium Bowl	74/5
Food Prep/Consumption	Tableware	CP Medium Dish	1/1
Food Prep/Consumption	Tableware	CP Small Bowl	2/1
Food Prep/Consumption	Tableware	CP Spoon	2/2
Food Prep/Consumption	Tableware	CP Tiny Cup	2/2
Food Prep/Consumption	Tableware	WIE Cup	44/9
Food Prep/Consumption	Tableware	WIE Flat	136/12
Food Prep/Consumption	Tableware	WIE Hollow	16/1
Food Prep/Consumption	Tableware	WIE Indefinite	6/2
Food Prep/Consumption	Tableware	WIE Plate	38/9
Food Prep/Consumption	Tableware	WIE Saucer	70/12
Food Prep/Consumption	Tableware	WIE Soup Plate	84/16
Food Prep/Consumption	Tableware	Glass Hollow	5/2
Food Prep/Consumption	Tableware	Glass Indefinite	1/1
Food Prep/Consumption	Tableware	Glass Shot Glass	2/1
Food Prep/Consumption	Tableware	Glass Stemware	6/3
Food Prep/Consumption	Tableware	Glass Tumbler	39/5
Food Prep/Consumption	Tableware	Copper Alloy Spoon	6/5
Food Prep/Consumption	Tableware	Ferrous Fork	3/2
Food Prep/Consumption	Tableware	Lead Flat	1/1
Food Storage	Closure	CBGS Lid	19/2
Food Storage	Closure	CS Lid	27/5
Food Storage	Container	CP Ginger Jar	15/1
Food Storage	Container	CBGS Barrel Jar	1/1
Food Storage	Container	CBGS Globular Jar	111/1
Food Storage	Container	CBGS Large Storage Vessel	80/1
Food Storage	Container	CBGS Lug Handled Jar	44/2
Food Storage	Container	CBGS Recessed-Rim Jar	18/1
Food Storage	Container	CBGS Small Storage Vessel	18/1
Food Storage	Container	CBGS Straight-Sided Jar	36/5
Food Storage	Container	CBGS Wide Mouth Jar	51/6
Food Storage	Container	Common Pottery Crock	2/1
Food Storage	Container	Stoneware Crock	38/2
Food Storage	Container	Lead Keg Spout	1/1

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
Context 954, continued			
Furnishings	-	Copper-Alloy Chinese Lock	2/1
Furnishings	-	Copper-Alloy Lock	1/1
Furnishings	-	Bone Indefinite	1/1
Furnishings	-	Glass Mirror	16/1
Furnishings	-	Copper-Alloy Outdoor Thermometer	1/1
Furnishings	-	Ferrous Stove	2/1
Furnishings	-	Ferrous Tack	6/6
Heating and Lighting	-	Coal Fuel	8/1
Heating and Lighting	-	Coke Fuel	16/2
Heating and Lighting	Lamp	Glass Chimney	36/7
Heating and Lighting	Lamp	Glass Chimney/Shade	1/1
Heating and Lighting	Lamp	Glass Tinkler	2/1
Heating and Lighting	Stove	Ferrous Burner	1/1
<i>Domestic Subtotal</i>			1398(37.5%)/211(22.1%)
<i>Faunal</i>			
Shell	-	Shell Abalone	1/1
Shell	-	Shell Clam	10/4
Shell	-	Shell Clam/Mussel	15/1
Shell	-	Shell Oyster	8/4
Shell	-	Shell Oyster/Clam	18/6
Shell	-	Shell Turban?	1/1
Shell	-	Shell Undefined	4/3
<i>Faunal Subtotal</i>			57(1.5%)/20(2.1%)
<i>Indefinite Use</i>			
-	-	Ferrous Disk	1/1
-	-	Lead Disk	5/3
-	-	Bone Handle	7/7
-	-	Copper-Alloy Handle	4/1
-	-	Ferrous Handle	7/3
-	-	Other Handle	2/2
-	-	Earthenware Hollow	1/1
-	-	WIE Hollow	2/1
-	-	Bone Indefinite	2/1
-	-	Chalk Indefinite	1/1
-	-	Copper-Alloy Indefinite	10/4
-	-	Ferrous Indefinite	7/4
-	-	Fiber Indefinite	5/1
-	-	Glass Indefinite	1/1
-	-	Gold Indefinite	1/1
-	-	Lead Indefinite	3/1
-	-	Rubber Indefinite	1/1
-	-	Shell Indefinite	1/1
-	-	Ferrous Pan or Lid	1/1
-	-	Copper-Alloy Pin	1/1
-	-	Ferrous Ring	1/1
-	-	Copper-Alloy Ring/Fitting	1/1
-	-	Copper-Alloy Rod	1/1
-	-	Ferrous Rod	3/1

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
Context 954, continued			
-	-	Ferrous Strap	23/1
-	-	Lead Strap	1/1
-	-	Ferrous Tube	1/1
-	-	Copper-Alloy Wire	20/1
-	-	Ferrous Wire	4/1
-	Closure	Copper-Alloy Cap	1/1
-	Closure	Ferrous Cap	1/1
-	Closure	WIE Lid	1/1
-	Container	Porcelain Bottle	1/1
-	Container	WIE Jar	1/1
-	Container	CS Large Storage Vessel	5/1
-	Container	Stoneware Bottle	38/2
-	Container	Glass Bottle	177/14
-	Container	Copper Alloy Can	8/1
-	Container	Ferrous Can	90/1
-	Container	Copper Alloy Tin	2/2
-	Fastener	Copper Alloy Buckle	6/3
-	Fastener	Ferrous Buckle	14/13
<i>Indefinite Use Subtotal</i>			463(12.4%)/88 (9.4 %)
<i>Industrial</i>			
-	Container	Stoneware Crucible	6/3
Assay	-	Milk Quartz	1/1
<i>Industrial Subtotal</i>			7(.2%)/4(.4%)
<i>Personal</i>			
Accouterments	-	Glass Eye Lens	1/1
Accouterments	-	Other Fan	3/1
Accouterments	-	Bone Hair Pin	4/1
Accouterments	-	Bone Indefinite	3/2
Accouterments	-	Glass Indefinite	3/2
Accouterments	-	Gold Indefinite	5/1
Accouterments	-	White Metal Indefinite	1/1
Accouterments	-	Copper-Alloy Purse	5/1
Accouterments	Jewelry	Glass Bead	227/219
Accouterments	Jewelry	Other Indefinite	1/1
Accouterments	Jewelry	Unidentified Indefinite	1/1
Accouterments	Jewelry	Copper-Alloy Pendant	1/1
Clothing	Fastener	Copper-Alloy Buckle	2/1
Clothing	Fastener	Ferrous Buckle	1/1
Clothing	Fastener	Bone Button	57/54
Clothing	Fastener	Ceramic Button	1/1
Clothing	Fastener	Copper-Alloy Button	10/10
Clothing	Fastener	Ferrous Button	12/12
Clothing	Fastener	Porcelain Button	20/20
Clothing	Fastener	Shell Button	8/8
Clothing	Fastener	Bone Collar Stud	1/1
Clothing	Fastener	Copper-Alloy Eyelet	2/1
Footwear	-	Leather Boot/Shoe	11/5
Grooming/Health	-	Bone Brush	1/1

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
Context 954, continued			
Grooming/Health	-	Glass Syringe	1/1
Grooming/Health	Container	Porcelain Jar	6/1
Grooming/Health	Container	Glass Bitters	10/3
Grooming/Health	Container	Glass Lotion/Ointment	1/1
Grooming/Health	Container	Glass Malaria	2/2
Grooming/Health	Container	Glass Medicine Vial	1/1
Grooming/Health	Container	Glass Perfume/Cologne	1/1
Grooming/Health	Medicinal	Porcelain Mortar	2/1
Grooming/Health	Toiletry	WIE Pitcher	14/1
Grooming/Health	Toiletry	Bone Comb	2/2
Grooming/Health	Toiletry	Bone Toothbrush	6/5
Indulgences-Alcohol	Container	Stoneware Ale/Beer	13/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	47/5
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	557/24
Indulgences-Alcohol	Container	Glass Wine/Champagne	226/9
Indulgences-Opium	-	Earthenware Pipe	28/4
Indulgences-Opium	-	Other Pipe	2/1
Indulgences-Opium	Container	Copper Alloy Opium	12/1
Indulgences-Tobacco	-	Clay Pipe	62/16
<i>Personal Subtotal</i>			1374(36.8%)/427(44.9%)
<i>Structural</i>			
Hardware		Copper-Alloy Mount	1/1
Hardware		Copper-Alloy Rivet	1/1
Hardware	-	Ferrous Bolt Receivers	2/1
Hardware	-	Ferrous Bracket	1/1
Hardware	-	Ferrous Hinge	2/2
Hardware	-	Ferrous Hinge-Pin	1/1
Hardware	-	Ferrous Hook	1/1
Hardware	-	Ferrous Key	1/1
Hardware	-	Lead Mount	1/1
Hardware	-	Copper-Alloy Washer	4/4
Hardware	-	Lead Washer	5/5
Hardware	Fastener	Ferrous Bolt & Nut	1/1
Hardware	Fastener	Copper-Alloy Nail-Cut	2/2
Hardware	Fastener	Ferrous Nail-Cut	82/49
Hardware	Fastener	Ferrous Nail-Wire	1/1
Hardware	Fastener	Ferrous Nut & Bolt	1/1
Hardware	Fastener	Ferrous Spike	2/2
Hardware	Fastener	Ferrous Staple	3/2
Hardware	Fastener	Copper-Alloy Tack	28/27
Hardware	Fastener	Ferrous Tack	7/7
Material	-	Clay Brick	2/1
Material	-	Concrete	1/1
Material	-	Copper-Alloy Sheet Metal	6/1
Material	-	Tar/Asphalt	1/1
Material	Window	Glass Pane	150/1
<i>Structural Subtotal</i>			307(8.2%)/116(12.2%)

Table 27. Artifact Summary for Context 954, HI56 Block Sacramento

Category	Type	Description	Number/MNI
Context 954, continued			
<i>Undefined</i>			
-	-	Bone Undefined	1/1
-	-	Copper-Alloy Undefined	9/3
-	-	Ferrous Undefined	10/1
-	-	Glass Undefined	1/1
-	-	Lead Undefined	3/1
-	-	Metal Undefined	2/1
<i>Undefined Subtotal</i>			26(.8%)/8(.9%)
Total Context 954			3729/950

AREA 3: 507 I STREET (FORMERLY 133 I STREET)

SITE STRUCTURE

This parcel was the location of a Chinese business in the early 1850s. Historic sources show wood-framed buildings extending north out over the shore of China Lake. After the fire of 1855, Josiah Gallup, purchased the property from its Chinese owners, constructed a 20 by 50 foot brick building on the parcel, and rented it back to the Chinese company. In the 1860s, this building was expanded to the rear. The object of the archaeological investigation was to discover remains that were discarded in situ in the wake of the 1855 fire that might reflect the activities of the Chinese companies who occupied the parcel at that time. Accordingly, archaeological testing concentrated on the area within and to the rear (north) of Gallup's building. Plans of these areas are presented as Figures 26 and 27; the Harris Matrix is Figure 28.

Building Remains

Context 714

This mortared brick wall was the most recent structural feature on this parcel. The wall and its associated concrete floor (Context 712) ran east-west across the rear of the area investigated, forming the area's northern boundary. The hard Portland cement used in its construction suggests that it was built in the 20th century.

Context 710

This was a brick wall, mortared with a soft lime and sand mixture. It was 16 inches wide and had a substantial stepped footing set in a wide builder's trench (Context 711). This feature was surely the eastern wall of the 1870s building at 509 I Street, next door. This north/south-oriented wall formed the eastern boundary of the archaeological test area. The wall overlay Context 709, the northern wall of Gallup's 1855 building. The west, north, and east walls of Gallup's building all survived. Since the wall had been truncated, it was not possible to determine its original width.

Context 701

Contiguous with this wall and covered by a thin layer of alluvial clay (Context 700) was Context 701, a one-course thick, brick floor. The unmortared floor was laid in a herringbone pattern (Figure 29). The floor lay up against Context 710's stepped footing; edge bricks were cut to fit. Two 3 by 3 foot units were excavated through the surface to determine if it sealed remains from the 1855 fire, but only sterile alluvium was found.

Context 707

Most of Context 702 appeared within three walls that represented a 10 by 13 foot brick building (Context 707) to the rear of what would have been Gallup's main building. The north wall of the building was missing, having been replaced by a far more massive wall, Context 723, after 707 was demolished. Context 711, which sealed most of the north side of this parcel, appears to represent the demolition of building 707.

Context 702

This stratum, that represented the debris of the 1855 fire, was located to the north of the remains of Gallup's building. The layer consisted of a thin deposit of charcoal, ash, and burned artifacts, all of which rested upon the baked surface of the underlying stratum, Context 706.

Other Features

Context 700

This was a layer of alluvium that probably represents the flood of 1860-1861; it overlay 702, the fire layer.

Context 703

This was the construction trench for an east/west-oriented lead water pipe, with a south-trending branch, that cut the flood deposit, Context 700, and tunneled through Building 707.

Context 734

This brick-lined drain was excavated into the flood deposit, Context 700, and overlaid by the demolition debris, Context 711. It appears to have been contemporary with Building 707.

Pit 719

Immediately to the east of Building 707—and overlaid by Walls 707, 723, and 710—was a massive pit, Context 719. While somewhat irregular in shape for its top few feet, this feature developed square, vertical sides and the suggestion of a wood lining. The shape suggests that this feature sat open for a time while the top eroded inward. It was a total of 8 feet 6 inches deep by 6 to 10 feet wide. Significantly, Pit 719 cut Layer 702, the presumed 1860-1861 flood deposit. Because of its large size, this feature was cross sectioned (Figure 30 and 31). All soil was retained for wet-screening and flotation.

Pit 719 contained three layers of fill. Context 720, the top layer, was a green-stained silty clay with a large amount of brick rubble and charcoal, but few artifacts. This material may have been construction debris from the expansion of Gallup's 1855 building, Context 709, in the early 1860s, mixed with up-cast soil from the excavation of footing trenches and material that eroded in as the top of the feature became unstable.

The interface between Contexts 720 and 736, and a portion of the north side were burned in situ. Context 732 was a shallow lens of light-brown clay. Context 736, the third layer, was a primary deposit of light brown clay that appears to be an alluvium that developed, perhaps by flooding, as the feature lay open. This layer contained more artifacts, including semi-intact tableware and a quantity of vegetable and fruit seeds, than the layers above, and no demolition debris. Contexts 737 and 738 were arbitrary 1-foot levels excavated within 736 where no stratigraphic break could be found. The bottom and 2 to 3 feet of the sides of the feature were burned.

Its wood lining may indicate that Pit 719 originally functioned as a well, since the 19th-century water table was considerably higher than in recent years. The burned sides and bottom are puzzling for the same reason. No artifacts were recovered that could tightly date the filling of this feature. On the basis of its stratigraphic position, it appears that the feature was excavated after 1861 and filled by 1870.

HISTORICAL ASSOCIATIONS

The archaeological deposits were discovered in the E1/4 of Lot 8. Fannie Kewen owned this parcel along with the remainder of the lot in 1851; the land was valued at \$2,000, improvements at \$4,000 (Sacramento Assessment Rolls 1851). T.B. Baillie owned the parcel the following year. Originally from Scotland, Dr. Baillie arrived in Sacramento in July 1849 at age 45 and established a private hospital for the sick. He later advertised as a druggist and physician at 153 J Street, where he lived with his wife and four children in 1855 (SCD 1851:8, 1856-7:20).

Improvements on this parcel burned with the rest of the block in the fires of July 1854 and July 1855. Following the second fire, the Sacramento city council had an emergency meeting in which they amended an ordinance fixing the limits wherein only fire-proof buildings could be constructed to include the “Chinese burnt district.” Within one week of the fire, “six substantial brick buildings” on both sides of I Street were in the planning stage. The *Sacramento Daily Union* expressed its editorial approval of these plans:

Aside from the unquestionable improvement which will endure to that locality in this respect, the event may be regarded as singularly important in its bearing on the future relative condition of the Chinese population in California. It is an acknowledged trait of that people to be tenacious of their customs—they do not readily depart from the beaten path in which they have been accustomed to tread, even though surrounded by the allurements of an active American life. When once some of their more influential countrymen shall have invested a proportion of their means in real estate and permanent brick improvements, the balance who have the ability will the more readily and surely seek similar improvement. Should this view of the tendency of the movement prove correct, the objection hitherto frequently urged, that the Chinese accumulate wealth without employing it in advancing the prosperity of the State, must necessarily be quieted or be greatly modified [11 July 1855].

The Chinese did not rebuild without help. On 28 July 1855, Jan Lee sold this parcel to T.A. Gallup for \$450. Jan Lee, Junior, acted as attorney in fact for the conveyance. The deed did not mention that the grantors were Chinese (one index even listed them as Janson), but the pair “signed” the document with two sets of Chinese characters (Deeds Q:39). These notations were not actually signatures; they repeated the terms of the transaction, including sales price, in Chinese. On 7 August 1855, E. Arsu sold the neighboring parcel (131 I) to Josiah Gallup (T.A.’s brother) for \$450; this deed is also “signed” with Chinese characters (Deeds Q:769). On 30 July 1855, the *Sacramento*

Union announced that “Mr. Gallup has commenced a two-story brick building forty feet front by fifty feet deep, on the north side of I street between Fifth and 6th streets—the Chinese burnt district”; this would have been on the parcel purchased by Josiah. On August 1st and 7th Gallup applied for water hookups (Tapper’s Book) and around the same time the *Sacramento Union* credited Mr. Gallup with more improvements: “Mr. Gallup will commence to-day another building twenty feet front by fifty feet deep, on the north side of I Street” (1 August 1855). By the end of August, a number of brick buildings had been constructed, evoking more praise from the press:

The late fire in Chinadom has resulted advantageously to a portion of the Chinese population, in furnishing them with buildings at once safe, commodious, convenient and comfortable. Where before there was a heterogeneous mass of tenements replete with every element of disease and discomfort, are now erected a number of substantial brick buildings—cool and clean and well adapted for pleasant habitations [*Sacramento Daily Union* 31 August 1855].

Josiah Gallup was born in Ledyard, Connecticut, in 1826 and headed for the California goldfields in 1849 along with a group of other men from Ledyard (Figure 32). In 1850 he and his fellow sojourners worked as bakers in Sacramento. Josiah’s brother T.A. (Timothy) joined him in 1851 and the two went into the teaming business (*San Jose Pioneer* 15 April 1900, 63:2). Josiah, the more capable of the two, saw that money could be made in transporting new arrivals to the mines. He invested in horses and 35 wagons that he then resold or used himself to move miners and supplies between Sacramento and the goldfields. He purchased a number of ranches, where he grazed his livestock and grew hay and other grains to feed them. Numerous young men, some related, followed him from Ledyard and worked as his teamsters and ranch hands. Josiah quickly became involved with the Chinese District Associations in San Francisco, transporting their members to the mines and acting as their agent in dealings with local authorities and businesses. Josiah met recent Chinese arrivals at the steamboat dock, housed them in a boardinghouse and then transported them to the mines. On the return trip, he would bring supplies such as lumber: “sold them about 1000 feet of lumber for another house. I buy this lumber on the [?] when they return from the mines empty; they buy from 25 to 28 dol per thousand and I sell from 55 to 60 dol per thousand feet. The Chinaman are carpinters they came to me and told me the [size?] house they wanted to build and went off and I sent them lumber as I thought they wanted” (Gallup, 31 October 1853; *punctuation added*). Not all of Gallup’s passengers were miners; he also transported prostitutes, which could be a dangerous business. “They go up to the mines two men and about six women and keep a fancy house. I have sent Wm Gallup up with four loads of women. They like to go through in one day if it is not over 45 miles. The men on the road bother them the worst kind when they stop at public houses” (Gallup, 14 February 1854; *punctuation added*). Gallup, a feet-man, remarked that the Chinese women had “beautiful feet no mistake. You know that is what I look at the first thing. A woman that looks sloven about the feet does not suit me” (Gallup, 20 April 1854; *punctuation added*).

Gallup did not lose his building in the fire of 1854: “It came very near me this time. I have wished but never so in life before. It burnt up opposite to me and we wet down the building. I had about 50 Chinaman got them to work. They worked like good fellows bringing water so I came out whole this time. . . I think no more I am getting sick of California will not build no more wood buildings. . . My house yard is full of Chinamans goods. They all got burned out I have got to help them about finding more building to trade in” (Gallup, 14 July 1854; *punctuated added*) (see also discussion on 525/527I and Chapter 6).

Josiah Gallup had not planned to stay long in California, but his teams and his commitments to the Chinese businessmen tied him to the place. The Chinese did not like working with his brother Timothy; they “put all confidence in me that any nation ever had in one” (Gallup, 31 October 1853). Josiah left behind the woman he loved, his cousin Julia Gallup. On hearing from a newcomer that Julia was keeping company with a young man, Josiah immediately left for Ledyard, where he found Julia entertaining said young man and, upon getting her alone, proposed. After a short visit, Josiah returned to Sacramento and arranged for Julia to come west with another Ledyard family (Pioneer file). While waiting her arrival, Josiah wrote Julia long, rambling, and very interesting letters touching on his business dealings in Sacramento and with the Chinese.

Two versions of Julia’s exciting trip across the Isthmus of Panama have been related by her descendants. In one, she and the son of the family with whom she traveled got separated from the group and spent the night in a shanty occupied by some rough-looking men, who gave her a blanket, as she was soaked to the skin. Gun shots awoke her in the night, but in the morning she and the boy rejoined the much relieved group, who laughed to see that the print from her dress had become stamped onto her skin. In the second version, Julia rode all day alongside a black, almost naked, native with a large dagger on his belt. When she reached the Pacific side, she was almost as black as the native, as the color from her dress had come off on her (Pioneer file). Nevertheless, Julia arrived safely in Sacramento, and she and Josiah were married by Reverend J. Lewis Shuck on 2 September 1854 (*Sacramento Union* 4 September 1854). Reverend Shuck also had intimate ties to the Chinese community. Shuck, an “old China hand,” whose wife was the first female American missionary to work in China, had been appointed by the Southern Baptists to work among the Chinese in California. In 1855 he purchased a lot on 6th Street between G and H for the construction of a Chinese church. With contributions from the American and local Chinese communities, including some funds raised by Tong K. Achick, Shuck raised sufficient money, and the church was dedicated on 10 June 1855, miraculously escaping the fire one month later (Barth 1964:167; Ng 1995:1498).

According to family tradition, Timothy Gallup was also in love with Julia. When he learned of the engagement upon her arrival, Timothy took the beautiful team of horses that he drove for Josiah and worked them until they were ruined (Gallup letter file).

Josiah Gallup unfortunately did not live long after Julia’s arrival; he died of cholera in November 1858 at age 31 (*Sacramento Union* 16 November 1858). “Ex-Alderman Josiah Gallup” was remembered as having been “engaged, among other pursuits, in the transportation of the Chinese to the interior, and was much respected and esteemed by that people, many of whom attended the funeral” (*Sacramento Union* 18

November 1858). Timothy Gallup lived to 72 years of age and died in Woodland, California, in March 1900 (*San Jose Pioneer* 15 April 1900). Julia stayed in Sacramento with relatives and eventually married Manville Barber.

The 20-foot-wide brick building built in August 1855 would have been on the property purchased by Timothy Gallup from Jan Lee just after the fire. The 40-foot-wide brick building would have stood at 129/131 I Street and would later be renumbered 503/505 I. Timothy Gallup did not have relations with the Chinese on his own and in this transaction he would have been working with his brother. The newspapers did not list Jan Lee as one of those who lost property in the fire. From the list of sufferers and other sources, Sang [Shang] Lee Company probably occupied this parcel at the time of the fire; they lost between \$8,000 and \$10,000 dollars, which was reported to be primarily opium (*Sacramento Democrat* 4 July 1855; *Sacramento Union* 4 July 1855). Sang Lee Company were listed in various documents on the I/5/6 block from 1854 through 1861 (see Table 16); they were consistently among the more affluent merchants.

Sang Lee Company sometimes did business with the Wing Lee Company. In January 1860, the two companies signed a promissory note for \$1,000 with A.G. Tryon, who owned the brick building within which the Wing Lee Company did business. According to court documents, Mar Quong, Chum Bon, Chum Ting, and Lee Ling made up the Wing Lee Company. George Elder, who like Gallup was a teamster with connections to the Chinese Companies and operated a boardinghouse on I Street near 6th, signed as security. The companies did not keep up payments on the note, and in October 1862 Tryon filed a complaint against the partners. The Chinese partners had signed the note with Chinese characters, supposedly the seals of the company. As Tryon sought payment from the individual partners, they claimed not to be members of the company. Tryon eventually got a Writ of Attachment and the sheriff confiscated Elder's teams, wagons, horses, and harnesses. He also confiscated two tin boxes from the Chinese containing the following: 2 colt pistols, \$313.50 gold, \$2.00 gold, 21 buttons, 11 gold finger rings, 1 gold silver plated ring, 1 gold seal, 3 gold ornaments for hair, 6 earrings, 1 gold watch, 3 gold tooth picks, 4 dome buttons, 2 small gold specimens, 1 hairpin gold, 1 ear cleaner, 2 papers about \$5.00 gold dust, \$12.50 gold, 11 pieces foreign coin value \$2.42, 12 dimes, 1 silver watch, 1 gold specimen, 273 silver dollars, 1 gold bar value \$5.00 (Tryon vs. Wing Lee Co. 1862). Both the Wing Lee and Sang Lee companies disappear from the assessment rolls and city directories after this time.

T.A. Gallup owned the brick building at 133 I Street through 1862; by 1864 the property belonged to William R. Gallup. It was not determined who leased the building at 133 I Street from 1862 through 1888. Julia Gallup/Barber continued to lease her building at 129 I and 131 I to Chinese merchants through 1880, when the Chinese "Joss House" probably was housed there. By 1888 she had bought out William Gallup and owned all of Lot 8 under the partnership of Barber and Folger. The partnership erected a large building on the corner lot that housed Osburn & Folger's coal, hay, grain, and feed warehouse, the Tahoe Ice Company, and a liquor store on the ground floor, and the Capital City Athletic Club on the second floor. The Sanborn map of 1895 shows this building, which stood through 1950. Barber and Folger owned the property through 1917; then Ella Folger, Julia's daughter, continued to own it through 1920, the end date for McGowan's map research (McGowan et al. 1979).

INTERPRETATION

CONTEXT 702

TPQ: 1843

DEPOSITION DATE: 1855

HISTORICAL ASSOCIATION: Sang Lee Co.

This shallow layer of burned soil, charcoal, and artifacts represents the fire that razed this city block in 1855. A relatively small area of this context had survived, resulting in a concomitantly low artifact yield. It was excavated to provide an assemblage with which to compare the contents of Context 903, which also was the product of the 1855 fire on an adjacent parcel.

The ceramic assemblage is dominated by Chinese utilitarian vessels (Tables 28 and 29). Tablewares consist of the common Bamboo, Celadon, Four Flowers, and blue-on-white designs and include portions of approximately 15 bowls, cups, and dishes. The approximately 21 CBGS storage vessels in the assemblage occur as globular jars, large and small storage jars, spouted jars, straight-sided jars, wide-mouth jars, liquor bottles, and a stew pot (Table 30). In contrast, sherds representing eight English soup plates, saucers, and unidentified vessels were found. Of these, all but one bear molded or transfer-printed designs.

Only 24 food bones were found. Of these, 20 are from pigs, 3 from cattle, and 1 is a Louisiana heron. The remainder of the collection is an eclectic mixture of building and hardware debris, glass bottle shards, and near unique items such as *tongbao*, a Chinese spherical button, and crucible fragments.

PIT 719 (Contexts 709, 720, 732, 736, 737, 738)

TPQ: 1861

TAQ: 1870

DEPOSITION DATE: ca. 1861-1865

HISTORICAL ASSOCIATION: Sang Lee Co.

This large, deep feature produced few artifacts relative to its volume (Table 31). The materials are dominated by sherds of Chinese ceramic table and storage vessels—a total of 38 of these vessels are represented. The assemblage includes sherds of 13 Chinese Celadon tableware items: two sizes of bowls, plates, spoons, and a cup; several of these items bore ownership marks (Chapter 5, Figure 33). The Four Flowers and Double Happiness design is represented by seven vessels, including four bowls and a plate, and two bowls, respectively. Seven, Chinese, overglaze polychrome and monochrome decorated bowls, plates, and dishes are also present (Tables 32 and 33). The collection also contains sherds of approximately nine CBGS storage and serving vessels, including a globular jar, large and small jars, lids, a rectangular jar, liquor bottles, and spouted, straight-sided, and wide-mouth jars.

Only six sherds of British earthenware were found. These consist of transfer-printed, painted, and molded designs, representing three vessels: a dish, platter, and saucer, respectively.

Other artifacts from this feature include a glass Chinese medicine vial and fragments of eight wine or champagne bottles. Seeds include Chinese date and Chinese olive, both of which are used for medicinal purposes, as well as bitter melon and winter melon, which are vegetables employed in Chinese soups and stews (see Hirn, Chapter 5).

This assemblage is taken to represent domestic refuse deposited by the Chinese households and businesses that occupied 507 I Street in the late 1850s, as well as a few surface artifacts that found their way into the pit fortuitously. An analysis of the ceramics is most revealing: the Chinese ceramics are notable for the duplication of forms within each of the three common decorative types. These items were found either whole, semi-whole, or as multiple mending sherds. This suggests that matched sets of ceramics were used and that these were discarded directly into Pit 719. In contrast, the British ceramics were small and unique in both form and decoration. This indicates that the pots of which they were parts had been discarded on the ground's surface and broken up by natural forces before ending up in the pit.

Pit 719 was beneath the footing of the wall of the lime warehouse constructed at 135/137 I Street in around 1870. It was also beneath the footings of a brick outbuilding constructed at the rear of 133 I Street after the flooding of 1861-1862. As such it predates both these events. The Sang Lee Company is not listed in Sacramento after the flood. It is possible that their refuse was cleaned up and thrown into this pit prior to the construction of the brick outbuilding and concurrent with a change of use at 133 I Street in the early 1860s. This corresponds with the arrival of the railroad and the removal of many Chinese businesses from the I Street between 5th and 6th. Their community became concentrated in the less desirable neighborhood between 2nd and 5th. This deposit would be associated with the later activities of the Sang Lee Company.

Sacramento Federal Courthouse: HI56 Block

507 I Street: north half

Anthropological Studies Center, Sonoma State University

drawn by C. Praetzel 12/94, digitized by B. Eastman/ 702.dwg

Figure 26. 507 I Street, Area 3 north, site plan

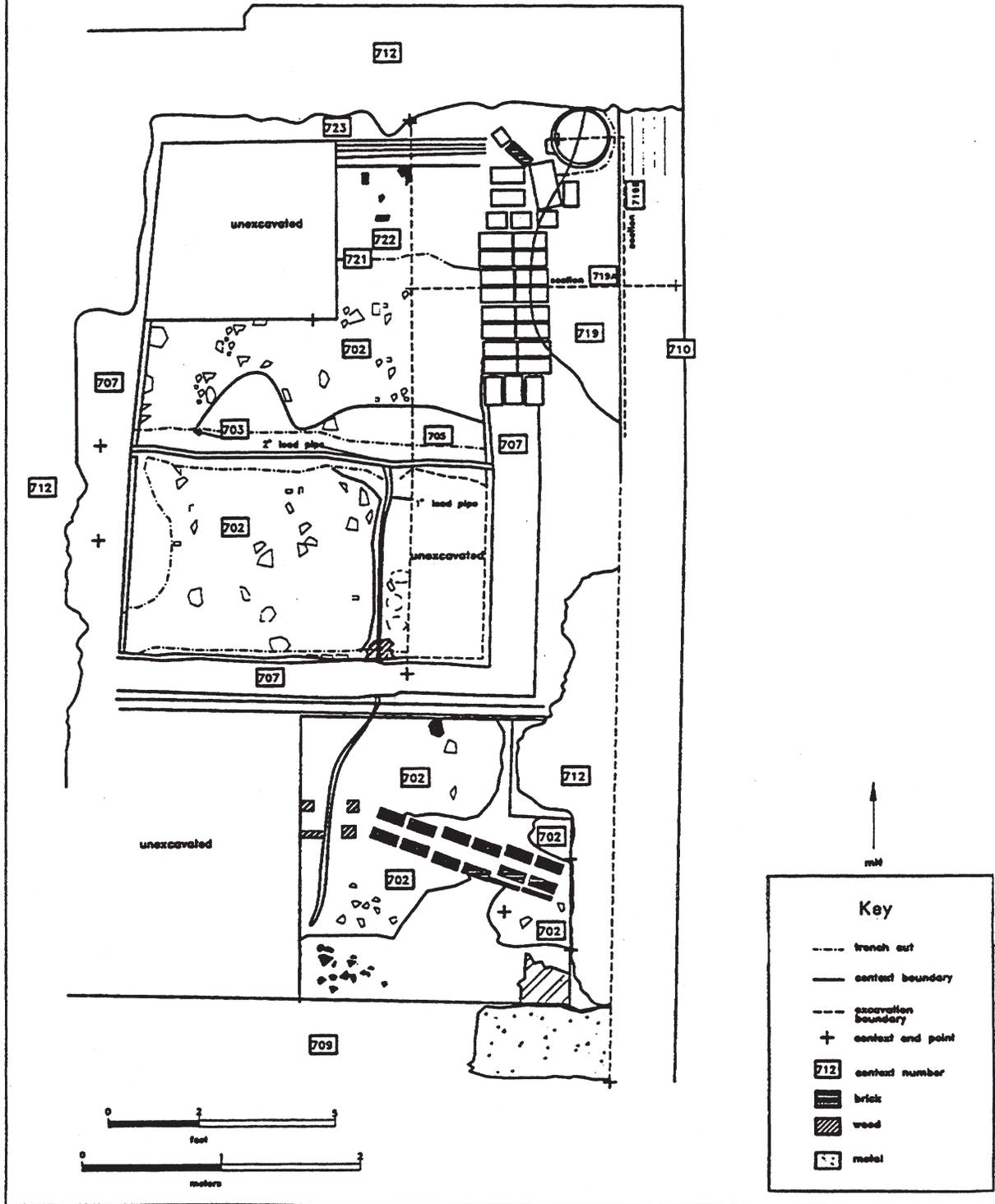
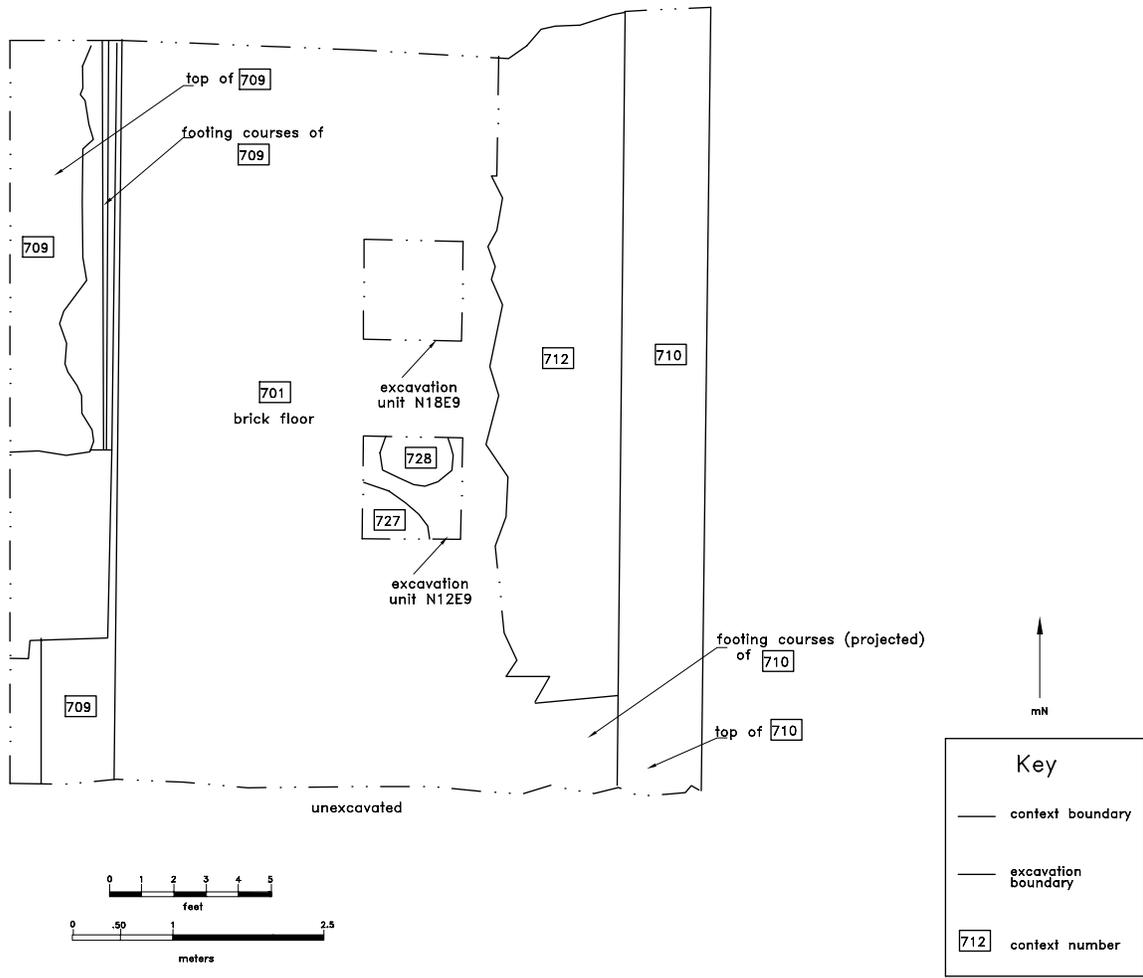


Figure 27. 507 I Street, Area 3 south site plan

Sacramento Federal Courthouse: HI56 Block
507 I Street : south half
Anthropological Studies Center, Sonoma State University
drawn by C. Praetzel 12/94, digitized by B. Eastman/ sac\702p.dwg



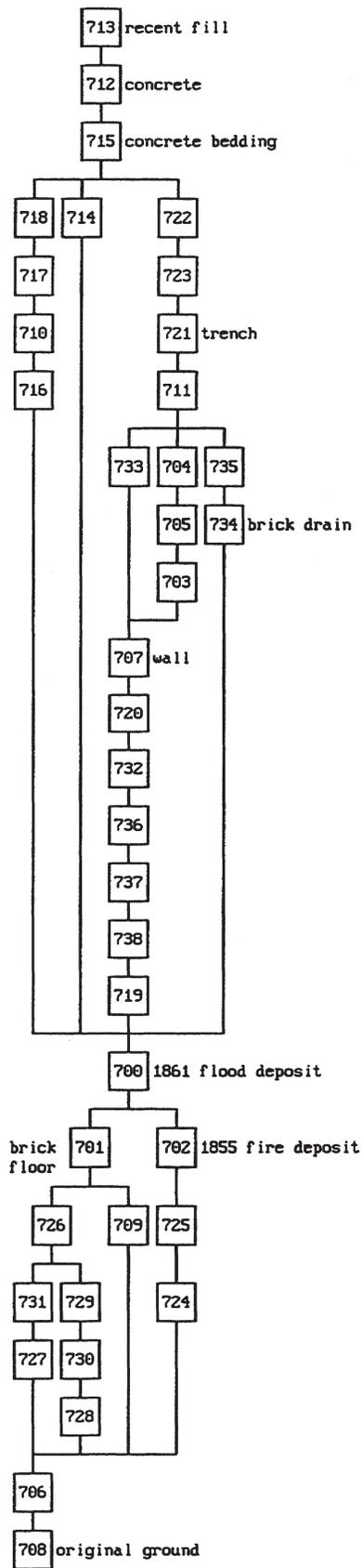


Figure 28. Harris Matrix, 507 I Street



Figure 29. The basement floor of Gallup's building. Only two months after fire had razed the frame structure at 507 I Street, Timothy Gallup had constructed a 20 by 40 foot brick building with a herringbone-pattern brick floor in which the Sang Lee Company carried on their business. (Foreground scale = 3 feet; background scale = 6 feet)

Sacramento Federal Courthouse: H156 Block
 507 I Street: Pit 719, cross-section
 Anthropological Studies Center, Sonoma State University
 drawn by K. Warren 12/94, digitized by B. Eastman/ sac\pit719.dwg

Figure 30. Pit 719 cross-section

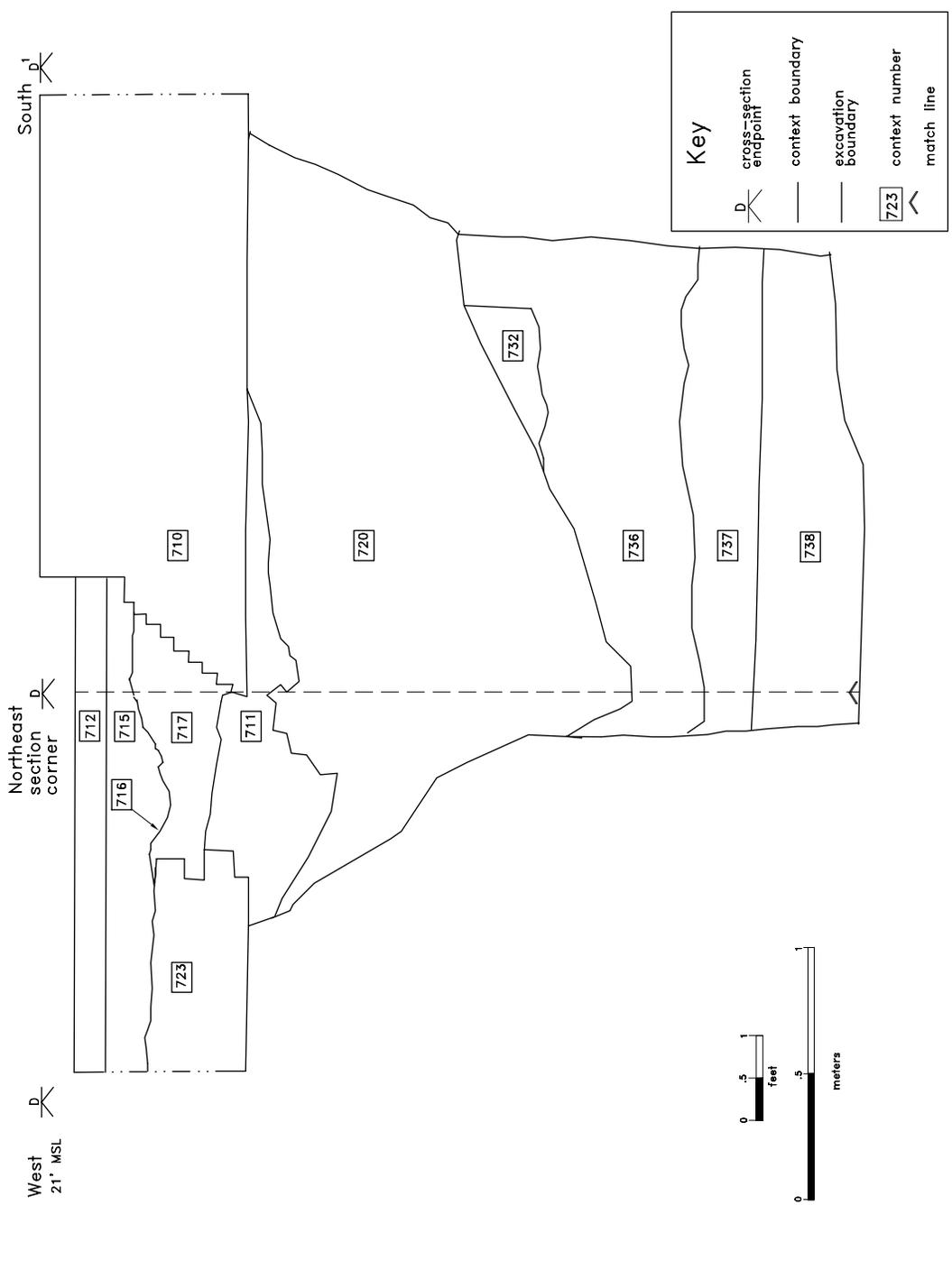




Figure 31. Excavation of Pit 719. *This large, deep pit was located on the property of the Sang Lee Company. The Company may have gone out of business after the flood of 1861 and the contents of their building dumped into the pit by their successors. Unfortunately, much of the pit was covered by the intersection of two large brick walls. (Scale = 6 feet)*



Figure 32. Josiah Gallup, 1826-1858. *Connecticut-born, Gallup moved to Sacramento in 1850 where he acted as translator, commission agent, and representative for several Chinese companies in their dealings with local authorities. Tragically, Gallup died in Sacramento of cholera at the age of 31. (Gallup Manuscript Collection, California State Library)*

Table 28. Context 702 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Context 702

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Bamboo	Medium Bowl	1/ 1
Celadon	Medium Bowl	10/ 1
Double Happiness	Medium Bowl	11/ 2
Four Flowers	Dish	3/ 1
Four Flowers	Tiny Cup	2/ 1
Four Flowers?	Small Bowl	1/ 1
Overglaze Polychrome	Bowl	2/ 1
Stylized Vine	Small Bowl	15/ 2
Underglaze Blue	Dish	3/ 1
Underglaze Blue	Medium Dish	3/ 3
<i>Subtotal</i>		<i>51/14</i>
Undecorated	Various	8/ 1
<i>Subtotal</i>		<i>8/ 1</i>
<i>Non-Chinese Ceramics</i>		
Blue Transfer Print	Flat	1/ 1
Flow Blue	Soup Plate	6/ 1
Molded	Flat	1/ 1
Molded	Hollow	1/ 1
Molded (Floral)	Saucer	1/ 1
Molded (Paneled)	Flat	1/ 1
Molded (Paneled)	Soup Plate	1/ 1
<i>Subtotal</i>		<i>12/ 7</i>
Undecorated	Various	18/ 1
<i>Subtotal</i>		<i>18/ 1</i>
<i>Total</i>		<i>89/23</i>

Table 29. Date and Origin of Marked Ceramic and Glass Items for Context 702, HI56 Block Sacramento

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat #	MNI
CP Medium Bowl		China		Undefined		702.02-1	1
CP Medium Bowl		China		JI LI		702.04-1	2
WIE Soup Plate	TJ & J Mayer	England	1843-1855	YER;...VED/...TONE/...NA	G:424; P et al.:52	702.15-4	2

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzellis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzellis and Praetzellis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzellis et al. 1983	W1	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

Table 30. Artifact Summary for Context 702, HI56 Block Sacramento

Category	Type	Description	N/MNI
<i>Activities</i>			
Commerce	Coin	Copper-Alloy <i>Tongbao</i>	2/2
Writing	-	Slate Tablet	1/1
<i>Activities Subtotal</i>			3(.4%)/3(1.9 %)
<i>Domestic</i>			
Food	Container	Glass Soda/Mineral Water	1/1
Food Prep/Consumption	-	CP Hollow	8/1
Food Prep/Consumption	-	WIE Hollow	1/1
Food Prep/Consumption	Container	CBGS Stewpot	2/1
Food Prep/Consumption	Serving	CP Bowl	2/1
Food Prep/Consumption	Serving	CP Dish	6/2
Food Prep/Consumption	Serving	CP Medium Dish	3/3
Food Prep/Consumption	Tableware	CP Medium Bowl	22/4
Food Prep/Consumption	Tableware	CP Small Bowl	16/3
Food Prep/Consumption	Tableware	CP Tiny Cup	2/1
Food Prep/Consumption	Tableware	WIE Flat	3/3
Food Prep/Consumption	Tableware	WIE Saucer	1/1
Food Prep/Consumption	Tableware	WIE Soup Plate	25/3
Food Storage	Closure	CBGS Lid	22/3
Food Storage	Closure	CGGS Lid	25/2
Food Storage	Closure	CS Lid	3/1
Food Storage	Container	CBGS Globular Jar	184/4
Food Storage	Container	CGGS Globular Jar	3/1
Food Storage	Container	CBGS Large Storage Vessel	187/1
Food Storage	Container	CS Large Storage Vessel	6/1
Food Storage	Container	CBGS Recessed-Rim Jar	2/1
Food Storage	Container	CBGS Small Storage Vessel	52/1
Food Storage	Container	CBGS Spouted Jar	16/4
Food Storage	Container	CBGS Straight-Sided Jar	24/1
Food Storage	Container	CBGS Wide Mouth Jar	17/2
Furnishings	-	Ferrous Tack	82/82
Heating and Lighting	-	Coke Fuel	3/1
Heating and Lighting	Lamp	Glass Chimney	1/1
<i>Domestic Subtotal</i>			719(86.5%)/131(81.9%)
<i>Indefinite Use</i>			
-	-	Stoneware Hollow	1/1
-	-	Copper-Alloy Indefinite	1/1
-	-	Porcelain Indefinite	1/1
-	-	Ferrous Wire	2/1
-	Container	Stoneware Bottle	1/1
-	Container	Glass Bottle	8/1
-	Container	Ferrous Can	6/1
<i>Indefinite Use Subtotal</i>			20(2.4%)/7(4.4 %)
<i>Industrial</i>			
-	Container	Stoneware Crucible	6/1
<i>Industrial Subtotal</i>			6(.7%)/1(.6%)

Table 30. Artifact Summary for Context 702, HI56 Block Sacramento

Category	Type	Description	N/MNI
Context 702, continued			
<i>Personal</i>			
-	-	Copper-Alloy Bell/Button	1/1
Clothing	Fastener	Bone Button	1/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	46/4
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	14/1
Indulgences-Tobacco	-	Clay Pipe	1/1
<i>Personal Subtotal</i>			63(7.6%)/8(5.0 %)
<i>Structural</i>			
Hardware	-	Ferrous Hinge	1/1
Hardware	Fastener	Ferrous Nail-Cut	16/6
Hardware	Fastener	Ferrous Spike	1/1
Material	Window	Glass Pane	1/1
<i>Structural Subtotal</i>			19(2.3%)/9(5.6 %)
<i>Undefined</i>			
-	-	Glass Undefined	1/1
<i>Undefined Subtotal</i>			1(.1%)/1(.6%)
Total Context 702			831/160

Table 31. Artifact Summary for Pit 719, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 709, 720, 732, 736, 737, and 738			
<i>Activities</i>			
Coin	-	Silver Dime	1/1
Commerce	Coin	Copper-Alloy <i>Tongbao</i>	1/1
Writing	-	Slate Pencil	1/1
<i>Activities Subtotal</i>			3(.3%)/3(.4%)
<i>Domestic</i>			
Food	-	Egg Shell	3/1
Food	Container	Glass Soda/Mineral Water	5/1
Food Prep/Consumption	Serving	Porcelain Platter	3/1
Food Prep/Consumption	Serving	CP Bowl	13/2
Food Prep/Consumption	Serving	CP Dish	5/2
Food Prep/Consumption	Serving	CP Hollow	9/2
Food Prep/Consumption	Serving	CP Large Bowl	9/2
Food Prep/Consumption	Serving	CP Plate	11/6
Food Prep/Consumption	Serving	WIE Dish	1/1
Food Prep/Consumption	Tableware	CP Medium Bowl	45/8
Food Prep/Consumption	Tableware	CP Small Bowl or Cup	4/1
Food Prep/Consumption	Tableware	CP Spoon	6/5
Food Prep/Consumption	Tableware	CP Tiny Cup	1/1
Food Prep/Consumption	Tableware	WIE Plate	1/1
Food Prep/Consumption	Tableware	WIE Saucer	1/1
Food Prep/Consumption	Tableware	Glass Tumbler	1/1
Food Storage	Closure	CBGS Lid	3/1
Food Storage	Container	CBGS Globular Jar	6/1
Food Storage	Container	CBGS Rectangular Vessel	6/1
Food Storage	Container	CBGS Small Storage Vessel	1/1
Food Storage	Container	CBGS Spouted Jar	4/1
Food Storage	Container	CBGS Straight-Sided Jar	1/1
Food Storage	Container	CBGS Wide Mouth Jar	9/1
Furnishings	-	Ferrous Tack	17/17
<i>Domestic Subtotal</i>			165(18.3%)/60(8.4%)
<i>Faunal</i>			
-	-	Crab	2/1
<i>Faunal Subtotal</i>			2(.2%)/1(.1%)
<i>Floral</i>			
Seed	-	Seed Chinese Olive	2/2
Seed	-	Seed Fuzzy Gourd	1/1
Seed	-	Seed Undefined	3/3
Seed	-	Seed Watermelon	635/625
<i>Floral Subtotal</i>			641(71.1%)/631(87.9%)

Table 31. Artifact Summary for Pit 719, HI56 Block Sacramento

Category	Type	Description	N/MNI
Contexts 709, 720, 732, 736, 737, and 738			
<i>Indefinite Use</i>			
-	-	Fiber/Hair	1/1
-	-	Glass Indefinite	3/1
-	Container	Glass Bottle	1/1
-	Container	CBGS Large Storage Vessel	3/1
<i>Indefinite Use Subtotal</i>			8(.9%)/4(.6%)
<i>Industrial</i>			
-	-	Lead Solder	1/1
<i>Industrial Subtotal</i>			1(.1%)/1(.1%)
<i>Personal</i>			
Clothing	-	Coarse Hair Cloth	4/1
Grooming/Health	Container	Glass Medicine Vial	1/1
Indulgences-Alcohol	Container	CBGS Liquor Bottle	10/2
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	1/1
Indulgences-Alcohol	Container	Glass Alcoholic Beverage	1/1
Indulgences-Alcohol	Container	Glass Wine/Champagne	54/8
<i>Personal Subtotal</i>			71(7.9%)/14(1.9%)
<i>Structural</i>			
Hardware	-	Ceramic Door Knob	2/1
Hardware	-	Ferrous Hinge	1/1
Material	-	Clay Brick	7/1
Material	-	Flagstone	1/1
<i>Structural Subtotal</i>			11(1.2%)/4(.6%)
Total Contexts 709, 720, 732, 736, 737, and 738			902/718

Table 32. Pit 719 Ceramic Tableware and Serving Vessels, HI56 Block Sacramento

Contexts 709, 720, 732, 736, 737, and 738

Decoration	Form	N/MNI
<i>Chinese Ceramics</i>		
Celadon	Bowl	13/ 2
Celadon	Medium Bowl	12/ 2
Celadon	Plate	7/ 3
Celadon	Spoon	6/ 5
Celadon	Tiny Cup	1/ 1
Double Happiness	Medium Bowl	22/ 2
Four Flowers	Hollow	9/ 2
Four Flowers	Large Bowl	9/ 2
Four Flowers	Medium Bowl	6/ 2
Four Flowers	Plate	2/ 1
Overglaze Polychrome	Medium Bowl	5/ 2
Overglaze Polychrome	Plate	2/ 2
Overglaze Polychrome	Small Bowl or Cup	4/ 1
Underglaze Blue	Dish	5/ 2
<i>Subtotal</i>		<i>103/29</i>
<i>Non-Chinese Ceramics</i>		
Blue Transfer Print (Floral)	Dish	1/ 1
Painted (Floral)	Platter	3/ 1
Molded (Paneled)	Saucer	1/ 1
<i>Subtotal</i>		<i>5/ 3</i>
Undecorated	Various	1/ 1
<i>Subtotal</i>		<i>1/ 1</i>
<i>Total</i>		<i>109/33</i>

Table 33. Date and Origin of Marked Ceramic and Glass Items for Pit 719, HI56 Block Sacramento

Contexts 720, 709, 732, 736, 737, and 738

Mat/Form	Manufacturer	Origin	Date	Mark	Reference	Cat#	MNI
CP Bowl		China		YONG		720-1	2
CP Medium Bowl		China		DE LI//XIN LI		720-3	2
CP Medium Bowl		China		Sign of Longevity		720-5	2
CP Large Bowl		China		Sign of Longevity		720-6	2
CP Plate		China		Undefined		720-7	1
CP Plate		China		Sign of Longevity		720-8	1
CP Plate		China		YONG		720-2	1
CP Plate		China		(pnt: Illegible (enr) YONG		737-1	2
CP Hollow		China		Sign of longevity		720-9	2
CP Small Bowl/Cup		China		ZAI AI		720-11	1
CP Spoon		China		(Illegible)		720-13	4

Reference Abbreviations:

C	Cushion 1976	M & M	Markota and Markota 1994	S	Schulz et al. 1980
F	Fike 1987	P	Praetzelis et al. 1980	T	Thorn 1947
G	Godden 1991	P & P	Praetzelis and Praetzelis 1979	W	Wetherbee 1980
Gn	Godden 1980	P et al.	Praetzelis et al. 1983	Wl	Williams 1978
L	Lunn 1981			Z	Zumwalt 1980

CHAPTER 5 SPECIAL STUDIES

PREVIOUSLY UNDOCUMENTED CHINESE ARTIFACTS

by Virginia R. Hellmann and Jeannie K. Yang

INTRODUCTION

Chinese artifacts seem to fascinate the historical archaeologist. Whether the object in question is a ceramic sherd, an opium pipe-bowl, or a coin, all have distinctive designs and a sense of “otherness.” The Sacramento HI56 collection contains a wide variety of Chinese ceramics, medicine vials, opium-related materials, coins, locks, gaming pieces, and decorative items. In this section, we examine artifacts that appear to be either unique to this site or previously undocumented in the Overseas Chinese archaeological literature.

CERAMICS

Approximately 15% of the ceramic assemblage consists of unique or unusual vessel forms or decorative types. At least six apparently new vessel forms have been identified: two are porcelain and the remainder have been classified as Chinese Brown Glazed Stoneware [CBGS]. The high ratio of new ceramic vessel forms from this site is noteworthy because the ceramic assemblages from Overseas Chinese sites tend to be comprised of examples of the same small number of patterns.

The artifacts in the present collection come from well-dated and defined archaeological contexts, where deposits were encapsulated between and below the historically documented 1861 flood and the 1855 fire layers, or within discrete features. Due to repeated flooding and fires, some of the ceramics are quite small and/or burnt. This sometimes made it difficult to identify particular vessel forms or decorations. On the other hand, well-stratified features yielded some interesting whole and reconstructible vessels. The early occupation date of this site may explain the presence of these unusual and previously undocumented Chinese ceramic vessels and patterns. While the majority of the ceramics appear to be either mass-produced tablewares or utilitarian stoneware foodstuff/liquor containers marketed for the Overseas Chinese community, there is also a notable presence of high-quality porcelain ceramics.

Porcelain

A large archaeological literature has been published over the past 20 years on Overseas Chinese archaeological sites and the materials unearthed by excavations and historical studies.¹ For this reason, little discussion is necessary regarding the well-documented Chinese tableware decorative types such as Double Happiness, Bamboo,

¹ For further information on Overseas Chinese archaeological investigations, see Praetzellis and Praetzellis 1990c:15.

Celadon, and Four Flowers, which dominate the Chinese porcelain collection from this site. This section, instead, focuses on the ceramic types that the authors were unable to locate in the archaeological literature. The three new Chinese porcelain artifact types identified from this study are defined by decoration, whereas the four new CBGS artifact types are defined by vessel form. The terminology used for the various forms of Chinese porcelain tableware is from Costello and Maniery (1988). Table 34 depicts Chinese marks on porcelain artifacts from the HI56 Block site.

Celadon

Celadon is a popular Chinese porcelain ceramic that is frequently found on Overseas Chinese archaeological sites (Chace 1976; Olsen 1978; Praetzellis and Praetzellis 1990c). A variety of forms are represented in this collection: plates, medium bowls, spoons, and tiny cups. Most noteworthy were two Celadon plates (720-2 & 737-1) and one medium-sized bowl (720-1) that were recovered from Pit 719, a deposit that postdates 1861. The same Chinese character, 永 (*yeung*, ‘forever’), was found etched into the eating surfaces of each of these vessels (see Figures 33 and 34).² It has been proposed that the etched characters indicate personal ownership of a vessel at a time when ceramic wares were difficult to obtain. Similar etched characters have been found on Chinese porcelain tableware recovered from Weaverville, California (Brott 1982:129-130) and other archaeological sites.

Blue-on-White

Chinese porcelain classified as blue-on-white include Double Happiness, Bamboo (Figure 35), ginger jars, Chinese Export Porcelain, and Simple Flower designs (Felton, Lortie, and Schulz 1984:37). All of these patterns are represented in this collection, with Double Happiness and Bamboo medium rice bowls the most common. It should be noted that a variety of stylized designs of the Bamboo pattern are present. A complete medium dish with a highly stylized variation of Bamboo was found in the pre-1855 fire layer (954.1-4, Figure 36). In the past, archaeologists referred to this type as “Three Circles and a Dragonfly” (Chace 1976:523).

Other designs make up a small proportion of this collection. A minimum number of items [MNI] for these decorated types was determined for the ginger jar (1), Chinese Export Porcelain (2), and a Simple Flower teapot (1) along with several tiny cups of the latter design.

² The Chinese transliterations in this paper are in Mandarin Chinese using the Pinyin system, except where noted. Pinyin was chosen because it is the official system in China for romanizing documents.

Table 34. Chinese marks on porcelain artifacts

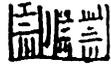
Catalog #	Embossment	Transliteration	Translation	Form
5-1			[Undefined]	Tiny Cup
5-3	價 器		[Undefined]	Medium Bowl
5-9	價 器	Jia//[Sign of Longevity]	Price//Sign of Longevity	Small Dish
18-6			[Undefined]	Tiny cup
18-7			[Undefined]	Dish or Plate
59-7	声 枕	Xen Zhen	Sound Pillow	Hollowware
60-4	正 和	Zheng He	Proper Harmony	Undefined Vessel
60-6			[Undefined]	Plate
63-4	永 利	Yeung Li	Forever Profit	Plate

Table 34. Chinese marks on porcelain artifacts, continued

Catalog #	Embossment	Transliteration	Translation	Form
86-1			[Undefined]	Medium Bowl
96-3	永和	Yeung He	Forever Harmony	Medium Bowl
105-2	如 昇	Ru Xing	As Prosperity	Medium Bowl
107-2	片清声 枕上闻 更明月//响因	...Pian Ching Xen// Zhen Xang Wen// Geng Ming Yue//Xiang [Undefined]	...Piece Clear Sound// Heard Above the Pillow// Clear Moon Again//Sound [Undefined]	Small Plate
107-3	间第一//采	Jian Di Yi//Cai	Space the First//Color	Small Cup
702.2-1			[Undefined]	Medium Bowl
702.4-1	吉利	Ji Li	Luck Profit	Medium Bowl

Table 34. Chinese marks on porcelain artifacts, continued

Catalog #	Embossment	Transliteration	Translation	Form
706.8-1			[Undefined]	Small Bowl
711-1			[Undefined]	Medium Bowl
			[Undefined] Spring	Medium Bowl
711-2			[Undefined]	Tiny Cup
			[Undefined]	Tiny Cup
711-4			Sign of Longevity	Small Dish
711-5	大家第婁香	Ren Jia...Di...[Illegible] Xiang	Household...Grade...[Illegible] Fragrant	Tiny Cup
711-13	寿 刊	Shuo Li	Longevity Profit	Medium Bowl
	生 玉	Sheng Yu	Life Jade	Medium Bowl

Table 34. Chinese marks on porcelain artifacts, continued

Catalog #	Embossment	Transliteration	Translation	Form
711-14	玉利	Yu Li	Jade Profit	Medium Bowl
	興利	Xing Li	Prosperity Profit	Medium Bowl
720-3	厚利//信利	De Li//Xin Li	Obtain Profit//Faith Profit	Medium Bowl
720-5			Sign of Longevity	Medium Bowl
720-6			Sign of Longevity	Large Bowl
720-8			Sign of Longevity	Plate
720-11	再愛//昌	Zai Ai...//[Illegible]	To Love Again...//[Illegible]	Small Bowl/Cup
720-13	立	[Undefined]	[Undefined]	Spoon
900-1	佳色風吹	Jia Se...Feng...	Beautiful Color...Wind...	Tiny Cup

Table 34. Chinese marks on porcelain artifacts, continued

Catalog #	Embossment	Transliteration	Translation	Form
901-1	季長//清芳上//客	Ji Chang//Ching Wei Shang//Ke	Season Long//Green.../Guest//To Be//Above	Dish
902-1	子和	[Undefined] He	[Undefined] Peace	Bowl
	興	...Xing	...Prosperity	Bowl
902-4	元興	Yuan Xing	Beginning Prosperity	Medium Bowl
902-5		Xian Feng Nian Zhi	Made In The Reign Of Xian Feng	Bowl
903.06-1	↓		[Undefined]	Sauce Pot
903.68-3	興玉	Xing Yu	Prosperity Jade	Medium Bowl
903.68-4			[Undefined]	Tiny Cup
903.68-6	只在此山中	Zhi Zai Ci Shan Zhong	Only In This Mountain	Spoon

Table 34. Chinese marks on porcelain artifacts, continued

Catalog #	Embossment	Transliteration	Translation	Form
913-3			Sign of Longevity	Bowl or Plate
954.2-1			[Undefined]	Medium Dish
963-1	元和	Yuan He	Beginning Peace	Medium Bowl

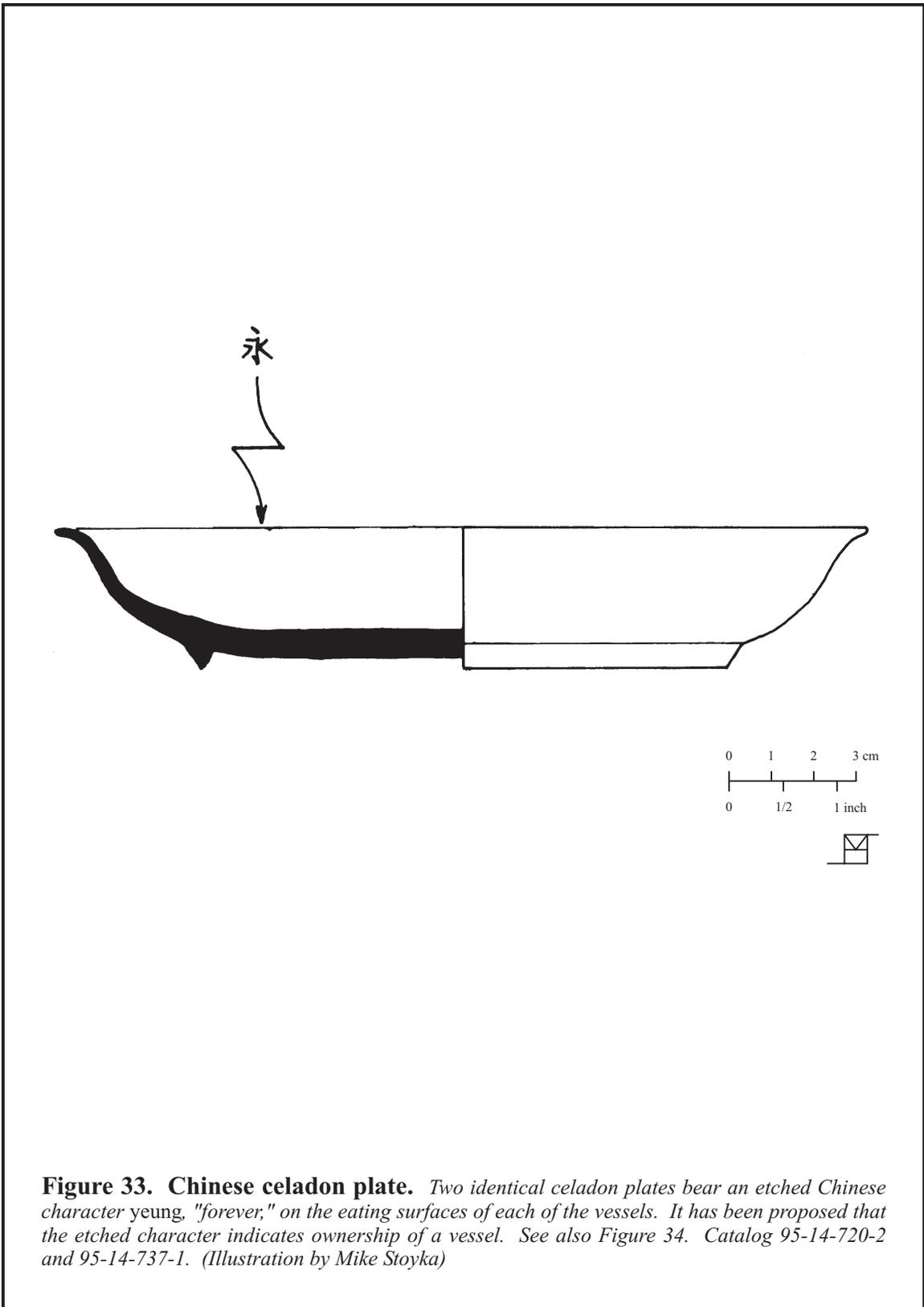
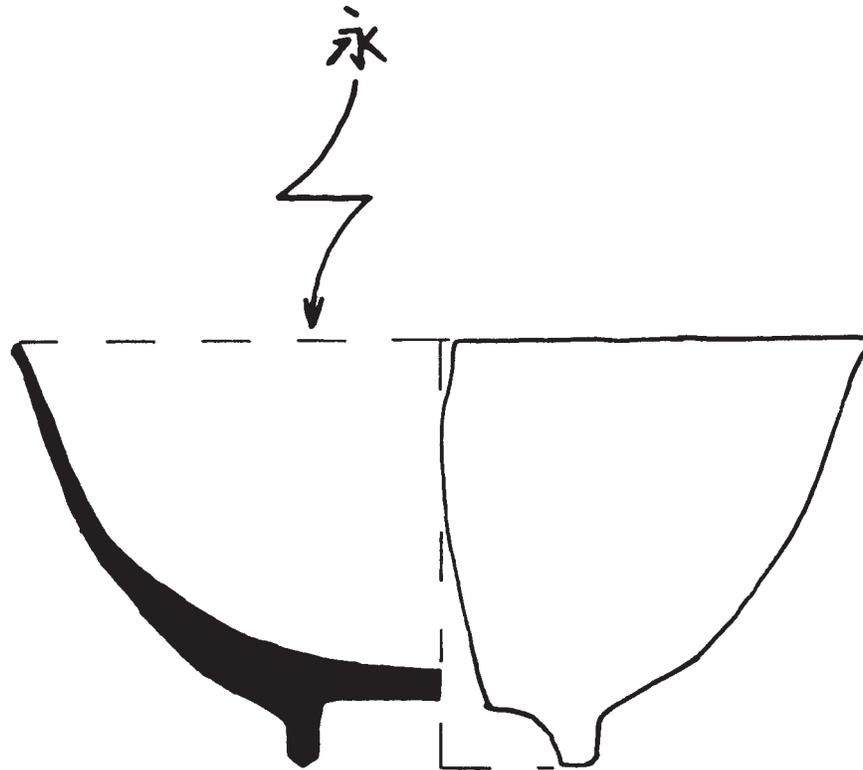


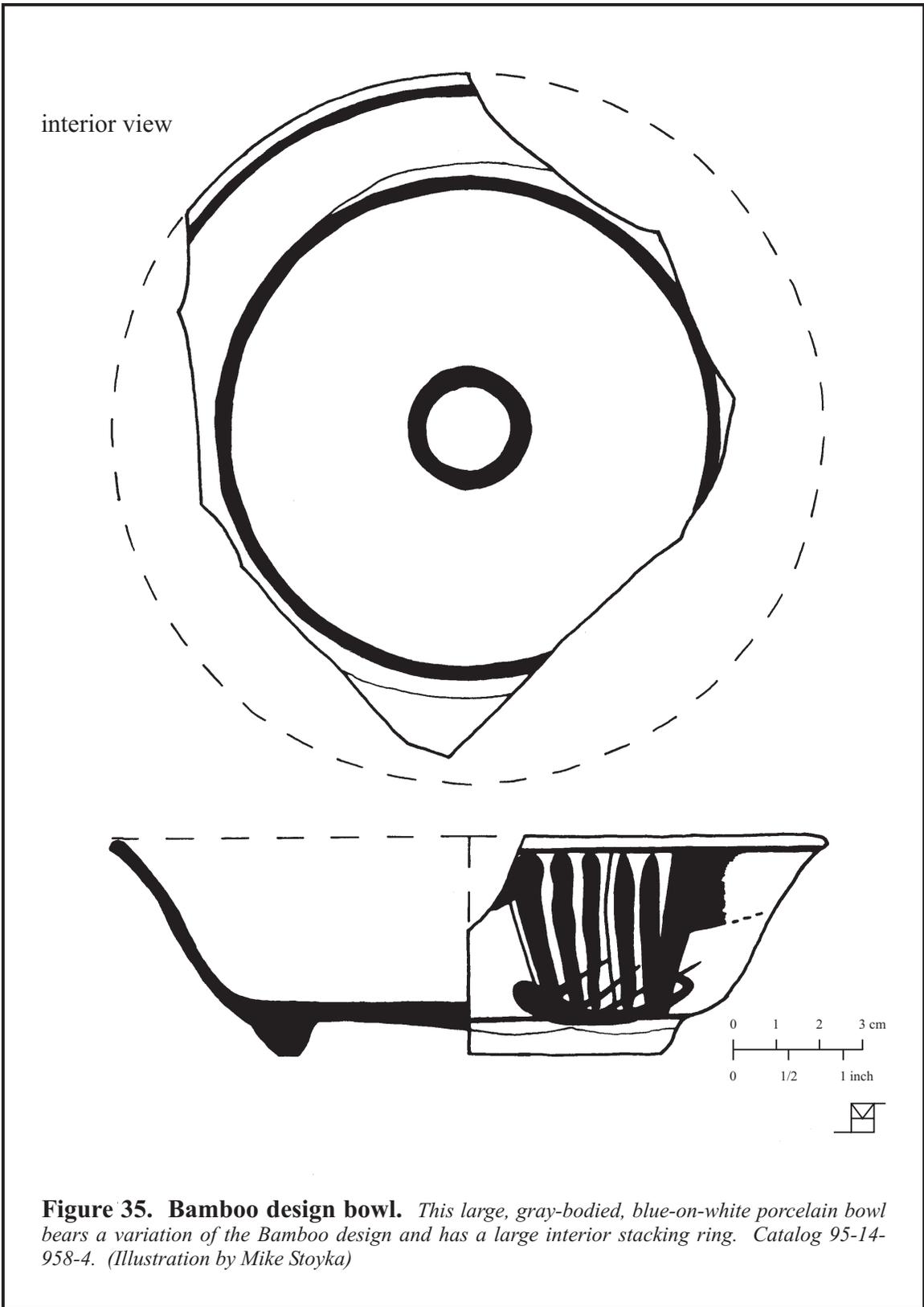
Figure 33. Chinese celadon plate. *Two identical celadon plates bear an etched Chinese character yeung, "forever;" on the eating surfaces of each of the vessels. It has been proposed that the etched character indicates ownership of a vessel. See also Figure 34. Catalog 95-14-720-2 and 95-14-737-1. (Illustration by Mike Stoyka)*



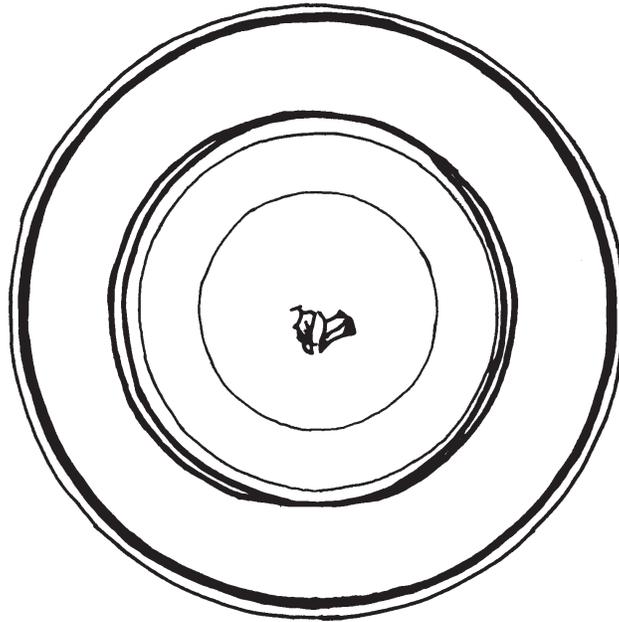
0 1 2 3 cm
0 1/2 1 inch



Figure 34. Chinese celadon bowl. *This celadon bowl has the Chinese character yeung, "forever," etched on the interior. See also Figure 33. Catalog 95-14-720-1. (Illustration by Mike Stoyka)*



interior view



exterior view

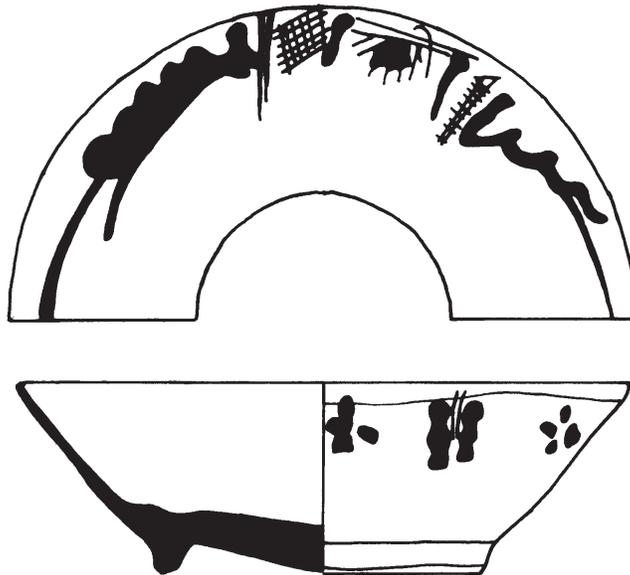


Figure 36. Bamboo design medium dish. *This Chinese porcelain vessel is decorated on the exterior with a highly stylized variation of the Bamboo design, which has been referred to elsewhere as "Three Circles and a Dragonfly." Catalog 95-14-954.01-4. (Illustration by Mike Stoyka)*

Peach and Fungus. A variation of the Peach and Fungus design, represented by two small bowls, was recovered from Context 903, the 1855 fire layer. Each of these small bowls has a continuous linear design on the exterior that is reminiscent of the vines on the Simple Flower pattern. Within the center of these vessels are different blue underglaze designs: one is highly stylized (706.8-1, Figure 39), while the second is an “X.”

In *Nonya Ware and Kitchen Ch'ing*, Willetts and Poh (1981:68) illustrate this design on two bowls. The peach and “fungus of immortality” are set in continuous panels. Lydon (1996) recovered a fragmented specimen of the type from the Rocks, an Overseas Chinese archaeological site in Australia. She depicts a complete example from an Idaho collection in that report (Lydon 1996:Color Plate 4, Appendix 1). It should be noted that the two small bowls found in the HI56 collection are different from those described above, in that the small bowls from HI56 are only decorated on the exterior, and the design is a highly stylized variation. The HI56 bowls are closer in design to the Idaho example.

Top Side. A second design (107-6 and 711-15) was designated “Top Side.” This name refers to the pattern on a small dish, which is a continuous band of blue underglaze around the rim of the vessel and is broken by a band of unglazed circular stacking rings. In the center of the dish there is a blue underglaze Chinese character 上 (*shàng*, ‘top’ or ‘above’) against a white glazed background. The exterior of this vessel has two blue underglaze stylized bats on opposing sides of the rim (Figure 40).

Two base and rim sherds (702.7-1 and 702-153) that mended to reveal half of a small dish were also found within the 1855 fire layer. This vessel is quite similar to the ‘Top Side’ pattern in terms of vessel form, glaze, and general design. In this case, however, the Chinese character in the center of the dish, although incomplete, is clearly different from the one mentioned previously. No name has been assigned because the vessel is not fully reconstructible. The reverse of the vessel contains at least three stylized bat motifs (Figure 41).

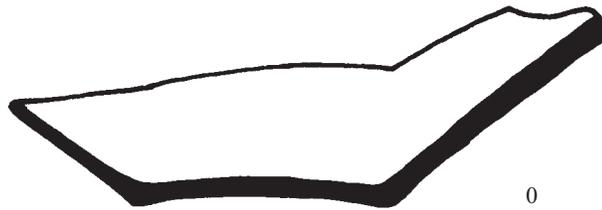
Cauldron and Bat. A final new vessel pattern within the blue-on-white category is present on a medium plate (107-4, Figure 42). This artifact has a distinct bluish green underglaze *dǐng* (鼎, a three- or four-legged cauldron) surmounted by a stylized bat in the center of the vessel. Eight blue underglaze wheel motifs appear around the inside rim of this vessel. The exterior bears a blue underglaze endless knot, a common symbol for longevity. Although the temptation to designate this new pattern as “Ding Bat” was great, the authors opted for the name “Cauldron and Bat.”

In addition to these reconstructible patterns of blue-on-white porcelain, fragments of six vessels were found that had insufficient design elements to determine the complete pattern. As with the Top Side and Cauldron and Bat patterns, a literature search was conducted to identify the names of these types, but without success. The designs on these sherds range from geometrical to floral. Several contained five-petaled lotus flowers (e.g., 958-5).

interior view



section

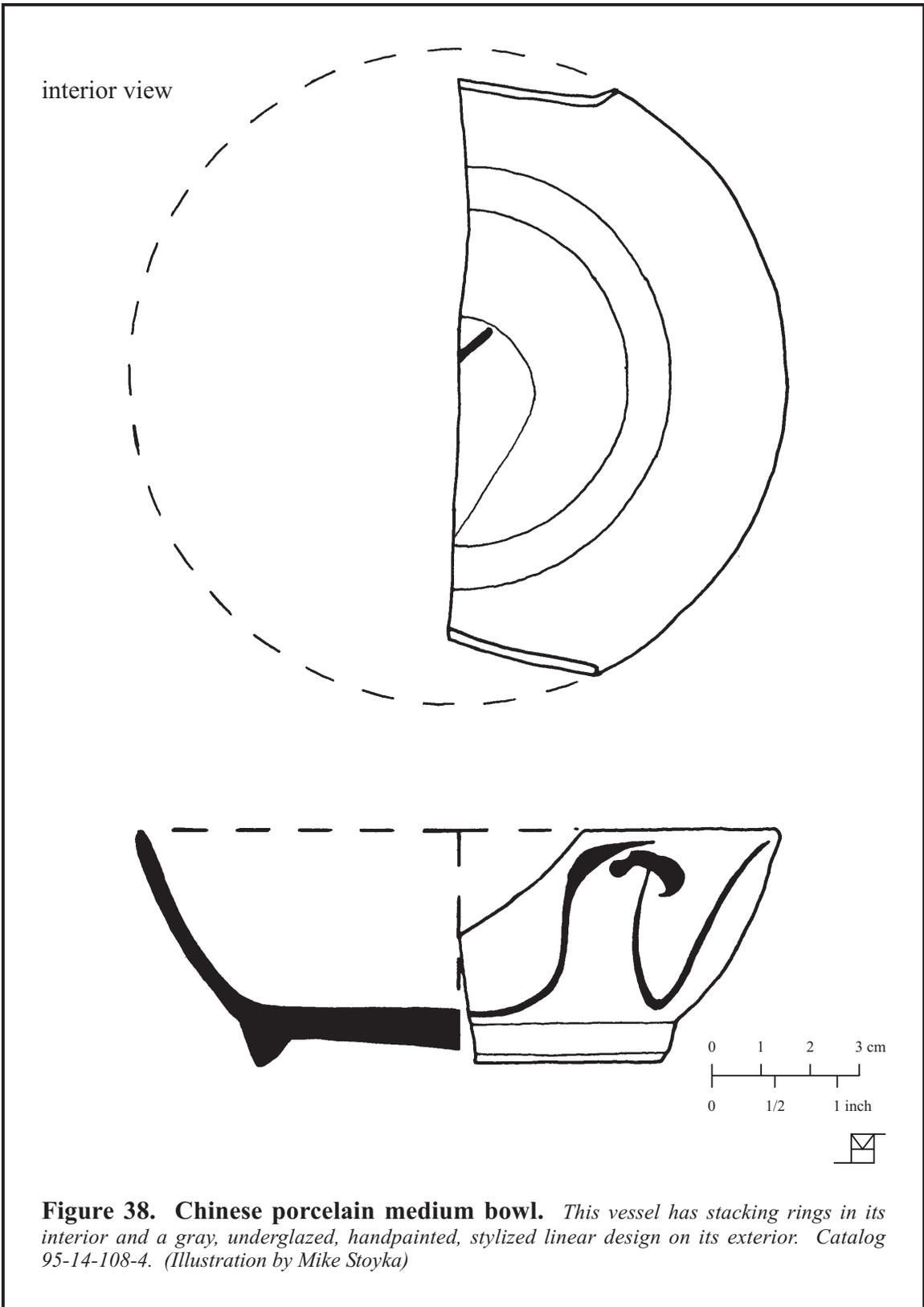


0 1 2 3 cm

0 1/2 1 inch



Figure 37. Chinese porcelain spoon. *This spoon has a blue underglaze stylized design on its interior. Catalog 95-14-954.01-8. (Illustration by Mike Stoyka)*



interior view

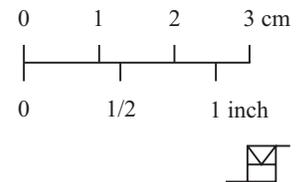
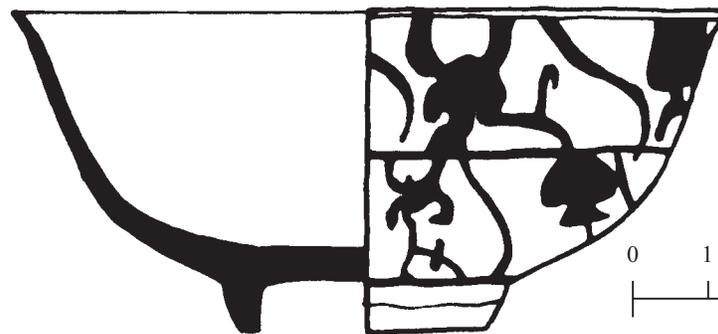
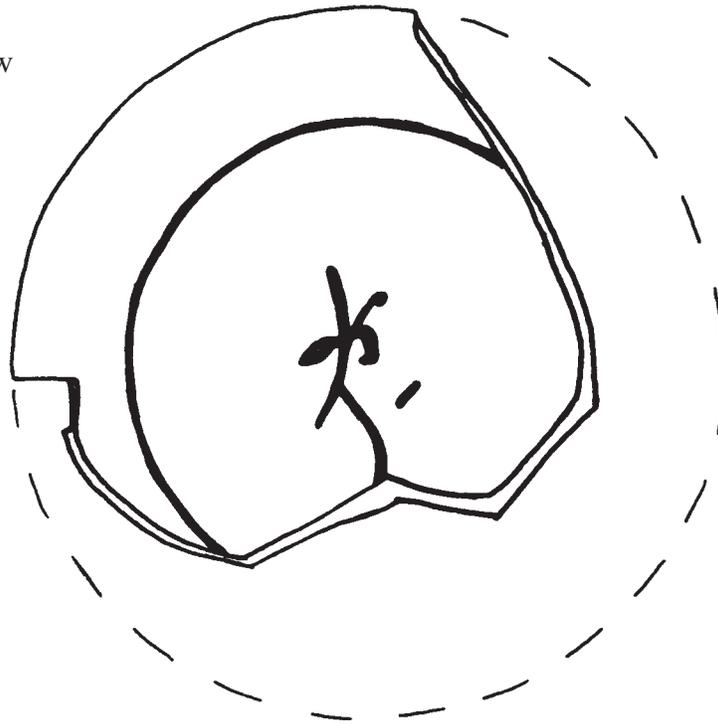
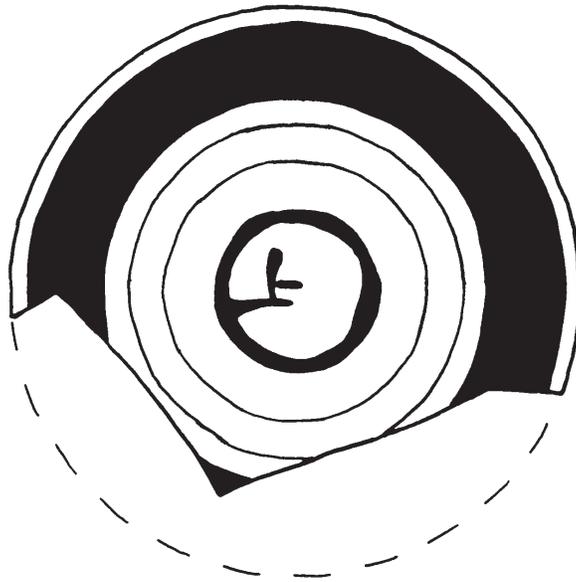
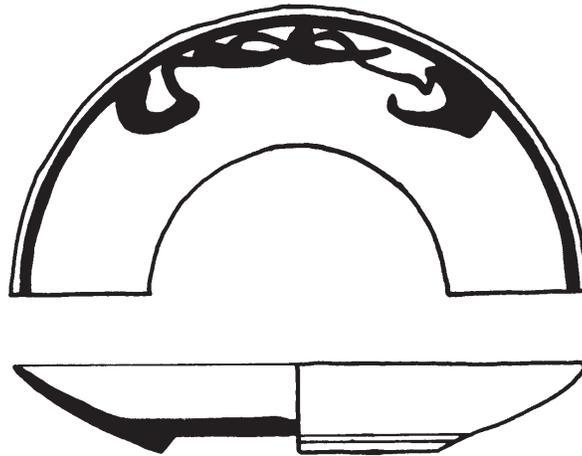


Figure 39. Peach and Fungus design bowl, a variation. *This Chinese blue-on-white porcelain bowl has continuous linear designs on the exterior that are reminiscent of the vines from the Simple Flower pattern. The interior of the bowl bears a stylized design. Catalog 95-14-706.8-1. (Illustration by Mike Stoyka)*

interior view



exterior view



0 1 2 3 cm
0 1/2 1 inch



Figure 40. "Top Side" design small dish. *This newly recognized type of Chinese, blue-on-white porcelain has a continuous band of blue underglaze around the rim of the vessel and a blue underglaze Chinese character (shàng) in the center, which reads "top." Catalog 95-14-704-6 and 95-14-711-15. (Illustration by Mike Stoyka)*

interior view

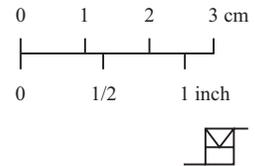
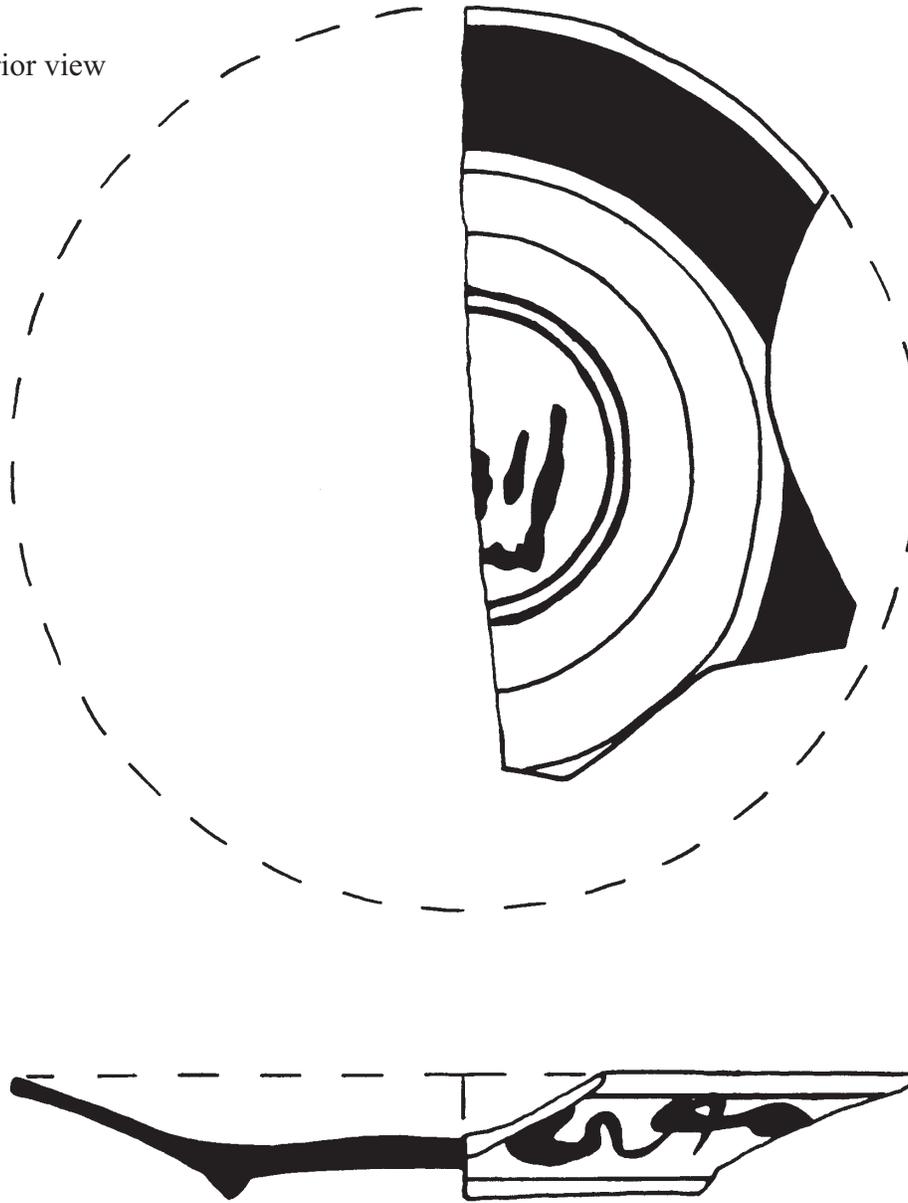


Figure 41. Blue-on-white porcelain dish. *This small Chinese dish has a design similar to the Top Side pattern. No name has been assigned, however, because the Chinese character in the interior of the dish is different from that in Top Side, and the vessel is not fully reconstructible. Catalog 95-14-702.15-3 and 95-14-702.7-1. (Illustration by Mike Stoyka)*

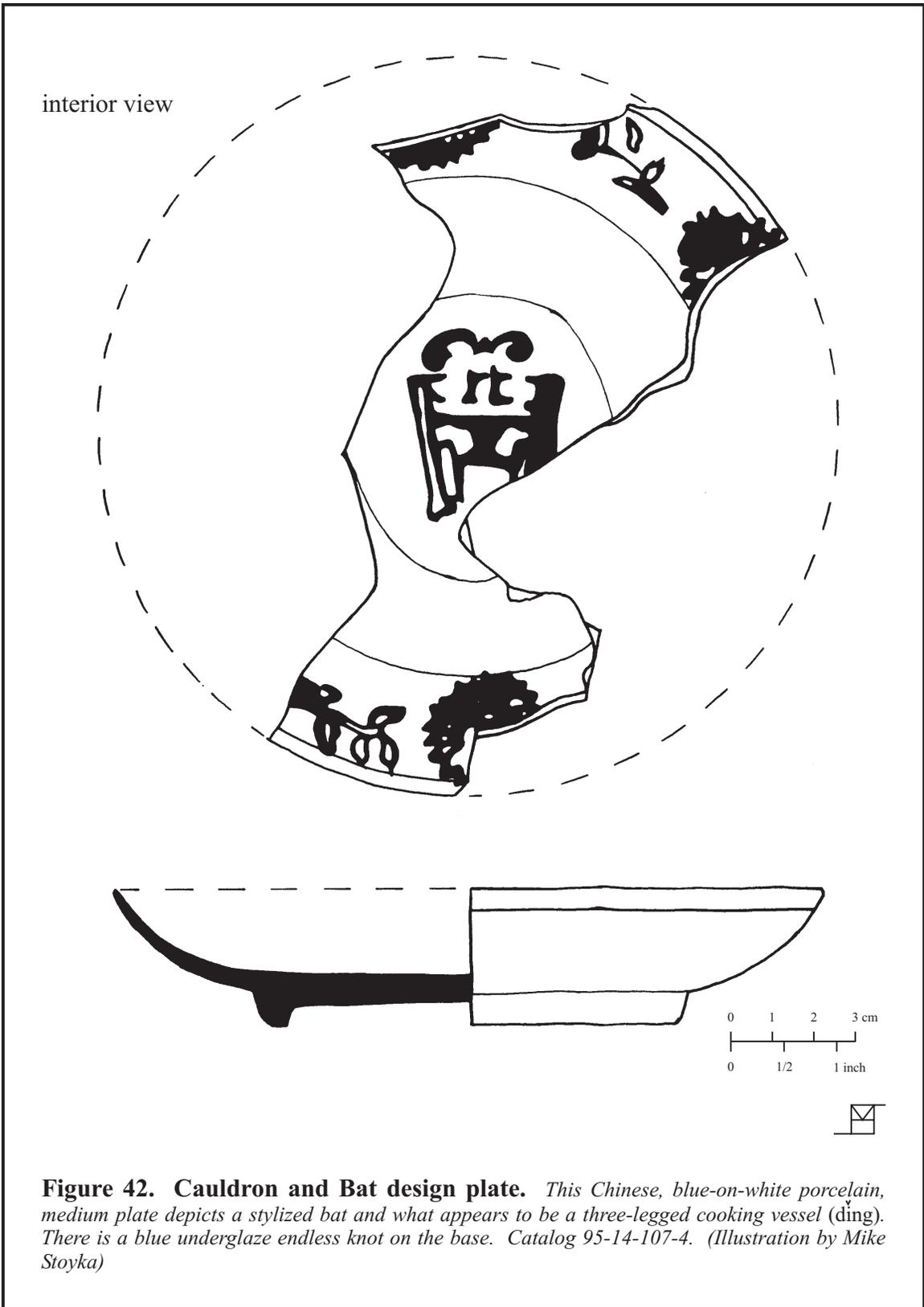


Figure 42. Cauldron and Bat design plate. *This Chinese, blue-on-white porcelain, medium plate depicts a stylized bat and what appears to be a three-legged cooking vessel (ding). There is a blue underglaze endless knot on the base. Catalog 95-14-107-4. (Illustration by Mike Stoyka)*

Polychrome

The most common polychrome pattern was Four Flowers, a popular Chinese utilitarian tableware not intended for European export (Praetzellis and Praetzellis 1990c:29). Four Flowers tableware appears in the broadest variety of forms and includes plates, large serving bowls, medium rice bowls, spoons, medium dishes, and tiny cups. Four Flowers vessels are often decorated with a stylized red overglaze sign of longevity (the endless knot) on the base, as well as the bat motif, representing happiness, on the exterior. One small Four Flowers bowl (902-5) from the 1861 flood layer has the reign mark 咸豐年製 (*xianfeng nianzhi*, ‘made in the reign of Xianfeng’) on its base indicating that the bowl was made between 1851 and 1861, during the reign of Emperor Xianfeng.

Southern Chinese Export Porcelain. There appear to be two grades of polychrome wares in the collection. We have distinguished these types based on the presence or absence of delicate, handpainted designs with elegant Chinese characters on the vessel, which we call “calligraphic.” The distinction between the two lies in the decoration of the vessel rather than any relative difference in refinement of the clay fabric. Chinese porcelain wares with calligraphic designs would have been produced by literate artisans who were also skilled in the craft of the decorative arts.

While the presence of Chinese characters on ceramic wares is not uncommon, most characters, as well as popular Chinese symbols such as the bat or the endless knot, seem to take on a highly stylized free-hand appearance. This may be related to the fact that many Chinese ceramics were mass-produced, and such stylized marks reflect the conditions of production and aesthetics of the various potters who produced them. In addition to the well-formed Chinese characters found on the calligraphic ceramic type, stylized red overglaze chop marks are present on four of five different vessel designs identified within this collection. The term “chop mark” refers to the stamped mark used by artisans to designate the design as their own work. It is highly likely that the handpainted Chinese characters on these calligraphic vessels are sections of poems. In this context, a chop mark would indicate authorship of the poem.

Among the polychrome porcelain sherds, the authors were able to identify several distinct vessels decorated with calligraphic and thinner, more delicate and precise, designs. Some representative forms of these higher grade vessels include plate, medium dish, lid/dish, small octagonal cup, and spoon. Based on the variety of forms, we infer that an entire set of such Southern Chinese Export Porcelain with the same pattern could have been available.

Three reconstructible or nearly complete vessels with these designs are worth describing in more detail. A medium dish (107-2) has a peach, another symbol of long life, in the center, fine handpainted yellowish/white bamboo leaves and stalk on two opposing sides, and fragmentary poem inscriptions on the remaining sides. The Chinese characters are followed by a red, stylized chop mark (Figure 43). A small octagonal cup (107-3) is decorated with fine handpainted yellowish/white flower and leaves (Figure 44). The Chinese characters are set off to the side, followed by a red, stylized chop mark. Lastly, the “poem spoon” (903.68-6, Figure 45) has a fine yellowish/white bamboo leaves and stalk design with Chinese characters 只在此山中 (*zhǐ zài cǐ shān zhōng*,

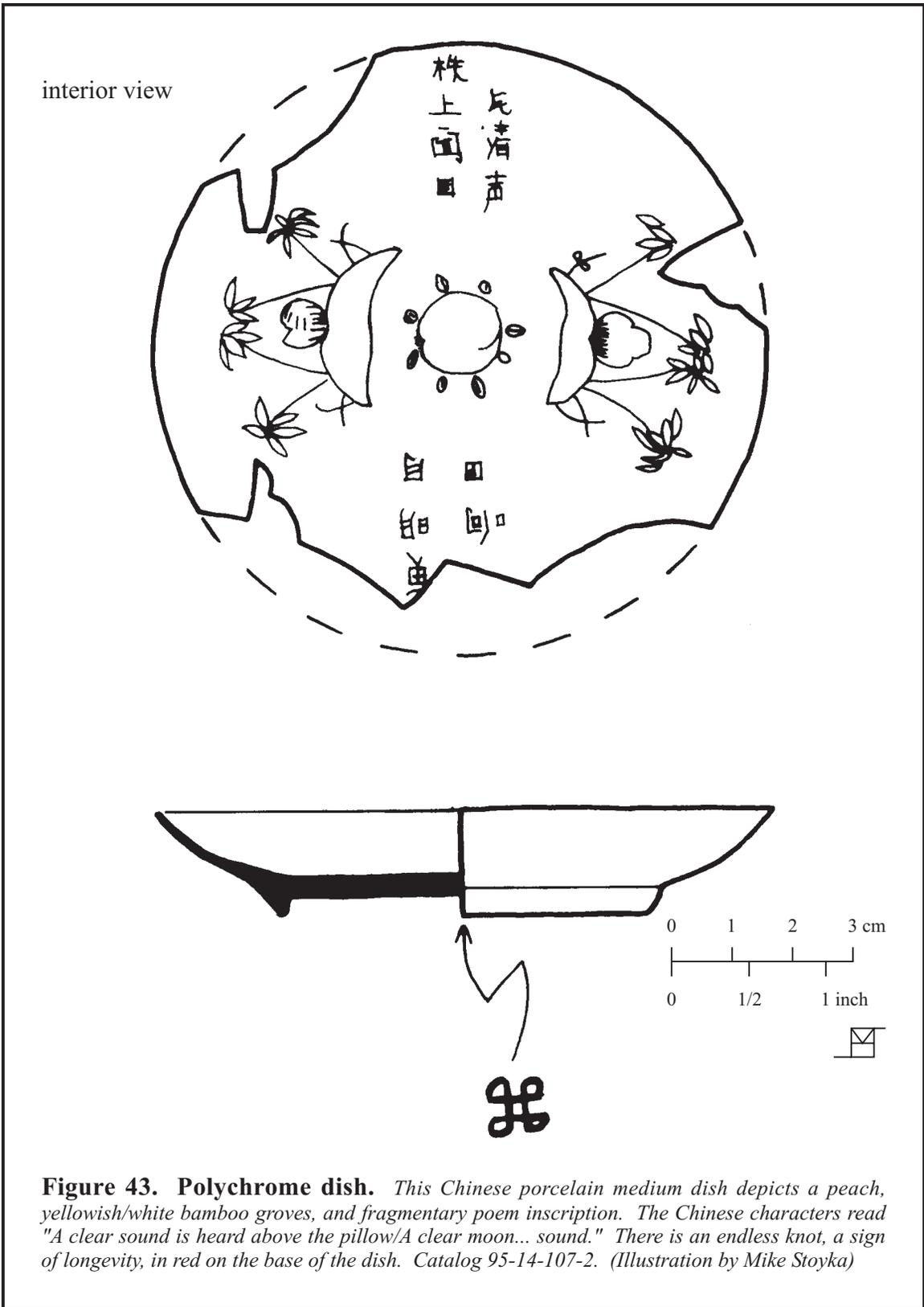
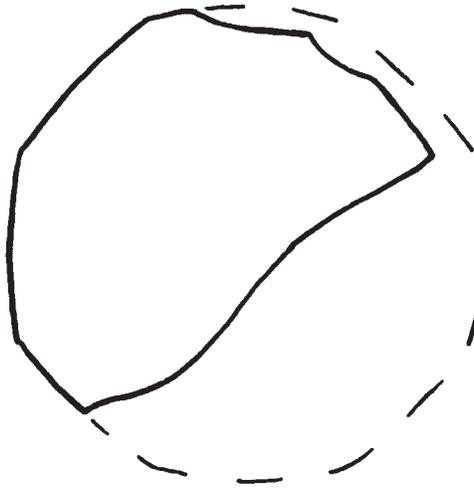
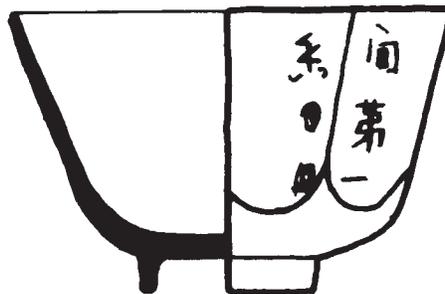
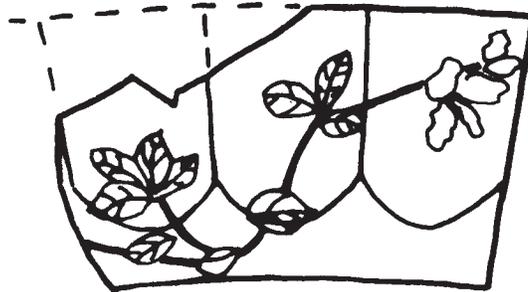


Figure 43. Polychrome dish. This Chinese porcelain medium dish depicts a peach, yellowish/white bamboo groves, and fragmentary poem inscription. The Chinese characters read "A clear sound is heard above the pillow/A clear moon... sound." There is an endless knot, a sign of longevity, in red on the base of the dish. Catalog 95-14-107-2. (Illustration by Mike Stoyka)

plan view



exterior view



0 1 2 3 cm
0 1/2 1 inch



Figure 44. Polychrome cup. *This small octagonal porcelain cup is decorated with yellowish/white flower and leaves. The Chinese characters read "The first color in..." followed by a red, stylized chop mark. Catalog 95-14-107-3. (Illustration by Mike Stoyka)*

interior view



section

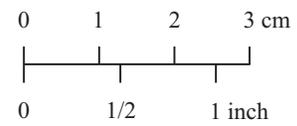


Figure 45. Polychrome porcelain spoon. This Chinese artifact has been dubbed the "poem spoon" because it bears the third verse from a famous Tang Dynasty (618-906 A.D.) Chinese poem, accompanied by the yellowish/white bamboo grove. The Chinese characters read "Only in this mountain." Catalog 95-14-903.68-6. (Illustration by Mike Stoyka)

“only in this mountain”). The five characters make up the third verse in a famous Tang Dynasty (A.D. 618-906) poem written by Jia Dao, in which the poet writes about his unfruitful search for a hermit in a mountain:

*I asked a boy underneath the pine tree,
He said his teacher had gone to pick herbs for medicine.
“He’s only in this mountain,
But the clouds are so dense that I don’t know where he is.”*

松下問童子
言師採藥去
只在此山中
雲深不知處

The bamboo pattern encompasses nearly all of the spoon’s eating surface; the poem takes up the remainder. The authors speculate that this may have been one of a set of four spoons, each bearing one verse from the four-line poem.

Lotus-like. Within the Southern Chinese Export Porcelain category, some polychrome sherds have lotus-like designs. The items that bear these patterns are incomplete vessels and come in the form of medium bowls and plates. Two plates (913-3, 960-24) each have a stylized red endless knot on the base. These sherds have designs in thick, dense handpainted enamel. The base sherds from the plates have a peach in the center, which is encircled by pinkish white, flowing lotus-like plants that blend into a green background. The bowl fragments are rim sherds with handpainted overglaze on the exterior of the vessels. The effect of grass is created by the two shades of green enamel with fine black lines running throughout. Close to the midsection of the vessels, pinkish white, lotus-like stalks rise up towards and into the green area.

The most important element of this design is the lotus. The lotus flower is associated with the Buddha and other revered figures in the Buddhist and Taoist traditions, who are often pictured sitting on a seat made up of lotus flowers. As the lotus flower rises above the muddy pond water in which it grows, in traditional Chinese culture, this flower has come to represent the superior person’s ability to separate oneself from the corruption of the world.

Several sherds were recovered that could not be reconstructed or located in the Overseas Chinese literature. A base sherd (731-1) recovered beneath the 1855 burn layer has an overglaze green, handpainted, high foot rim with fine, gilded double horizontal lines above and below the green band. In the interior of the vessel is a fine handpainted black bird in flight. The second item is represented by a medium bowl rim and body sherds (720-12). These sherds all mend and are decorated with a red, brown, green, and black stylized four-petaled flower. A double-line band around the rim of the interior and exterior of this vessel type is similar to that found on Double Happiness bowls.

Chinese Brown Glazed Stoneware

Seven of the 13 archive boxes of ceramic artifacts contained Chinese brown glazed stoneware (CBGS), one of the most frequently encountered artifact types on Overseas Chinese archaeological sites. In addition to eight previously documented forms, the Sacramento HI56 collection revealed four apparently undocumented forms (Table 35).

Previous research indicated that the CBGS vessels are all containers of food. Most were produced in Canton, a province in southern China, with the potteries of Shek Wan being the most famous (Chace 1976; Laird 1918; Olsen 1978; Yang and Hellmann 1996).

The minute differences in the pots of a given form can be explained by the fact that CBGS was made by hundreds of small potters (Morrow 1995). Some of the pots have incised marks on the side or base (Table 36); because many pottery workers were illiterate, however, the characters are often illegible. CBGS is not a good dating tool because the forms of the pots have remained the same for the past 200 years or more. Various sizes and shapes were produced, with similar attributes of body fabric and glaze. Most notable are the glazes. The color of the exterior glaze varies from iridescent brown to almost black, while the interior glaze is typically a thin, light brown. After the food in the containers was consumed, the vessels were often re-used by their owners for other purposes (Yang and Hellmann 1996).

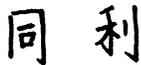
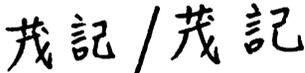
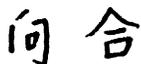
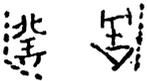
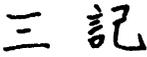
Table 35. Chinese Brown Glazed Stoneware (Total from HI56 Block, Sacramento)

Form	MNI
Wide-Mouthed Jar	42
Liquor Bottle	31
Globular Jar	27
Straight-Sided Jar	16
Barrel Jar	12
Spouted Jar	10
Pan	4
Stew Pot	1
<u>Previously Undocumented</u>	
Rectangular Vessel	1
Recessed-Rim Jar	1
Lug-Handled Jar	1
Straight-Sided Jar	1

In this section we discuss all the forms of CBGS recovered from the HI56 site. For the previously undocumented forms, only physical descriptions will be provided because no information on their functions is available. Please note that the Chinese characters within this section are transliterated in Cantonese because the oral interviews were conducted in that dialect.³

³ Because the majority of the 19th-century Chinese immigrants came from Canton, Cantonese would have been the dialect these sojourners were using.

Table 36. Makers' marks on Chinese Brown Glazed Stoneware

Catalog #	Embossment	Transliteration	Translation	Form
5-27			[Undefined]	Wide-Mouthed Jar
99-13		Feng	Full; Harvest	Barrel Jar Lid
704-17		Tong Li//Li	Together Profit//Li	Liquor Bottle
		Xin Chang	Faithful Prosperity	Liquor Bottle
902-48		Tong Li/Tong Li	Together Profit/Together Profit	Liquor Bottle
		Mao Ji/Mao Ji	Prosperity Mark/Prosperity Mark	Liquor Bottle
903.12-3		Xian He	To Peace; To Cooperation	Wide-Mouthed Jar
903.57-1		[Illegible]	[Undefined]	Globular Jar
903.68-17		San Ji ¹	Three Mark	Square Straight-Sided Jar

¹ These two characters were stamped as mirror images of their actual forms; in other words, they were printed right-side left. No explanation is available for the mirror imaging.

Table 36. Makers' marks on Chinese Brown Glazed Stoneware, continued

Catalog #	Embossment	Transliteration	Translation	Form
954.2-22	均 昌	Jun Chang	Balanced Prosperous	Liquor Bottle
954.4-42		[Illegible] Chang Tu Ji	The Mark of...Chang	Liquor Bottle
954.5-43	生 和	Sheng He	Life Peace	Wide-Mouthed Jar
954.4-50	塹 字	Xuan [Illegible]	Picked...	Large Storage Vessel

Spouted Jar

The Spouted Jar, or *ngǎ hú* (瓦壺 , ‘pottery pot’), has a round, squat body with a small, lipped opening in the center and a spout to the side. It has been called a soy pot, but research indicates this term is too restrictive, as other food items such as liquor, black vinegar, and peanut oil came in these jars. In rural areas they have been used as teapots as well (Yang and Hellmann 1996).

Liquor Bottle

The tear-drop-shaped liquor bottle, or *tsáo tsun* (酒罇 , ‘liquor bottle’), has also been called a wine bottle in the past. Sprague (1987) pointed out these are more likely liquor than wine bottles. He noted that while Chinese *wine* could have been easily reproduced in California by the early immigrants, Chinese *liquor* is very distinctive in its flavor and would have been very difficult to make in the United States. It is therefore not likely that Chinese *wine* was imported to California when there was a much greater market for Chinese liquor. Two common types of Chinese liquor, *Ng Ga Py* (五加皮) and *Mui Guai Lo* (玫瑰露), were sold in these bottles and can still be found in Chinese grocery stores. Both types of liquor are around 100 proof, and are used in cooking as well as for drinking.

Wide-Mouthed Jar

A variety of shapes and sizes make up the category of wide-mouthed jars (Figures 46, 47, 48, 49), or *füt hów ngá pǎng* (闊口瓦瓶 , ‘wide-mouthed pottery bottle’). Generally speaking, the wide-mouthed jar has a round and squat body with a wide, lipped opening in the center. Some researchers have called this form the shouldered jar.

John Olsen has compared wide-mouthed jars to Mason jars in Western culture, because both are mass-produced to hold products for storage, and yet may be re-used for other purposes after they have been emptied and cleaned (Olsen 1978:32). The wide-mouthed jars contained preserved tofu; sweet bean paste; black, brown, and white beans; pickled turnips; cabbage; and shrimp paste. In homes they have been used to store sugar, as well as various condiments (Yang and Hellmann 1996).

Globular Jar

As its name implies, the globular jar, or *ching* (罇 , ‘jar’), is globular in body, has a rolled lip on its opening, and may or may not have lug handles. The original content of many globular jars was hard liquor, but oil was also sold in them. Stores and taverns used the larger ones for shipping; while the medium-sized and small ones were used in homes. They have been used to store soy sauce, pickled carrots, scallions, salted cabbage, melons, cucumbers, ginger, and salty duck eggs, also known as “thousand-year-old eggs” in North America (Yang and Hellmann 1996).

Straight-Sided Jar

The straight-sided jars, or *jiung* (盅 , ‘covered cup’), are round in cross section, have roughly parallel sides, are usually thinner in body than the forms mentioned above, and possess a glazed lid. Typically, the seat for the lid is unglazed. Like the wide-mouthed jars, they came in several sizes. Some Chinese doctors used the smaller vessels to store

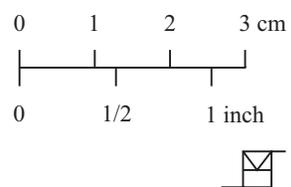
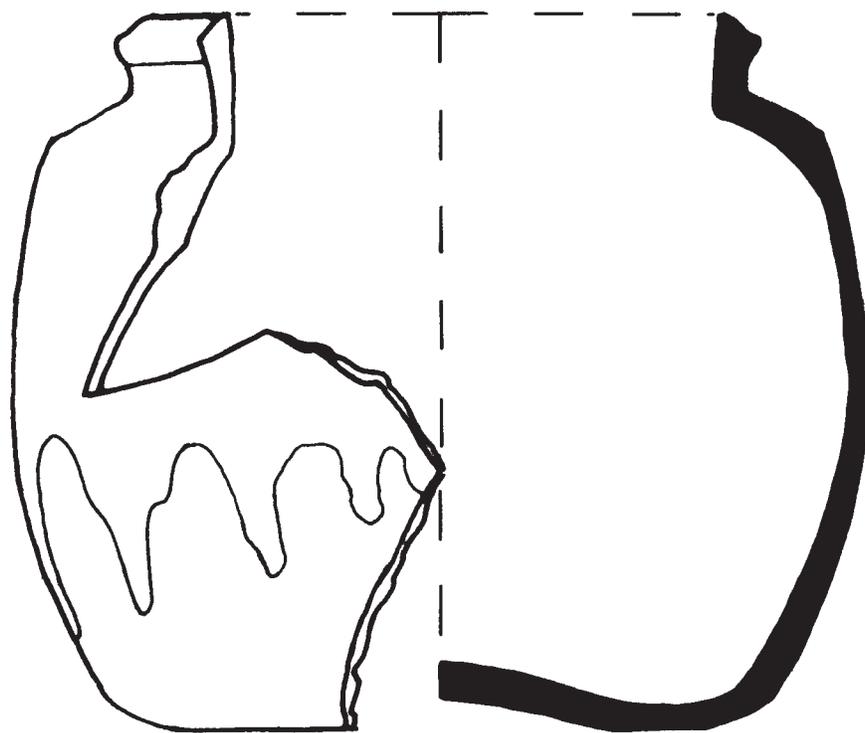


Figure 46. Chinese brown glazed stoneware wide-mouthed jar. *This type of vessel comes in many varieties, from short and squat to tall and narrow. Some have wider openings. See also Figures 47, 48, and 49. Catalog 95-14-954.4-43. (Illustration by Mike Stoyka)*

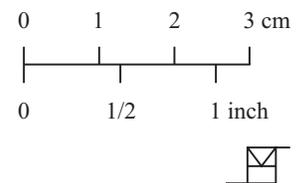
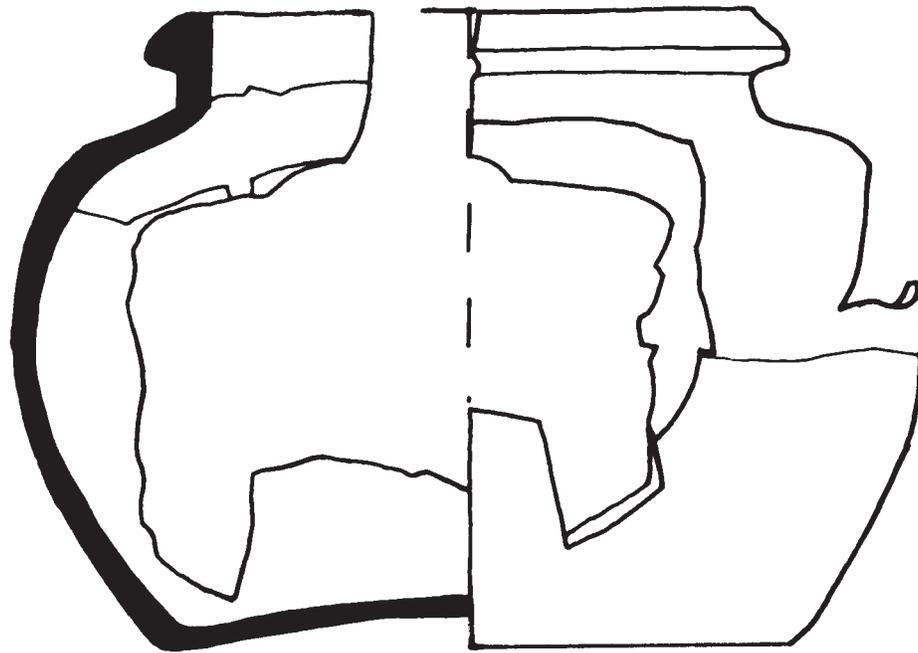


Figure 47. Chinese brown glazed stoneware wide-mouthed jar. *This is an example of a squat wide-mouthed jar. See also Figures 46, 48, and 49. Catalog 95-14-5-27. (Illustration by Mike Stoyka)*

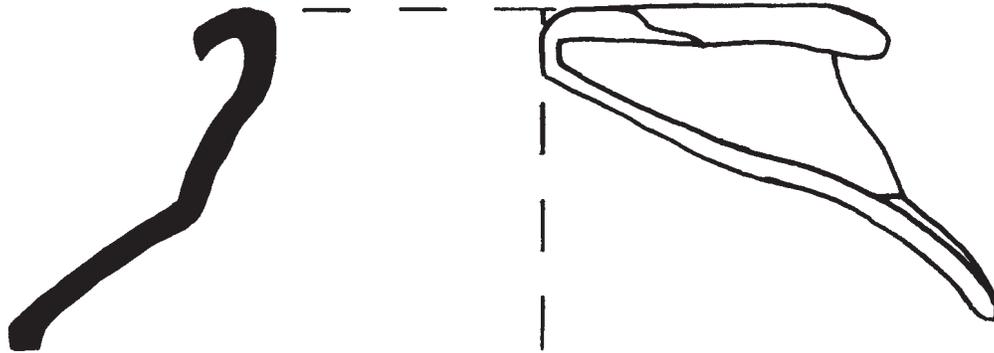


Figure 48(a). Chinese brown glazed stoneware wide-mouthed jar rim. *This rim has a pronounced rolled rim when compared to other wide-mouthed jar vessels. See also Figures 46, 47, and 49. Catalog 95-14-903.51-7.*

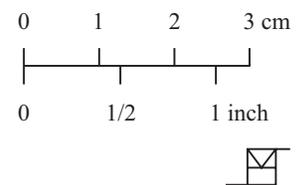
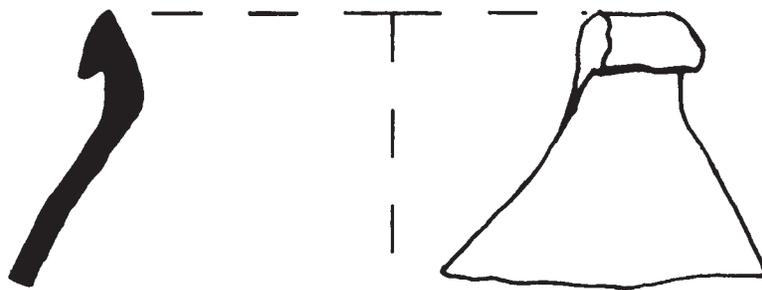


Figure 48(b). Chinese brown glazed stoneware wide-mouthed jar rim. *This rolled rim is less pronounced than the example shown above. Catalog 95-14-903.51-7. (Illustration by Mike Stoyka)*

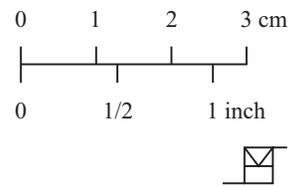
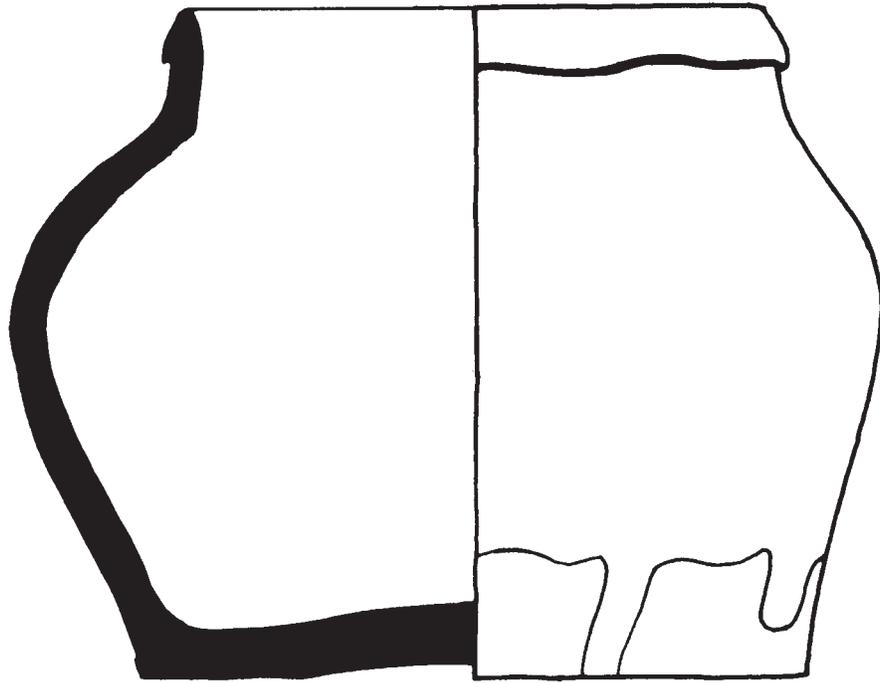


Figure 49. Chinese brown glazed stoneware wide-mouthed jar. *Another subtle form variation of the wide-mouthed jar type. See also Figures 46, 47, and 48. Catalog 95-14-88-4. (Illustration by Mike Stoyka)*

medicinal ointment; the preserved tofu mentioned previously was available in the medium- and large-sized jars. In homes they might have contained maltose—a sweet, sticky substance used in Cantonese cuisine—or medicinal herbs. They also were used to steam vegetables (Yang and Hellmann 1996).

Barrel Jar

The barrel jar, or *ngá gong* (瓦缸 , ‘pottery barrel’), is essentially a huge straight-sided jar (Figures 50a and 50b). Many of these jars were originally used to pack *pintong* (片糖 , ‘sheet sugar’) for transport. The jars were re-used to store rice, other grains, sticky rice powder, and whole soy beans. In the days before tap water, these jars were also left outside the house to catch rain. The larger vessels could also have been used to ship the bones of the dead back to China. According to Cantonese custom, the relatives of the deceased would exhume the body after 10 years. After arranging the bones in a ritually specified way in the barrel jar, it would be reburied in the family cemetery plot (Yang and Hellmann 1996).

Pan

Fragments representing at least four pans, or *tsòí but* (菜鉢 , ‘vegetable basin’), were recovered from the site. Pans are usually glazed on the inside, with the exterior glazed only as far as the sides’ horizontal ridge at the midsection. The rest of the vessel is unglazed (Praetzellis and Praetzellis 1979:155). Unlike the six CBGS forms discussed above, which could be found in the kitchens of both the farmer and the merchant classes, the pan was used only by the poorest rural families in China. It is not used as a cooking utensil, but rather as a serving dish. A Chinese elder interviewed for this study indicated that the pan was the least expensive CBGS vessel form available. In China, the pan was also used by beggars or Buddhist monks to beg for food or money. At the Chew Kee Store in Fiddletown, California, a Chinese herb shop that dates to late 19th century, the authors observed pans that were used as lids for wide-mouthed jars. Recent research suggests the pan probably could have been used that way in mid-19th-century Sacramento too; the Chinese are not *that* particular about the functions of these ceramics (Yang and Hellmann 1996).

Stew Pot

Only one representative vessel of the stew pot, or *sha bo* (沙煲 , ‘sand pot’), was recovered. The fabric of the stew pot is usually thinner and more refined when compared to other CBGS vessels, and the interior is glazed while the exterior is not. There is always a handle, and the lid can be flipped over to be used as a dish. They are used on stove tops to cook Chinese beef or tofu stew, hence the name “stew pot.” Stew pots are still used today in Chinese restaurants.

Rectangular Vessel

This vessel has a rectangular shape with a circular opening on top (906-30, Figure 51). The height is unknown because it is incomplete. The body is very thick and sturdy compared to most of the other CBGS forms. This form was noted in an archaeological context in the adjacent city block in Sacramento (Praetzellis and Praetzellis 1982:145).

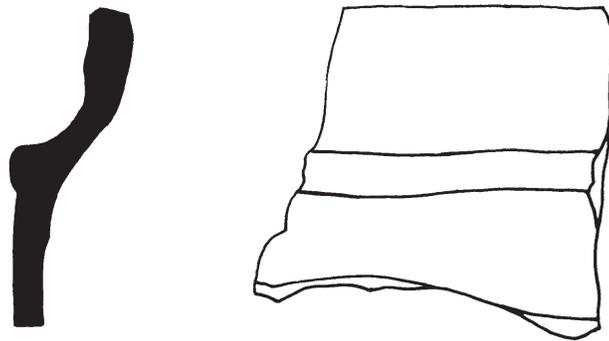


Figure 50(a). Chinese brown glazed stoneware barrel jar rim. *This gray-bodied, recessed rim would have received a lid. It is thinly glazed with a dark brown to almost black glaze on the exterior and interior. Catalog 95-14-902-52. (Illustration by Mike Stoyka)*

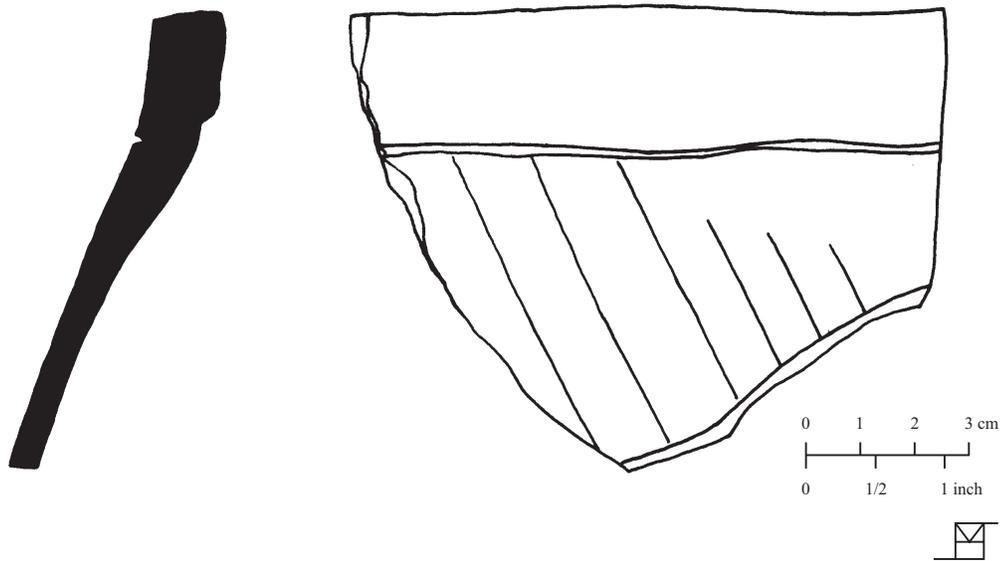


Figure 50(b) Chinese brown glazed stoneware barrel jar rim. *This buff to pink-bodied rim is brown glazed on the exterior and interior. The exterior is decorated with thin parallel ridges. Catalog 95-14-902-52. (Illustration by Mike Stoyka)*

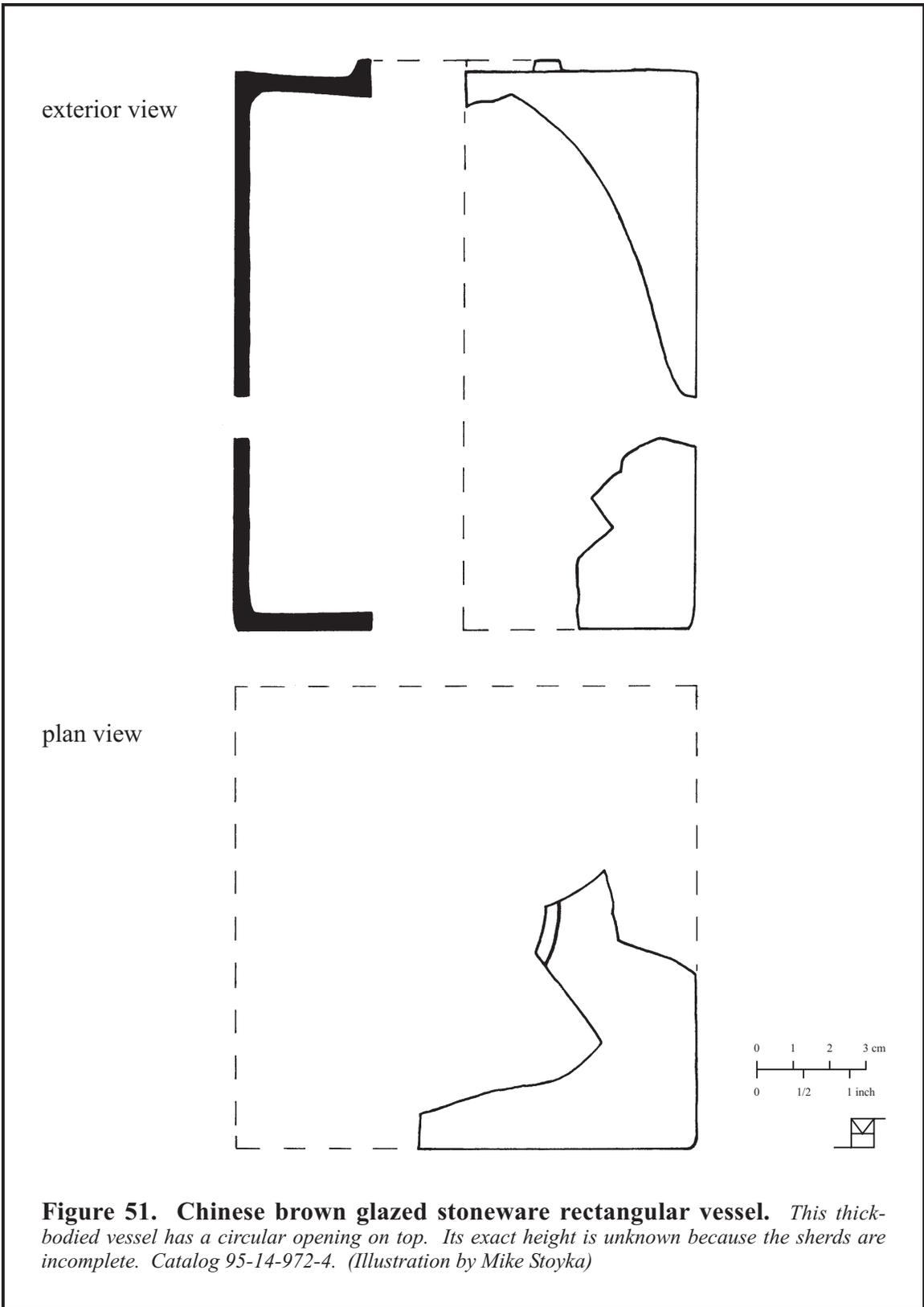


Figure 51. Chinese brown glazed stoneware rectangular vessel. *This thick-bodied vessel has a circular opening on top. Its exact height is unknown because the sherds are incomplete. Catalog 95-14-972-4. (Illustration by Mike Stoyka)*

Recessed-Rim Jar

The recessed-rim jar is globular in form, with a seat for a lid (900-11, 903.46-5, 954.2-26, 954.4-51, 963-14, and 973-21; Figure 52). It is a finer-grained stoneware compared to most of the other CBGS forms, and has a much thinner body than the Globular Jar. Its exterior is lightly glazed in buff.

Lug-Handled Jar

The lug-handled jar fragment (954.2-23) has two or more lugs, and may have resembled the spouted jar with lugs that was recovered archaeologically from a Chinese site in Riverside, California (Brott 1987:239; Figure 53).

Square Straight-Sided Jar

The square straight-sided jar has a square base with a square lip to receive a lid, similar to the straight-sided jars described above (903.68-17, Figure 54). It stands about 4 inches tall, and its contents are very likely to have been the same as that of its circular counterpart. There is a stamped mark at the base of this vessel. The two characters, *sanji* (三記, 'three mark'), are mirror images of their actual forms; they are printed right-side-left, in other words. The characters may designate the pottery kiln where the vessel was made, or they may refer to a specific store for which the vessel was produced

Miscellanea

Six buff-bodied stoneware lids were recovered. These round, saucer-shaped lids are 3-1/4 inches in diameter. Otherwise unglazed, some have traces of red paint on the interior. It is likely that they were employed to cover wide-mouthed jars.

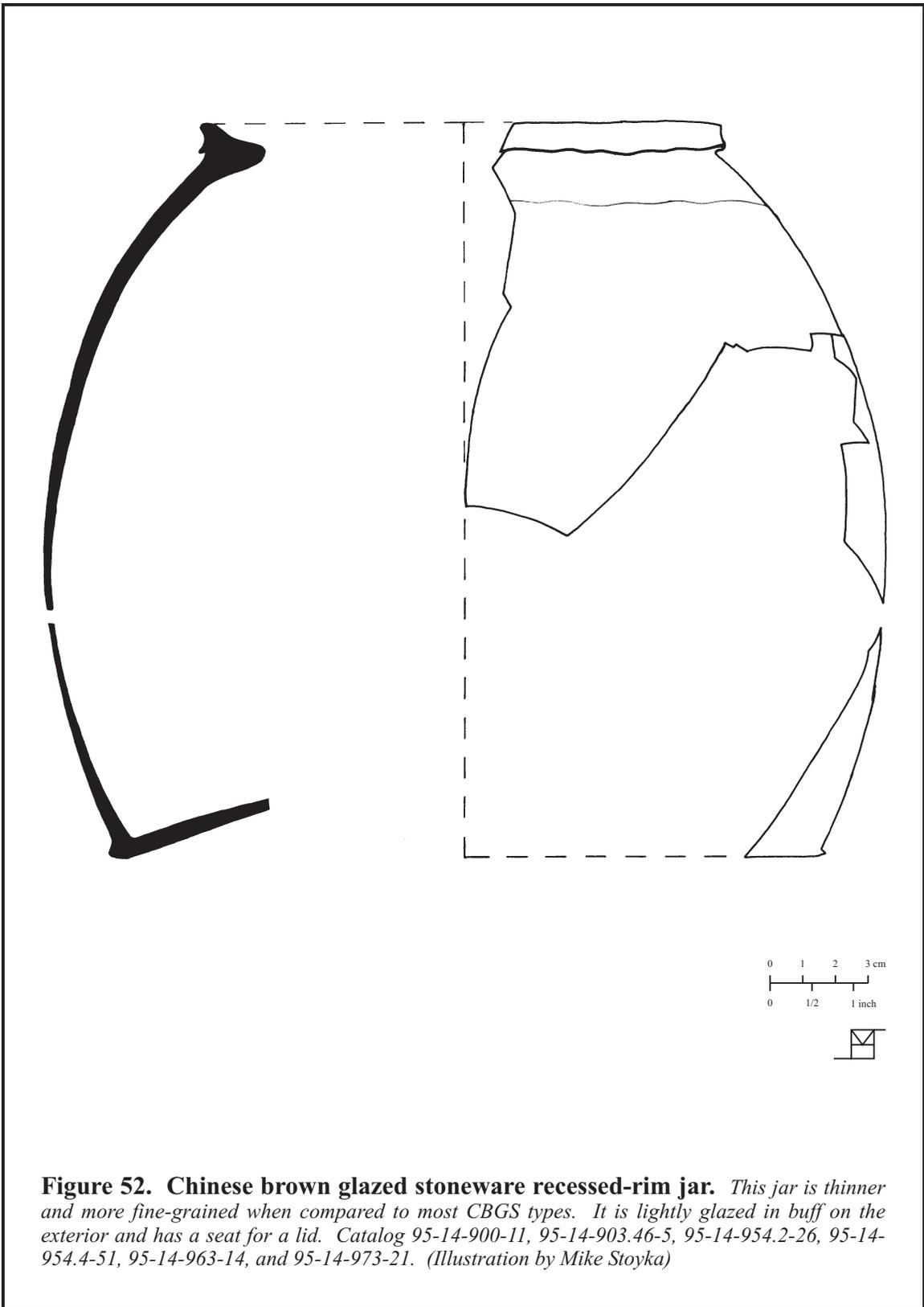
A number of crudely made, gray-bodied, utilitarian stoneware sherds were found among the 1855 fire deposits at 507 I Street (702.1-7 and 702.2-9). The fragments are roughly 3/4-inch thick, and are much softer than most CBGS. There are not enough fragments to determine the form of this previously undocumented vessel.

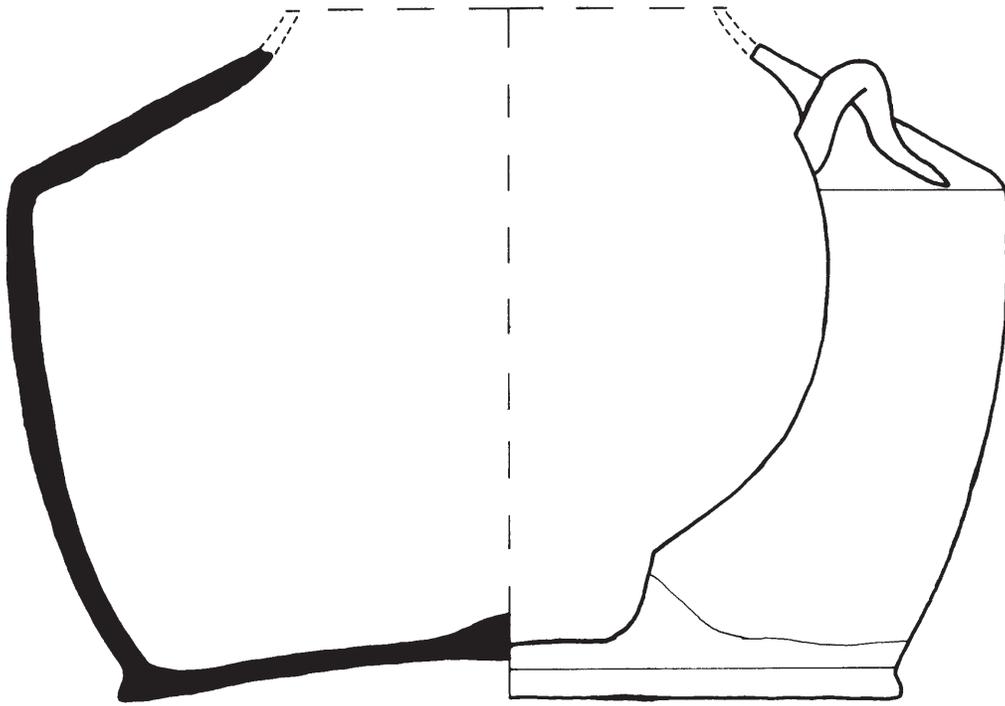
Finally, there is an unidentified CBGS object from 513/515 I Street (906-30). This item is approximately 1-1/2 inches high and measures 1/2-inch thick (Figure 56). Although another example has been recovered archaeologically in Sacramento (Praetzellis and Praetzellis 1982:143), there has been no satisfactory explanation for its function. This mysterious object is thinly glazed on the exterior, and bears an impressed symbol of *tongbao* on one side (see the discussion on the *tongbao* below).

GLASS

Chinese Medicine Vials

Five Chinese medicine vials are represented: two whole or nearly whole vials, one reconstructible, one base sherd, and a distinct midsection. The complete and reconstructible vials measure two inches high. The bottles ranged in color from colorless to light green to aqua, and all of the vials were constructed with a thick glass and a small internal cavity. These small dip-mold bottles have been referred to as "opium bottles" by archaeologists in the past (Blanford 1987; Evans 1980).

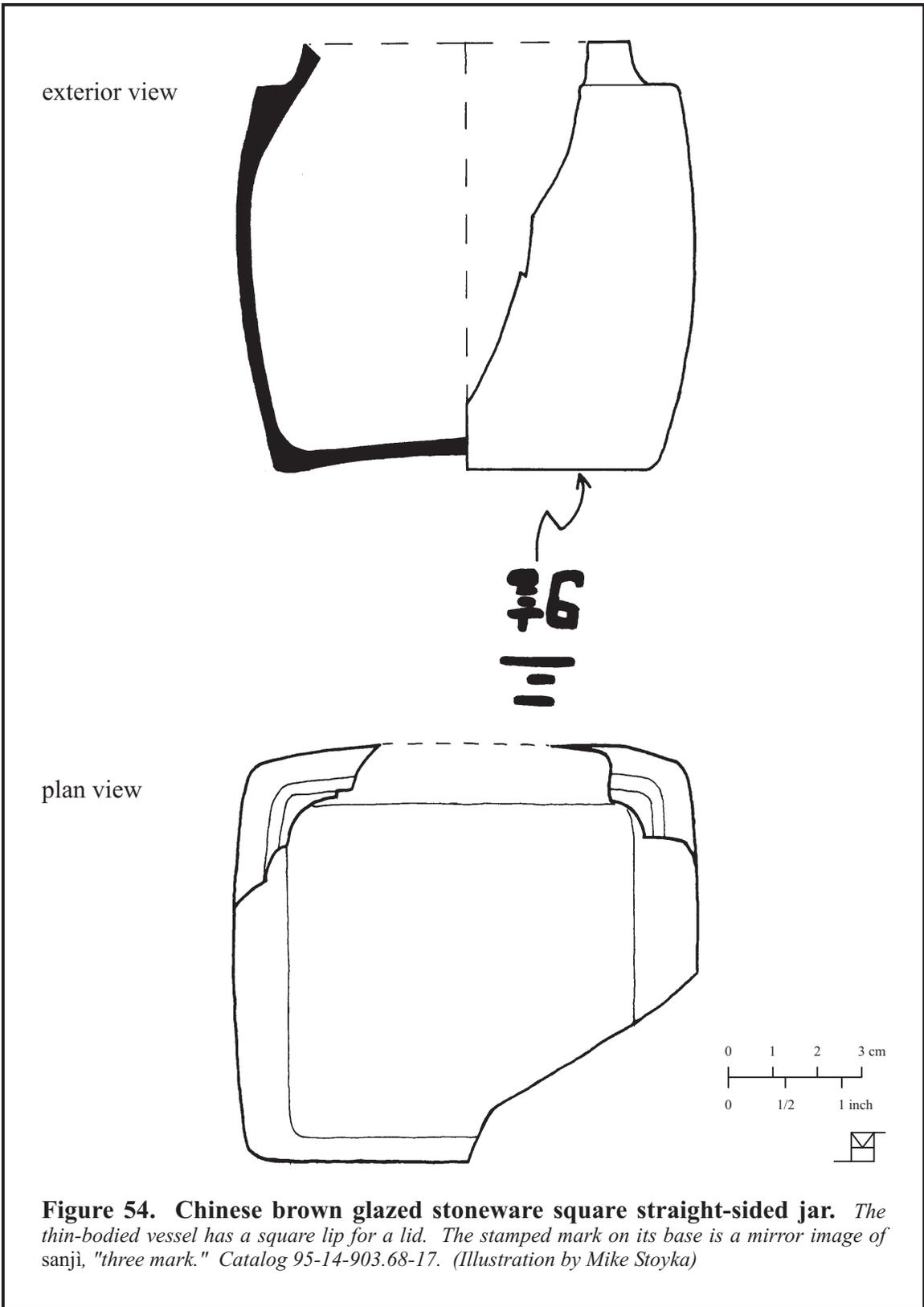


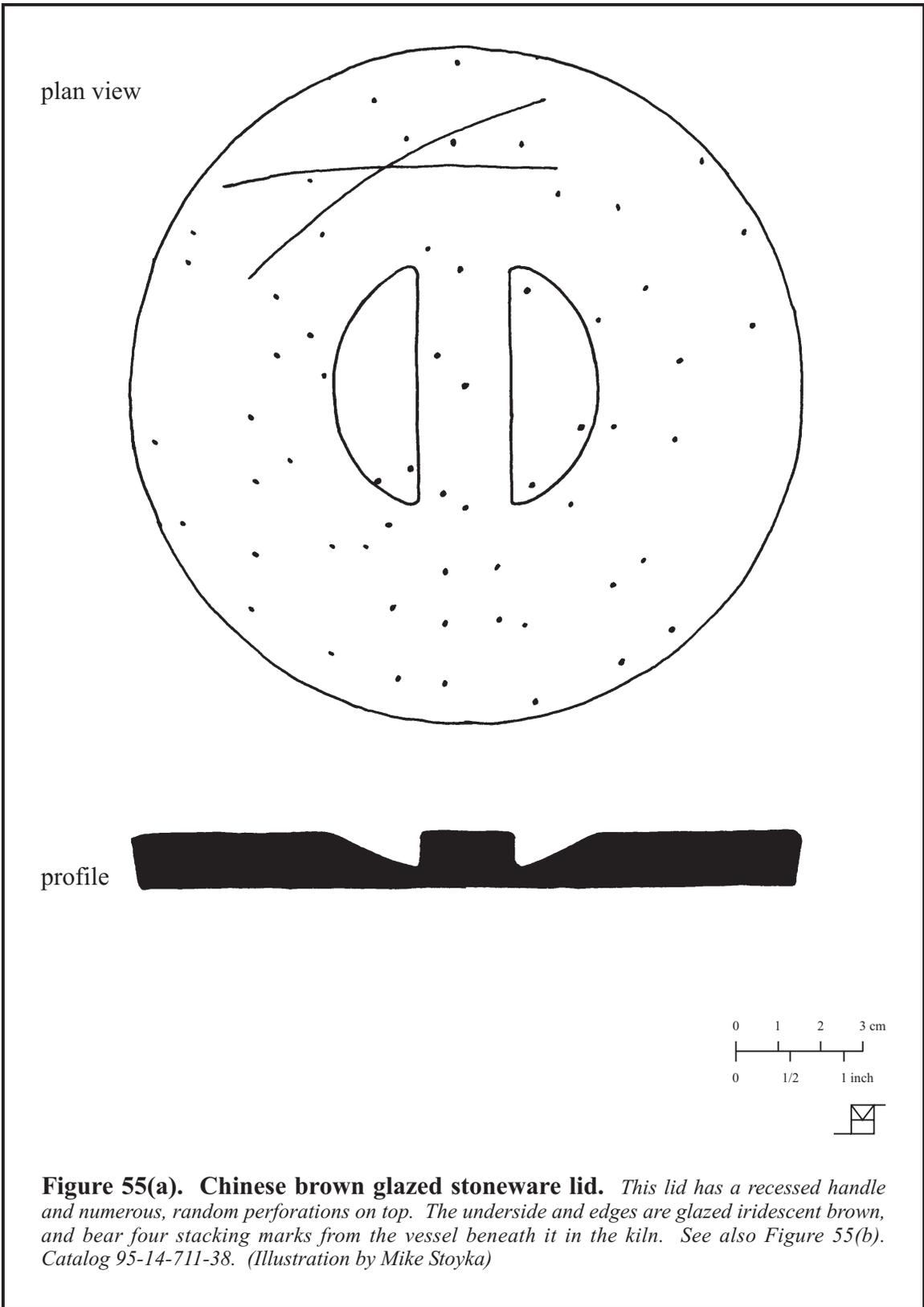


0 1 2 3 cm
0 1/2 1 inch



Figure 53. Chinese brown glazed stoneware lug-handled jar. *This vessel, thickly glazed in iridescent brown on its exterior, is similar in form to the spouted jar except for the handmade lug handles. Catalog 95-14-954.2-23. (Illustration by Mike Stoyka)*





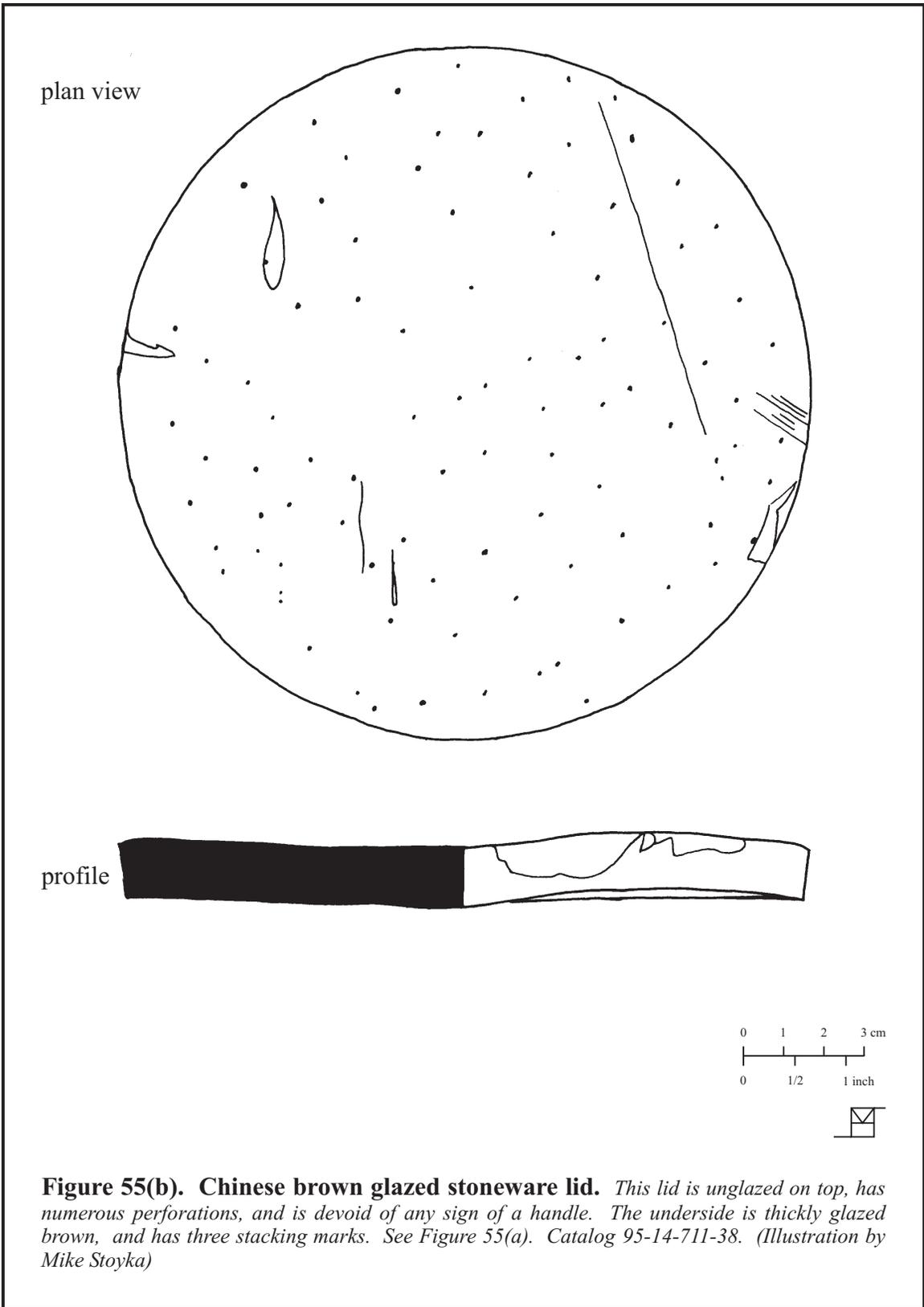


Figure 55(b). Chinese brown glazed stoneware lid. *This lid is unglazed on top, has numerous perforations, and is devoid of any sign of a handle. The underside is thickly glazed brown, and has three stacking marks. See Figure 55(a). Catalog 95-14-711-38. (Illustration by Mike Stoyka)*

profile



exterior
view

Figure 56. Unidentified Chinese brown glazed stoneware object. *It is thinly glazed on the exterior, and bears an impressed design of tongbao, a Chinese coin, on one side. Catalog 95-14-906-30. (Illustration by Mike Stoyka)*



base plan view

section



exterior
view

0 1 2 3 cm
0 1/2 1 inch



Figure 57. Chinese medicine vial. *This small vial has a thick, colorless glass body and a small internal cavity. It is distinguished from other vials in the collection by the etched floral design on opposing sides of the exterior. Catalog 95-14-720-35. (Illustration by Mike Stoyka)*

Both colorless vials in this collection were distinguished from the others in that their octagonal sides were paneled with an etched floral design on opposing sides (Figure 57). On one (720-35), the etching was colored yellow. All of the vials from this collection are of “Type 1” variety as illustrated in Blandford’s (1987:200-201) typology. These are the most common type of Chinese medicine vials seen on Overseas Chinese sites.

OPIUM-RELATED MATERIAL

Pipe Bowls

Fifty-eight opium pipe bowl-sherds were collected, representing 13 bowls. The majority of these artifacts was recovered from the pre-1855 and 1855 fire layers. Minimum numbers were derived by examining body fabric, decoration, and bowl construction (Table 37). Most of the bowls were of earthenware, the cheapest grade of opium pipe bowl available (Etter 1980:100). The earthenware sherds came in two varieties: a fine red earthenware with or without a thin clear glazed exterior, and a more highly refined earthenware with a gray-brown body. Many sherds in the latter group have a polished exterior. One porcelain pipe-bowl sherd, with a celadonlike glaze (711-22) was also recovered. All of the opium pipe-bowl sherds are fragmented, and many are decorated with Chinese characters, and floral or geometric patterns; they have plain, banded, or faceted sides.

Overall, the collection indicates that the cheapest variety of bowls was available to and in use by the Chinese community of Sacramento: the earthenware pipe bowls with circular smoking surfaces (Wylie and Fike 1993:275). The sole exception was the porcelain pipe bowl recovered in a post-1861 deposit. This bowl sherd has a circular smoking surface and straight, faceted sides. Porcelain pipe bowls are known to exist in private collections, but no reference has been found archaeologically (Etter 1980:100).

Tins and Glass Lamps

The collection of opium tins and glass lamps is meager. Seventeen copper-alloy tin fragments were collected from both 1855 burn layers and post-1861 flood deposits. Due to the fragmentary condition of these artifacts, no minimum number of items could be obtained. A complete 1-1/2-inch by 1-1/2-inch opium tin brand label (902-77), which reads *shànghwán lìyuán* (上環麗源, ‘Top Ring Source of Beauty’), was found in the 1861 flood deposit. The mark is identical to that of a stamped tin located archaeologically in a previous excavation in Sacramento (Felton, Lortie, and Schulz 1984:68-9). This brand of opium is one of the most common found on Overseas Chinese sites.

Five opium glass lamp chimney fragments representing three different lamps were collected. Two small straight-sided “Type A” rim fragments (903.30-4, 903.31-1) and a glass wick holder (903.52-10) were recovered from the 1855 fire layer. A nearly complete, “Type B” chimney (902-88), with 11 small panels around the beveled top, was found in the 1861 flood deposit; one small rim fragment (966-7) identical to this nearly complete chimney was found below the 1861 flood deposit (see Wylie and Fike 1990:289 for illustrations of lamp chimney types).

Table 37. Opium pipe bowls

Smoking Surface: Side Decoration	Circular Plain	Circular Banded	Circular Faceted	Circular Unknown	Unknown	Total
Material						
Fine Red Earthenware	22/2	4/1	11/3	6/*	1/*	44/6
Highly Refined Earthenware	3/2	8/3	1/1		1/*	13/6
Porcelain			1/1			1/1

*These sherds fall into the material categories, but are not given Mnis because they are too fragmented.

VARIA

Tongbao

Tongbao refers to Chinese coins that have a square hole in the middle (Figure 58). The Chinese fashioned their coins after the belief that the heavens were round and the earth was square, as expressed in the phrase *tianyuándifang* (天圓地方). The *tongbao* has been used in China for at least 2,600 years, and always bears four characters in the *han* (漢) script on the obverse side. The character to the left of the center hole reads *tong* (通, 'through'), and the character to the right reads *bǎo* (寶, 'treasure'). Thus, the term *tongbao* means 'a treasure with a hole through it.' The top and bottom characters refer to the emperor's reign during which the coin was minted. Two characters on the reverse, written in the *ching* (清) script, indicate the place where the coin was made.

A total of 32 *tongbao* were found; most came from the 1855 fire-deposit layers and the underlying surface. Nineteen bear legible reign marks, while others are too corroded to offer dating information. The majority of the identifiable coins were struck between 1736-1795, during the reign of *Qianlóng* (乾隆). The next most frequently encountered coins were those from the reign of *Kangxi* (康熙), who governed China between 1662-1722 and was the paternal grandfather of *Qianlóng*. It must be noted here that more coins bear marks from these two reigns than from any other period, because both emperors ruled for roughly six decades.⁴ Chinese records indicate that *Qianlóng* decided to step down from the throne after 60 years as a sign of respect, because he did not wish to rule longer than *Kangxi*. The other emperors from the *Ching* dynasty ruled from 3 to 33 years, and as a result did not mint as many coins. Almost all of the identifiable coins were minted in Beijing, capital of imperial China. Only one was minted in the 19th-century, made between 1821-1850 during the reign of *Dàoguāng* (道光).

It is difficult to ascertain the function of the *tongbao* in Sacramento without firm association with other artifacts and further research. Previous archaeological reports suggested that these coins were probably used in fortune-telling (as in *ijing*)⁵, as talismans (especially in multiples), and in the gambling game of *fantan* (Akin and Akin 1988:431; Farris 1984:147).

⁴ In the 17th century alone, more than 2 billion coins were minted (Beals 1980:59).

⁵ In the more recent Pinyin system, the romanization of the Chinese characters 易經 is spelled *ijing*, while under the old, Wade-Giles system, it is spelled *i-ching* as reported in previous archaeological literature.

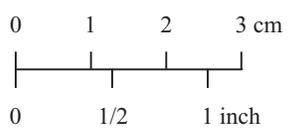
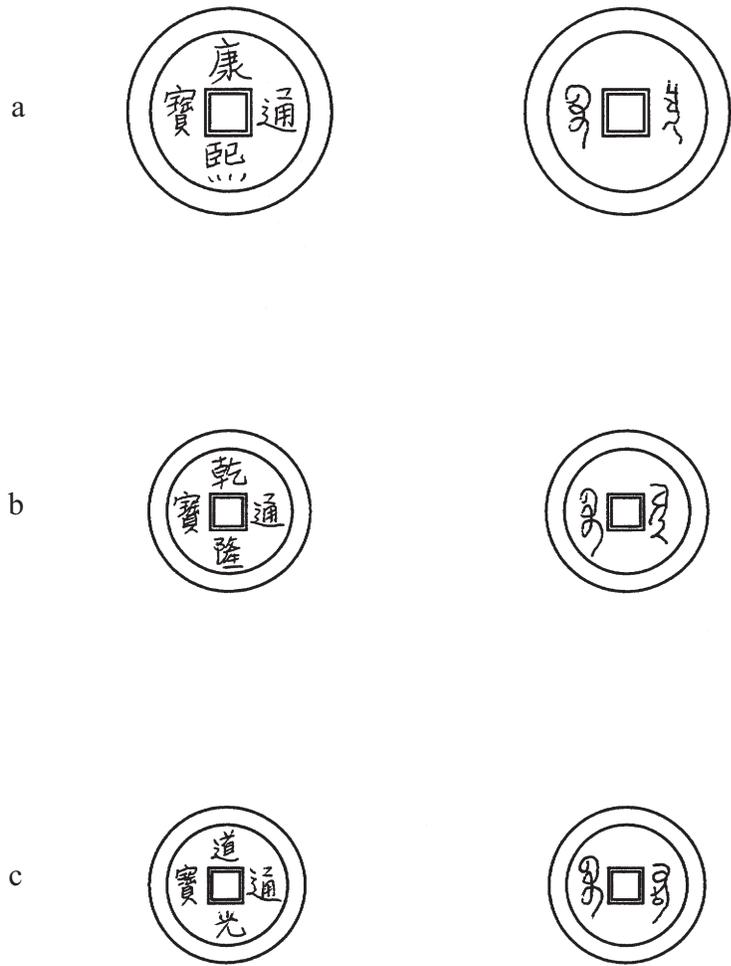


Figure 58. Representative *tongbao* from Sacramento HI56. 58(a) Kangxi, 1662-1722, Beijing. 58(b) Qianlong, 1736-1795, Beijing. 58(c) Daoguang, 1821-1850, unknown.

Locks

Four Chinese padlock fragments representing at least two individual locks were recovered. Measuring 2-3/8 inches and 2-7/8 inches long, respectively, these copper-alloy locks are traditionally used to secure wooden trunks or cabinets. Usually an I-shaped key is inserted into the key hole on one side, thus enabling the spring mechanism within the padlock to pop open.

Zhu

Nine Chinese gaming pieces, or *zhu* (珠 , ‘bead’), were identified. *Zhu* is transliterated as *chu* in the old Wade-Giles system used in some archaeological reports. The authors believe these gaming pieces should be termed *zǐ* (子 , ‘bead’ or ‘piece’), because that is the name for the beads in the game *wéichí* (圍棋 , ‘surround chess’). In order to avoid further confusion, however, we have elected to follow the old terminology but use the new spelling.

The three black and six white, handmade, convex glass artifacts are 1/2 inch in diameter, and are used in *wéichí*, a strategy game of two players, who each take a different color.⁶ The object of *wéichí* is to prevent the opponent from further play by surrounding his/her *zhu*. It has also been proposed that *zhu* may have been used as counters in *fantan* (Mueller 1987:391).

Additionally, a colorless glass disk (954.4-154) was recovered from the sub-1855 fire burn surface. This piece is different from the previously identified *zhu* in that it is flat on both sides and is significantly bigger, with a diameter of 11/16 inch. Although its exact purpose is unknown, the disk may also have served as a gaming piece.

Bracelets

Five bracelet fragments (902-87, 903.6-7, 903.35-6, and 903.39-2), found among the 1855 fire and post-1861 deposits, are of a material referred to as Peking glass (Noah 1987:402). Four are very deteriorated, while one is partially melted. Because of their condition, it was not possible to determine whether the bracelets were originally carved on the surface. These fragments represent at least two individual bracelets, and point to a female presence on the site.

It is the authors’ understanding that only women wore bracelets; certainly that is the case in contemporary Chinese society (Yang 1996, pers. comm.). In addition to serving as personal adornment, bracelets are also worn by women to keep away evil spirits. A traditional Chinese belief holds that, if one fell, the bracelet would hit the ground first, thus preventing “one’s spirit from being broken.” They are never taken off, not even for sleeping, because one must be protected at all times (Yang 1996, pers. comm.).

⁶*Wéichí* is known as *go* in Japanese.

Fans

Three fragments of a fan were found below the 1855 fire surface. These elongated tortoise-shell fragments are 1-7/8 inch long by 1/64 inch thick, and each has a hole drilled on the thinner end. The Chinese considered it elegant to carry a fan in one's sleeve and sway it gently while talking. The fan was carried by both men and women, and thus cannot serve as a gender marker.

Like the flat colorless disk in the *zhu* category, there is also an unidentified artifact that is possibly associated with fans. The mystery object (954.3-37), comprised of three associated fragments, is made of bone and measures 1/16-inch thick. It is carved with an intricate, hollowed-out, floral design, and has a serrated edge on one side. Again, its exact purpose is unknown.

CONCLUSION

The Chinese artifacts recovered from the HI56 site represent a wide range of material. Many of these types are encountered frequently on Overseas Chinese archaeological sites, but there are also several new finds which appear unique and have not been documented previously. This chapter has specifically sought to identify and describe these unusual artifacts, and offer available background information. This section will serve as a descriptive catalog that can assist in identification, as well as a building block for future information on Chinese artifacts.

GLASS BEADS

by Lester A. Ross

Archaeological excavations on the HI56 Block, Sacramento, recovered 382 glass beads of 26 varieties, including 20 varieties of drawn, 4 varieties of wound, and 2 varieties of mold-pressed beads. Although many proveniences can be associated with Chinese occupations, none of the beads appear to be of Chinese origin. Rather, most can be attributed to European manufacture, specifically from Bohemia. Based upon their varieties and colors, three subassemblages are defined: (1) pre-1855 to 1870 Chinese contexts; (2) an 1870 non-Chinese context; and (3) an 1877 non-Chinese context. High percentages of European beads and distributions of bead colors suggest all three contexts may have possible associations with Christian religious beliefs and customs. Evidence for beaded articles attributed to Chinese customs and beliefs was not observed.

BEAD CLASSIFICATION SYSTEMS

Identification and description of beads utilizes procedures based upon a combination of classification systems and strategies developed for archaeologists by Kenneth and Martha Kidd (1970), Karlis Karklins (1982, 1985, 1994), Roderick Sprague (1983, 1985, 1994), and the author (Ross 1994; Ross with Pflanz 1989). Additional descriptive nomenclature follows various authors who have addressed specific bead shapes, groups, and classes (e.g., Allen 1983; Beck 1928).

Beads are analyzed for a variety of attributes, following a four-fold, hierarchic classification scheme:

1. material and manufacturing techniques;
2. stylistic attributes, including color layering, shape, and presence or absence of decoration;
3. stylistic variety attributes, consisting of the type of decoration, diaphaneity, type of finish, mold seams, perforation types, shapes, and orientation, and range of bead color hue, value, and chroma; variability in shape and length; and the probable type of original luster and post-depositional erosion; and
4. bead sizes as defined from measurements of bead least diameter (LD) and length (L).

Bead descriptions are organized to present information by bead class, type, subtype, and variety. In an attempt to compare bead varieties to earlier bead classification systems of Kidd and Kidd (1970) and Karklins (1985), comparative numbers are provided when possible. Because of the difficulties in making comparisons with the varieties defined by Kidd and Kidd, only their class numbers are identified (e.g., IIa, IIIf).

For ease of reference, bead variety numbers consist of a single unique number (e.g., 1, 12, 20, etc.) assigned to the Sacramento Block HI56 bead assemblage, and the descriptions accompanying these numbers do not correspond to descriptions for similar numbered varieties at other sites.

Bead descriptions have been organized to present information by bead class, type, subtype, and variety in tabular format, together with a graphic representation of the bead shape. Discussions of bead-manufacturing techniques are provided in the text, together with relevant comparative data for the occurrence of similar beads from other dated contexts.

Comparative information regarding the occurrence of bead varieties in other archaeological contexts has neither been exhaustive nor complete for all varieties. Rather, varieties that are regarded as unique or possibly significant for geographical, cultural, or temporal affiliations have been documented.

Opinions regarding historic values, temporal ascriptions, and the frequency of occurrence at archaeological sites are based upon the personal knowledge of the author. Published literature documenting the precise temporal placement of beads in the 19th century for western North America is limited. This does not imply a lack of documentary reports (e.g., see Karklins and Sprague 1980, 1987), but rather the lack of comparable bead classifications and descriptions used by various authors who have written descriptive reports, combined with the lack of tightly dated contexts. No authoritative temporal studies for western North America have been published, and extant interpretations vary considerably based upon the experience of each author. Until a major effort is undertaken to review existing historical and archaeological literature, and to document tightly dated collections using a standard classification system, temporal and functional interpretations for glass beads from western North American sites can only be regarded as informative speculation.

CATALOGING PROCEDURES

Prior to initiation of the cataloging procedures discussed below, glass beads had been stored by provenience in resealable polyethylene bags. The author identified the major bead classes (i.e., drawn, wound, mold-pressed) and principal bead attributes. Techniques and methods for sorting beads into preliminary varieties followed procedures established previously by the author for other investigations (e.g., Ross 1990, 1995).

Sorting

Beads from individual proveniences were sorted into varieties and placed into labeled resealable polyethylene bags along with paper catalog slips containing provenience information, variety number, type designation, and bead quantity. Each bag for a single provenience was opened individually, separating beads with similar attributes into like groupings. Incandescent light, water (to wet beads, thus eliminating the appearance of surface patina and removing loose dirt), and magnifying loupes or lenses were used to identify bead attributes. Patina and mineral encrustations were removed by briefly immersing beads in a 67% aqueous solution of glycolic acid (hydroxyacetic acid, $C_2H_4O_3$) to soften surface deposits and/or a 30% aqueous solution of muriatic acid (hydrochloric acid, HCl) to dissolve salts. Acids were removed by washing beads in water and again in isopropyl alcohol (C_3H_8O). If necessary, softened deposits were further removed by gently brushing or scraping.

Attributes considered during the sorting process consisted of: the following:

- Material
- Method of Manufacture
- Decoration
- Perforation Type, Shape, and Orientation
- Mold Seam Orientation (if present)
- Diaphaneity
- Luster

Layering
Color Chroma, Value, and Hue
Shape
Type of Finishing

Beads from archaeological sites are exposed to a variety of chemical and physical effects as they sit in soil. Some deteriorate physically and chemically due to natural effects of soil pH and contact with minerals and chemicals in solution. Natural corrosion (n-transforms) noted for these beads included formation of patina and mineral encrustations on glass surfaces, staining of glass, transformation of color (notably black to gray for some varieties of opaque beads, presumably those with a relatively high manganese or iron content), and decomposition of glass creating pits in the bead surface (notably red beads). Prior to or after deposition, beads also may have been subjected to cultural alteration (c-transforms), such as breakage. As beads were sorted, the effects of corrosion were considered and overlooked as independent stylistic variables used to define bead varieties.

The sizes of beads also were disregarded during initial sorting. As a dependent variable of individual varieties, size was documented only after final varieties were established.

As with all archaeological assemblages of beads, the separation of beads into discrete varieties relies upon the variability of the attributes present and the ability of the analyst to distinguish groups of attributes consistently. Even though multiple varieties may have been deposited by the historical occupants of a site, once these varieties are mixed, they may or may not be re-sorted into their original groupings. For example, two historical colors of green and blue embroidery beads could result in the creation of a single archeological variety of green to blue beads. As groups of attributes were segregated consistently, individual varieties were defined.

Descriptions were entered by attribute classes into a computer database (beadvrty.db, using Paradox version 4.5), allowing queries to be made using one or multiple attributes. Beads were tallied by variety and provenience with quantities entered into a second database (province.db). Queries of this database allowed distributions of varieties by temporal and cultural provenience (see Volume 2, Appendices 1-3) to be evaluated (e.g., the varieties of beads associated with early proveniences versus later proveniences). Attributes used to recognize final varieties are summarized below.

Material

Beads commonly are manufactured from bone, ceramic, glass, metal, plastic, shell, and stone. For this study, only glass beads were analyzed.

Methods of Manufacture

Methods for manufacturing beads vary by country and temporal period. Common methods for the mid- to late-19th-century include drawn, wound, and mold-pressed techniques.

Drawn Beads. This bead type was manufactured from hollow canes drawn from a molten gather of glass. Canes were chopped, cut, and sawn into bead-length segments for subsequent finishing, sorting, and packaging.

Wound Beads. Simple wound beads were manufactured by wrapping or winding molten glass around a rotating mandrel, such as a wire, rod, or straw coated with a clay slip. Beads were produced individually, then removed from their shafts and annealed, cleaned, sorted, and packaged. Complex and decorated wound beads were altered by molding or shaping, by applying dots, by faceting, etc. Shaped wound beads were manufactured by winding glass on a mandrel then; by using an open mold, the decoration was pressed into the surface while the glass was turned. Wound beads comprise the second most common group at North American sites dating to the mid-19th century. Beads of this type often exhibit spiral striations (either on the surface or within the glass); they may exhibit numerous micro-bubbles within the glass, and may have a pointed tip at one end where the glass rod was removed from the bead.

Mold-Pressed Beads. This bead type was manufactured by pinching or pressing molten glass in a two-part mold. The perforations were produced by pushing a pin into the mold and through the glass. Mold-pressed beads appear to have been produced in Bohemia after the 1820s. Beads of this type are characterized by the presence of a mold line (not necessarily a mold seam, which may have been ground off), and earlier varieties often have conical or biconical perforations.

Decoration

Beads are either decorated or undecorated. Decorations are highly variable; attributes used for identification include the type of decoration (e.g., appliqués, inlays, facets, molded surfaces, shaped surfaces), the color of the decoration, and the style, placement, and orientation of repetitive elements (e.g., rows, sides, facets, dots). Generally, the number of elements is not used in defining varieties, but may be used to identify a subtype or to describe the range of repetitive elements.

The types of decoration recorded for beads from Sacramento Block HI56 consist of the following:

- Drawn Beads
 - Shaping
 - Faceting
- Wound Beads
 - Shaping
 - Inlaid Dotting
- Mold-Pressed Beads
 - Faceting

Perforation Type, Shape, and Orientation

Types, shape, and orientation of perforations from beads from Sacramento Block HI56 consist of the following:

- Type
 - Cylindrical
 - Conical and Pierced
 - Conical, Pierced, and Punched
- Shape
 - Circular

Orientation

Vertical

Diaphaneity

The clarity of glass is identified as opaque, translucent, or transparent. Bead varieties may exhibit a range of diaphaneity (e.g., translucent to opaque) or may have multiple layers of glass of different diaphaneity (e.g., opaque on transparent). All three variations of diaphaneity were present at Sacramento Block HI56.

Luster

Luster refers to the surface appearance of a bead (excluding the effects of corrosion when possible, see below). The following are possible luster attributes:

Dull - very fine matted surface

Fibrous - exaggerated fibrous surface

Greasy - oil-like surface

Iridized - iridescent sheen

Matte - coarse matted surface

Metallic - metallic sheen

Satiny - fine fibrous surface (ribbon-like)

Shiny - smooth glossy sheen

Beads within a single variety may exhibit a range of luster (e.g., dull to shiny). Variations at Sacramento Block HI56 are limited to dull, fibrous, and shiny.

Layering

Beads may be manufactured from one or more layers of glass (i.e., monochrome or polychrome). Even a single layer of glass may produce multiple fortuitous layers as the glass cools. Polychrome layering can consist of multiple individual layers (e.g., 2-layer, 3-layer, multi-layer with perhaps tens of layers), marbled layers, or zoned layers. Generally, a single variety exhibits only one type of layering, although some varieties exhibit both monochrome and double-layer polychrome. Most polychrome-layered beads from Sacramento Block HI56 are 2-layer beads (Varieties 15, 19, and 20). Varieties 1 and 4 exhibit multiple fortuitous layers.

Color Chroma, Value, and Hue

Color is one of the principal attributes used to sort trade beads. Beads of a similar color were grouped together; often subtle shades could not be identified consistently, and a single bead variety might exhibit a broad range of color. When describing color, the chroma, value, and hue are recognized by a simplified set of color terms, used individually or in various combinations. The following color terminology was used to describe beads from Sacramento Block HI56:

Value

Very Light

Light

Medium

Dark

Very Dark
Hue, relying on various combinations of
Clear
White
Black
Red
Brown
Yellow
Green
Blue
Purple

Definitive color designations consist of Munsell notations as determined using a Munsell Book of Color (Munsell Color 1994) and a magnifying lamp with a 60-watt incandescent light source approximately 10 cm from the bead. Prior to reading Munsell colors, bead surfaces were cleaned to remove patina and mineral encrustations as described above.

Shape

Shape is a highly variable attribute, often difficult to describe. Shapes identified for beads from Sacramento Block HI56 include the following:

Cylindrical
Ellipsoidal
Multi-Sided
Ovoidal
Spheroidal
Toroidal

Type of Finishing

Drawn and some mold-pressed beads are often finished during manufacture using such techniques as cutting, fire polishing, or hot tumbling. Only drawn beads from Sacramento Block HI56 exhibited the finishing attributes of cutting and hot tumbling.

Corrosion

As discussed above, glass beads are subject to a variety of natural and cultural factors that effect the appearance of their fabric and surface. Visible corrosive appearances for beads from Sacramento Block HI56 include:

Drawn Beads

Eroded (most glass)
Pitted (purplish red glass)
Patined (clear, black, purplish red, red, brownish yellow, green, bluish green, and purple glass)

Wound Beads

Eroded (most glass)
Patined (clear and black glass)

Mold-Pressed Beads

Eroded (most glass)

Patined (purplish red glass)

Size

Once all beads were identified and cataloged by variety, then sizes for each variety were determined. Bead sizes are defined using least diameter and length. Sizes were determined by measuring those beads with the smallest and largest least diameters and lengths for a visible range of sizes for each variety. To obtain more precise data for each size, all beads within a variety, or within a representative sample from a variety, were measured. When multiple sizes are reported for a single variety, no beads with measurements outside the sizes recorded were observed.

Photography

Prior to photographing beads, their surfaces were cleaned to remove patina and mineral encrustations as described above. After cleaning, beads with frosted appearances were coated very lightly with canola oil to reduce discoloration. Later, the oil was removed with isopropyl alcohol (C₃H₈O). Beads were grouped by class, type, and variety on a glass pane elevated over an 18% gray card. Two high-intensity electronic flash units were used to illuminate beads, and a color strip was included with each shot to aid color-balancing of the final prints.

BEAD ASSEMBLAGE (*n* = 382)

Drawn Beads (*n* = 366)

Manufactured from hollow canes drawn from a molten gather of glass, canes were chopped into bead-length segments for subsequent finishing, sorting, and packaging. They are the most common beads, comprising 95.8% of the bead assemblage, and are grouped into 20 types or subtypes based on their layering, shape, finish, and decoration.

Monochrome Drawn Beads with Cut Ends (*n* = 112)

Monochrome, Cylindrical, Undecorated Drawn Beads with Cut Ends (*n* = 5; Variety 7). These beads are the simplest of the unfinished monochrome beads. They have circular cross sections, consist of short to long segments cut or chopped from drawn canes, and have not been fire-polished or hot-tumbled. Only one variety is recorded (Figure 59). Variety 7 beads were recovered from a ca. 1877 non-Chinese context (Table 38).

Monochrome, Multisided Drawn Beads with Cut Ends (*n* = 4; Variety 3). The tubes used to make these beads were manufactured from a gather of glass that was probably pushed into a multisided mold to create a polyhedral form, and then drawn into a multisided, hollow cane. These beads were probably manufactured in Bohemia, cut from hollow glass canes used to produce Variety 2 beads (discussed below). Only one variety is represented (Figure 59). No beads of this variety are reported from well-dated, western North American contexts. Variety 3 beads were recovered from a ca. 1870 non-Chinese context (Table 38).

Table 38. Distribution of Beads by Variety, Ethnicity, Provenience, and Time Period

VARIETY	ETHNICITY AND TIME PERIOD				QUANTITY
	Chinese Contexts		Non-Chinese Contexts		
	pre-1855	1855-1870	ca. 1870	ca. 1877	
1	20	2	1		23
2	66	1	1		68
3			4		4
4	7		12		19
5				5	5
6				76	76
7				5	5
8				1	1
9				2	2
10	5	1		7	13
11	44			1	45
12	26	3			29
13	2				2
14	1				1
15	2				2
16	56	5			61
17	1				1
18	5				5
19	1				1
20	7				7
21	2				2
22	1				1
23	5				5
24	1				1
25		2			2
26	1				1
TOTAL	253	14	18	97	382



Monochrome, Cylindrical, Undecorated Drawn Beads with Cut Ends (n = 5)

VARIETY NUMBER	DECORATION NUMBER OF SIDES	DIAPHANEITY LUSTER CORROSION PATINA	LAYERING COLOR MUNSELL NOTATION	SHAPE LENGTH FINISH	SIZE LEAST DIAMETER x LENGTH (mm) PERFORATION DIAMETER (mm)	PLATE NUMBER	COMPARATIVE NUMBERS	QUANTITY
7	Undecorated ---	Opaque Dull No patina	Monochrome Black N 2/	Cylindrical Long Cut	Size 1 1.8-2.3 x 2.3-3.2 0.6-0.8	1a	Kidds' Ia	5



Monochrome, Multi-Sided, Undecorated Drawn Beads with Cut Ends (n = 4)

3	Undecorated 6-sided	Transparent Fibrous No corrosion No patina	Monochrome Green 7.5G3/6	Cylindrical Short to Long Cut	Size 1 5.4-6.2 x 5.3-6.4 3.5-3.8	2a	Kidds' Ic	4
---	------------------------	---	--------------------------------	-------------------------------------	--	----	-----------	---



Monochrome, Multi-Sided, Drawn Beads with Two Rows of Ground Facets and Cut Ends (n = 102)

12	2 rows of ground facets 6-sided	Transparent Dull Eroded No patina	Monochrome Clear ---	Cylindrical Short to Long Cut	Size 1 (n = 22) 4.5-5.6 x 5.1-6.2 1.2-2.4 Size 2 (n = 7) 7.4-8.4 x 6.5-8.1 2.5-3.5	2b	Kidds' If	29
2	2 rows of ground facets 6-sided	Transparent Dull & Fibrous No corrosion Patina	Monochrome Bluish-green 10G3/6	Cylindrical Short to Long Cut	Size 1 4.1-5.5 x 4.5-6.3 1.4-3.0	2c	Kidds' If	68
23	2 rows of ground facets 6-sided	Transparent Dull Eroded Patina	Monochrome Dark Purple 7.5PB2/6	Cylindrical Short Cut	Size 1 5.0-6.0 x 4.2-5.3 1.9-3.5	2d	Kidds' If	5



Monochrome, Multi-Sided, Drawn Bead with Four Rows of Ground Facets and Cut Ends (n = 1)

14	4 rows of ground facets 7-sided	Transparent Shiny & Fibrous No corrosion No patina	Monochrome Bluish-green 10G3/6	Cylindrical Short Cut	Size 1 10.1 x 9.4 4.1	2e	Kidds' If	1
----	------------------------------------	---	--------------------------------------	-----------------------------	-----------------------------	----	-----------	---



Polychrome, Multi-Sided, Drawn Beads with Two Rows of Ground Facets and Cut Ends (n = 42)

4	2 rows of ground facets 6- to 7-sided	Transparent on Translucent Fibrous No corrosion No patina	Polychrome Clear on White N 8.75/	Cylindrical Short to Long Cut	Size 1 (n = 14) 4.4-6.1 x 4.0-5.7 1.5-3.2 Size 2 (n = 4) 6.7-8.0 x 6.5-7.2 2.6-3.3 Size 3 (n = 1) 9.8 x 8.1 2.8	2f	Kidds' IIIf	19
1	2 rows of ground facets 6-sided	Transparent on Translucent Dull & Fibrous No corrosion No patina	Polychrome Purple on Very Light Purple 5PB3/6 on 5PB7/6	Cylindrical Short to Long Cut	Size 1 4.7-5.9 x 4.0-7.9 1.6-2.8	2g	Kidds' IIIf	23

Figure 59. Drawn beads with cut ends (n = 154)

Monochrome, Multisided Drawn Beads with Ground Facets and Cut Ends ($n = 103$). The tubes used to make these beads were manufactured from a gather of glass that was probably pushed into a multisided mold to create a polyhedral form, and then drawn into a multisided, hollow cane. In an earlier report, it was speculated that the multisided shape may have resulted from marvering or an extrusion process (Ross 1976:686, Figure 338). No historical evidence for these alternatives has been located. Two subtypes are identified by the number of rows of ground facets present.

Beads with Two Rows of Ground Facets ($n = 102$; Varieties 2, 12, and 23). Manufactured by grinding two rows of facets, consisting of a facet on each corner of each end. These facets are probably ground before the individual beads are cut, snapped or chopped from their glass cane. From this technique, a 6-sided bead will have 18 flat surfaces, consisting of 6 molded sides and 12 ground facets, and a 7-sided bead will have 21 flat surfaces with 7 molded sides and 14 ground facets. These beads, and their polychrome counterparts (see below), are referenced variously, and incorrectly, as *Russian*, *Bristol*, *Hudson's Bay*, *chief* and *ambassador* beads, or described as *cornerless hexagonal or septagonal*, *short bugle*, *multi-faceted* or *cut* beads (e.g., Mille 1975; Neuwirth 1994; Pfeiffer 1983:209-210; Woodward 1965:12). Three varieties of 6-sided, transparent beads are recorded (Figure 59).

In the Pacific Northwest, these beads along with their polychrome equivalents (discussed below) have been identified incorrectly as *Russian* faceted beads, due to their late-18th- and early-19th-century introduction into the Alaskan region by Russian fur traders. The Russian-American Company did trade these beads, but the Russians probably did not manufacture them. According to Arthur Woodward,

Other beads, such as the large ultra marine blue faceted beads found along the coast of southern Alaska and British Columbia and as far south as Washington and Oregon, became "Russian beads," in spite of the fact that original packages of these beads, wrapped in grey coarse paper, were found unopened in the warehouse of the Russian American Fur Company at Sitka in 1867, marked "Brussels." In the latter case it was probably a repackaging job done by an export company in the Belgian city [1965:9].

Both monochrome and polychrome versions of these beads were probably manufactured in Bohemia. The Russian-American and Hudson's Bay companies were the primary source for the Pacific Northwest, at least for areas from Alaska to northern California near the Russian trading site of Fort Ross. In the Pacific Northwest, these bead types are associated primarily with post-1820 fur-trade and Native American sites, most of which were not associated with the Russian trade, and thus are not *Russian* beads. It would be just as incorrect to identify them as *Roman* beads because of their association with the Late Roman period site of Corinth in southern Greece (Davidson 1952:294, Plate 122) or as *Viking* beads because of their association with 10th-century Viking sites in Europe (Klindt-Jensen 1970:170-171).

Six and seven-sided varieties are reported at many western archaeological sites including 1829-1860 HBC Fort Vancouver, Washington (Ross 1990:Type If-d). Variety 2, 12, and 23 beads from Sacramento Block HI56 were recovered principally from pre-1855 Chinese contexts, with a few (Varieties 2 and 12) from 1855-1870 Chinese contexts, and one (Variety 2) from a ca. 1870 non-Chinese context (Table 38).

Beads with Four Rows of Ground Facets ($n = 1$; Variety 14). Manufactured by grinding four rows of facets, consisting of two rows with a facet on each corner of each end and two rows between the end rows and the molded sides. This results in a 7-sided bead having 35 flat surfaces, consisting of 7 molded sides and 28 ground facets. Only one variety of a transparent bead is recorded (Figure 59). The single Variety 14 bead was recovered from a pre-1855 Chinese context (Table 38).

Polychrome Drawn Beads with Cut Ends ($n = 42$)

Beads of this class have multicolored layers produced in at least two manners: (1) when one or more layers of glass were applied to a central core, and (2) when layers were fortuitously created. Beads with applied layers were drawn from a gather of glass of one color then covered with one or more layers of differently colored glass. Beads with fortuitous layers appear to have been produced from a gather of one color that, upon cooling, created multicolored layers (generally of the same color hue, but with a different chroma, color value, and/or diaphaneity). It is speculated that this phenomenon results as glass cools from its surface to its interior, causing different chemical elements to migrate slower or faster. As coalescing elements “freeze,” concentric layers that are brighter or duller, lighter or darker, or more opaque, translucent or transparent than adjacent layers are created. Whether or not beadmakers consciously created polychrome beads to exhibit these traits remains unknown. Once cooled, the polychrome canes were cut or chopped into bead-length segments for subsequent sorting and packaging. Beads of this class were not fire-polished or hot tumbled.

Polychrome, Complex, Multisided Drawn Beads with Ground Facets and Cut Ends ($n = 42$). These are fortuitously layered, polychrome beads, manufactured in the same manner as their monochrome equivalent (discussed above), and one subtype is recorded.

Beads with Two Rows of Ground Facets ($n = 42$; Varieties 1 and 4). Two varieties of transparent/translucent six-sided beads were recovered (Figure 59); each has two rows of ground facets. For a further discussion on this bead subtype, its sizes and cultural affiliation, see the discussion above for similar monochrome beads. Variety 1 beads were recovered principally from pre-1855 Chinese contexts, with two from an 1855-1870 Chinese context, and one from a ca. 1870 non-Chinese context (Table 38). Variety 4 beads were recovered principally from a ca. 1870 non-Chinese context, with some from a pre-1855 Chinese context (Table 38).

Monochrome Drawn Beads with a Hot-Tumbled Finish ($n = 201$)

These are hot-tumbled versions of monochrome beads with cut or chopped ends. Some specimens may exhibit a second layer of glass similar in color to its principal color (Kidd and Kidd 1970:48-49). After drawn canes were cut into bead-length segments, these segments were tumbled over a fire in a rotating container or drum that, during the mid-19th century, may have contained ash and sand (Hoppe and Hornschuch 1818), lime, and charcoal (Anonymous 1835; Bussolin 1847; Carroll 1917; Karklins with Adams 1990:72), plaster and graphite, or clay and charcoal dust (Francis 1979:10). This method of rounding sharp edges of beads cut from a drawn cane was invented by the Italian Luigi Pusinich and perfected in

1864 by Antonio Frigo (Gasparetto 1958:198). Prior to the invention of hot-tumbling, or the rotating-drum method, a less efficient furnace method was used:

In this process, the tubes [cut bead segments] were placed in a large copper pan with a mixture of powdered charcoal or ash and sand. The pan was placed in a *ferraccia* (*ferrazza*) furnace and the contents stirred until the tube segments were sufficiently rounded (Karklins and Adams 1990:72-73; Karklins and Jordan 1990:6). Although this method was used to round large and very large beads as well (Karklins and Adams 1990:73), it was a time-consuming operation as it took a long time for the thick tube segments to soften and become rounded [Karklins 1993:27].

It is difficult to impossible to distinguish furnace-rounded and hot-tumbled beads from one another. It is assumed that most rounded drawn beads manufactured prior to the adoption of hot-tumbling were generally larger, and may exhibit flat surfaces caused by contact of bead surfaces with the rounding pan. Hot-tumbled beads also can have flattened surfaces, generally created when a hot and plastic drawn cane was placed too quickly on a cooling floor or table. An earlier process for rounding drawn beads was in use at least from the early 17th century to the late 18th century. This method, called the *a speo* method, was used to round bead segments generally larger than 4 mm in diameter (Karklins 1993). For western North American sites, *a speo*-rounded beads have yet to be recognized in archaeological assemblages.

Monochrome, Cylindrical, Undecorated Drawn Beads with a Hot-Tumbled Finish ($n = 201$; Varieties 6, 8, 10, 11, 16, 21, 22, and 25). The simplest type of finished, monochrome, drawn beads is an undecorated one with a circular cross section. It is the most common type at western archaeological sites, and for Sacramento Block HI56 comprises 52.6% of the bead assemblage. From this site, these beads exist in one form: short (with a torus to round shape), and were manufactured from transparent and opaque glass. Eight varieties are recorded (Figure 60).

From the analysis of beads from other archaeological sites (e.g., Ross 1990), it has been ascertained that sizes can occur at regular intervals (e.g., 0.45-0.56 and 0.8-mm intervals). For beadmakers to obtain sizes measured to such fine intervals, they sorted beads by sieving, using stacked, graded wire screens (Bussolin 1847; Karklins with Adams 1990:73) with mesh openings decreasing 0.4 to 0.8 mm per screen. Hand-sorting might have resulted in the creation of these subtle and regular sizes, but it would have been labor intensive, more costly, and perhaps not as accurate.

Varieties of beads of this type found at western archaeological sites cannot be adequately evaluated due to the lack of comparable color terminology used by various authors; and no correlations of age for specific colors have been reported. Variety 6, 8, 10, and 11 beads from Sacramento Block HI56 were recovered from a ca. 1877 non-Chinese context (Table 38). Variety 16 ($n = 56$), 21, and 22 beads from Sacramento Block HI56 were recovered from pre-1855 Chinese contexts, while Variety 16 ($n = 5$) and 25 beads were recovered from 1855-1870 Chinese contexts (Table 38).

Monochrome, Cylindrical, Undecorated Drawn Beads with Hot-Tumbled Ends (n = 201)

VARIETY NUMBER	DECORATION	DIAPHANEITY LUSTER CORROSION PATINA	LAYERING COLOR MUNSELL NOTATION	SHAPE LENGTH FINISH	SIZE LEAST DIAMETER x LENGTH (mm) PERFORATION DIAMETER (mm)	PLATE NUMBER	COMPARATIVE NUMBERS	QUANTITY
10	Undecorated	Transparent Dull & Pitted Eroded Some w/ patina	Monochrome Clear ---	Cylindrical Short Hot Tumbled	Size 1 1.9-2.4 x 0.8-1.9 0.6-1.2	1b	Kidds' IIa	13
11	Undecorated	Opaque Dull Eroded No patina	Monochrome White to White on White N 9.5/	Cylindrical Short Hot Tumbled	Size 1 1.6-2.9 x 1.0-1.9 0.5-0.9	1c	Kidds' IIa	45
6	Undecorated	Opaque Dull to Shiny Eroded Patina	Monochrome Black N 2.0-2.75/	Cylindrical Short Hot Tumbled	Size 1 (n = 73) 2.1-3.4 x 1.4-2.3 0.3-1.2 Size 2 (n = 3) 4.8-5.0 x 3.4-3.8 1.3	1d	Kidds' IIa	76
16	Undecorated	Transparent Dull Eroded & Pitted Patina	Monochrome Red 5R3/8	Cylindrical Short Hot Tumbled	Size 1 1.9-2.6 x 0.8-1.4 0.5-1.0	1e	Kidds' IIa	61
22	Undecorated	Opaque Dull & Fibrous Eroded & Pitted Patina	Monochrome Brownish-yellow 7.5YR7/10	Cylindrical Short Hot Tumbled	Size 1 1.9 x 1.3 0.5	1f	Kidds' IIa	1
25	Undecorated	Transparent Dull Eroded No patina	Monochrome Yellowish-green 7.5GY7/8	Cylindrical Short Hot Tumbled	Size 1 1.5-1.6 x 0.8-0.9 0.4-0.5	1g	Kidds' IIa	2
8	Undecorated	Opaque Dull & Fibrous Eroded & Pitted Patina	Monochrome Green 5G5/6	Cylindrical Short Hot Tumbled	Size 1 1.7 x 0.8 1.1	1h	Kidds' IIa	1
21	Undecorated	Transparent Dull Eroded No patina	Monochrome Green 2.5G5/6	Cylindrical Short Hot Tumbled	Size 1 (n = 1) 1.5 x 0.8 0.6 X Size 2 (n = 1) 3.1 x 1.3 1.4	1i	Kidds' IIa	2

Polychrome, Cylindrical, Undecorated Drawn Beads with Hot-Tumbled Ends (n = 11)

15	Undecorated	Transparent on Opaque Dull Eroded & Pitted Patina	Polychrome Purplish-red on White 2.5R3/8 on N 9.5/	Cylindrical Short Hot Tumbled	Size 1 3.4-3.5 x 2.0-2.7 0.8	1j	Kidds' IVa	2
26	Undecorated	Transparent on Opaque Dull Eroded & Pitted Patina	Polychrome Purplish-red on Very Light Purplish-red 5R3/10 on 2.5R8/2	Cylindrical Short Hot Tumbled	Size 1 5.5 x 5.0 1.4	1k	Kidds' IVa	1
20	Undecorated	Transparent on Opaque Dull Eroded & Pitted No patina	Polychrome Red on White 5R3/10 on N 9.5/	Cylindrical Short Hot Tumbled	Size 1 2.0-3.3 x 0.8-2.0 0.5-1.3	1l	Kidds' IVe	7
19	Undecorated	Opaque on Transparent Dull No corrosion No patina	Polychrome Brownish-red on Very Light Green 7.5R4/8 on 10G9/	Cylindrical Short Hot Tumbled	Size 1 1.6 x 1.4 0.5	1m	Kidds' IVa	1

Figure 60. Drawn beads with hot-tumbled ends (n = 212)

Polychrome Drawn Beads with a Hot-Tumbled Finish ($n = 11$)

These are hot-tumbled versions of polychrome beads with cut or chopped ends, finished in the same manner as the monochrome beads with a hot-tumbled finish. Only polychrome beads with distinctive layers of color are recorded within this bead grouping.

Polychrome, Cylindrical, Undecorated Drawn Beads with a Hot-Tumbled Finish ($n = 11$; Varieties 15, 19, 20, and 26). This is the second most common bead type recovered from western archaeological sites; it was relatively rare at this site, however, with only 2.9% of the bead assemblage consisting of four varieties (Figure 60).

The red-on-white, red-on-light pink, and brownish red-on-green varieties are often termed *cornaline d'Aleppo* or *Hudson's Bay Company* beads (e.g., Jenkins 1975; Mille 1975). They are commonly associated with Native American sites, and were especially common in the early and mid-19th century.

Ranking beads by color and value using the 1831-1851 inventories for Fort Union, North Dakota (DeVore 1992:117-127), indicates that red was the most expensive of the colors, followed by blue, green, and white, with black and yellow the least expensive. It is inferred from these relative values that polychrome red-on-green, red-on-white, red-on-yellow, and red-on-black beads were manufactured not for their aesthetic appeal, but for economic considerations. Expensive ruby-red glass used gold as a coloring agent, and to reduce costs it was layered on inexpensive green, white, black, and yellow glass.

Variety 15, 19, 20, and 26 beads were recovered from pre-1855 Chinese contexts (Table 38).

Wound Beads ($n = 10$)

Simple wound beads were manufactured by wrapping or winding molten glass around a rotating mandrel, such as a wire, rod, or straw coated with a clay slip. Beads were produced individually or conjoined (probably accidentally) and were then removed from their shafts, annealed, cleaned, sorted, and packaged. At this site, complex and decorated wound beads were altered by molding or shaping, or by applying dots. Shaped wound beads were manufactured by winding glass on a mandrel and then, by using (a) an open or trench mold, the decoration was pressed (inlaid) into the surface while the glass was turned, or (b) a pinching tool with molded faces (similar to a bullet mold) was used to press the decoration into the surface while the glass was stationary.

Wound beads comprise the second most common group at western archaeological sites dating to the 18th and 19th centuries. Because of the lack of comparative terminology for wound bead shapes, it is difficult to compare wound bead descriptions among the archaeological reports for the region. At this site, wound beads only comprised 2.6% of the bead assemblage, comprised of a two major classes on the basis of manufacturing techniques.

Monochrome Wound Beads ($n = 8$)

These consist of a monochrome body that could have been unshaped or shaped, either undecorated or decorated.

Monochrome, Ovoidal, Undecorated Wound Beads ($n = 2$; Variety 9). These are roughly ovoidal or barrel-shaped, and only one variety is recorded (Figure 61a). Beads of this variety are reported from 1829-1860 HBC Fort Vancouver, Washington (Ross 1990: Variety W1c-bops-2) and the 1812-1840 Fort Ross Native Alaskan Village Site (CA-SON-1897/H) (Ross 1995:Variety 63). Variety 9 beads from Sacramento Block HI56 were recovered from a ca. 1877 non-Chinese context (Table 38).

Monochrome, Ovoidal Wound Beads with Inlaid Complex Dots ($n = 2$; Variety 13). These are ovoidal, having received their shape by trough-molding after application of complex (i.e., multicolored) decorative dots. Only one variety is recorded (Figure 61a). No beads of this variety are reported from well-dated, western North American contexts. Variety 13 beads from Sacramento Block HI56 were recovered from a pre-1855 Chinese context (Table 38).

Monochrome, Ellipsoidal Undecorated Beads ($n = 1$; Variety 17). These are roughly ellipsoidal with no decoration, and only one variety is recorded (Figure 61a). This bead appears to be a core from a polychrome bead, probably one which had a wound outer red layer of glass. No beads of this variety are reported from well-dated, western North American contexts. The single Variety 17 bead from Sacramento Block HI56 was recovered from a pre-1855 Chinese context (Table 38).

Monochrome, Toroidal Undecorated Beads ($n = 5$; Variety 5). These are roughly doughnut-shaped with no decoration, and only one variety is recorded (Figure 61a). Beads of this type, but larger and generally colored, commonly occur on Chinese baskets. Based upon the high frequency of beads attributed to European manufacture within this assemblage and the lack of any positively identified beads from China, it is inferred that these Variety 5 beads represent *ring* beads known to have been manufactured in Europe (e.g., Neuwirth 1994:316). No beads of this variety are reported from well-dated, western North American contexts. Variety 5 beads from Sacramento Block HI56 were recovered from an 1877 non-Chinese context (Table 38).

Mold-Pressed Beads ($n = 6$)

Manufactured by pinching or pressing molten glass in a two-part mold. The perforations were produced by pushing a pin into the mold and through the glass. Mold-pressed beads from this site are the least common, comprising 1.6% of the bead assemblage.

Monochrome Mold-Pressed Beads ($n = 6$)

Monochrome Spheroidal Mold-Pressed Beads with Ground Facets ($n = 6$; Varieties 18 and 24). Probably manufactured in Bohemia, and during the first half of the 19th century they were molded individually or in pairs by pressing glass in iron tongs equipped with opposing hemispherical cavities. Perforations were partially formed by either a tapered pin that appears to have been an integral part of one cavity (Ross 1974:17 and Fig. 3; 1976:759-762), or by a pin inserted through one cavity (Neuwirth 1994; Ross with Pflanz 1989). Upon removal from the mold, the preform had a partially formed perforation and a

Figure 61a. Wound beads (n = 10)



Monochrome, Ovoidal, Undecorated Wound Beads (n = 2)

VARIETY NUMBER	DECORATION COMMENTS	DIAPHANEITY LUSTER CORROSION PATINA	LAYERING COLOR MUNSELL NOTATION	SHAPE LENGTH	SIZE LEAST DIAMETER x LENGTH (mm) PERFORATION DIAMETER (mm)	PLATE NUMBER	COMPARATIVE NUMBERS	QUANTITY
9	Undecorated	Opaque Dull Eroded Patina	Monochrome Black N 1/	Ovoidal Short	Size 1 5.2-5.6 x 3.2-4.4 1.8-2.3	2h	Kidds' Wic to Wtb	2



Monochrome, Ovoidal Wound Beads with Inlaid Complex Dots (n = 2)

13	5 rows of inlaid complex dots Transparent Purple on Opaque White dots 5PB4/6? on N 9.5/	Opaque Dull Eroded Patina	Monochrome Black N 1.25/	Ovoidal Short to Long	Size 1 9.5-10.8 x 9.8-10.0 1.9-2.7	2k	Kidds' W11tb	2
----	---	---------------------------	--------------------------	-----------------------	--	----	--------------	---



Monochrome, Ellipsoidal Undecorated Wound Bead (n = 1)

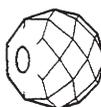
17	Undecorated Possibly the core of a red-on-yellow polychrome bead	Opaque Dull Eroded No patina	Monochrome Yellow 2.5Y8/8	Ellipsoidal Long	Size 1 3.6 x 4.9 2.1	2i	Kidds' Wic	1
----	---	------------------------------	---------------------------	------------------	----------------------------	----	------------	---



Monochrome, Toroidal Undecorated Wound Beads (n = 5)

5	Undecorated	Transparent Shiny No corrosion Patina	Monochrome Clear ---	Toroidal ---	Size 1 9.0-9.5 x 2.8-3.4 4.8-5.3	2j	Kidds' Wtd	5
---	-------------	---------------------------------------	----------------------	--------------	--	----	------------	---

Figure 61b. Mold-pressed beads (n = 6)



Monochrome, Spheroidal Mold-Pressed Beads with Ground Facets (n = 6)

	DECORATION COMMENTS	DIAPHANEITY LUSTER CORROSION PATINA	LAYERING COLOR MUNSELL NOTATION	SHAPE LENGTH	SIZE LEAST DIAMETER x LENGTH (mm) PERFORATION DIAMETER (mm)	PLATE NUMBER	COMPARATIVE NUMBERS	QUANTITY
24	5 rows of random ground facets with ground top facet Biconical, pierced, and punched perforation	Transparent Dull No corrosion Patina	Monochrome Yellowish-green 7.5GY8/8	Spheroidal Short	Size 1 10.9 x 10.3 Top 0.8/Bottom 3.0	2l	Kerkilins MPIIa	1
18	3 rows of random ground facets w/ ground top and some bottom facets Conical pierced perforation	Transparent Dull Eroded Patina	Monochrome Purplish-red 2.5R3/8	Spheroidal Short	Size 1 5.0-5.4 x 4.7-5.2 Top 0.9-1.0/Bottom 1.7-1.8	2m	Kerkilins MPIIa	5

mold seam around its circumference with fine glass fins protruding from the seam. Facets were subsequently ground on the bead, thus removing the fins (the fins also could be removed prior to faceting by sieving or abrasion), and the incomplete perforation was punched through, forming a roughly spherical faceted bead with a bi-conical perforation.

A few specimens from Fort Vancouver exhibit a vertical cleft (Ross 1990:Plate IVy), possibly caused by an insufficient amount of glass that could not completely fill the lower hemisphere of the mold as glass flowed around the post or as a pin was inserted for form the perforation. It may also be possible that this cleft was produced by a three-part mold, although no historical evidence for such a mold has been located.

These beads emulate the appearance of cut crystal or cut jewelry beads, and the products from the Bohemian industry were collectively referred to as artificial jewelry. In addition, unfinished beads (those with an incomplete perforation) could be used as heads for hat pins. Just such an “unfinished” bead is reported from a ca. 1900 context in Old Sacramento, California (Motz and Schulz 1980:57, Type 49, Figure 4e).

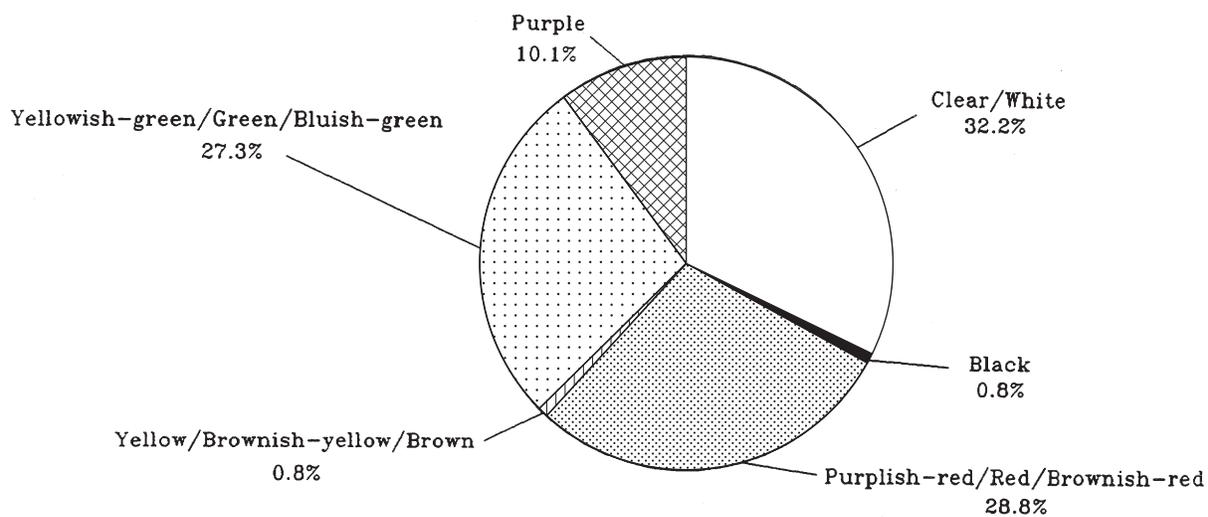
Among collectors, beads similar to these, but of later manufacture, are called *cut*, *Czech*, or *vaseline* beads (e.g., Johnson 1975), presumably for their technique of manufacture emulating cut stone beads, their country of manufacture, or their glossy appearance, respectively. This glossy finish may have been created by washing the beads in an acid bath, similar to the 20th-century technique used to polish cut, lead crystal glassware (Jones and others 1985:55, 56). Presumably, if such a bath was employed for later beads, it was not used in the mid-19th century.

Two varieties are recorded (Figure 61b), one with a pierced perforation (Variety 18) and the other with a pierced and punched perforation (Variety 24). Variety 18 and 24 beads were recovered from pre-1855 Chinese contexts (Table 38).

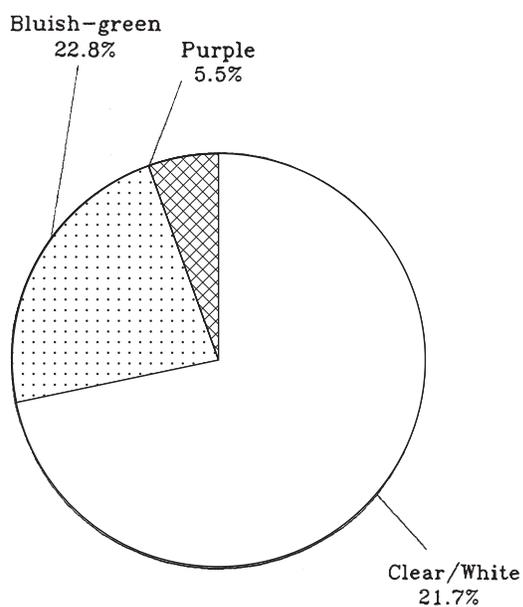
ETHNIC, TEMPORAL, AND ECONOMIC INFERENCES

Beads from Sacramento Block HI56 were recovered from four datable and two ethnic contexts (Table 38). Embroidery or seed beads (monochrome and polychrome, cylindrical, undecorated drawn beads with hot-tumbled ends including Varieties 6, 8, 10, 11, 15, 16, 19-22, 25, and 26) comprise 55.5% of the entire bead assemblage, or 47.0% of the beads from pre-1855 Chinese contexts, and 87.6% of the beads from 1877 non-Chinese contexts. Faceted beads (drawn and mold-pressed beads including Varieties 1, 2, 4, 12, 14, 18, 23, and 24) comprise 39.3% of the entire bead assemblage, 49.4% of the beads from pre-1855 Chinese contexts, and 77.8% of the beads from 1870 non-Chinese contexts. These distributions suggest that three ethnic subassemblages exist:

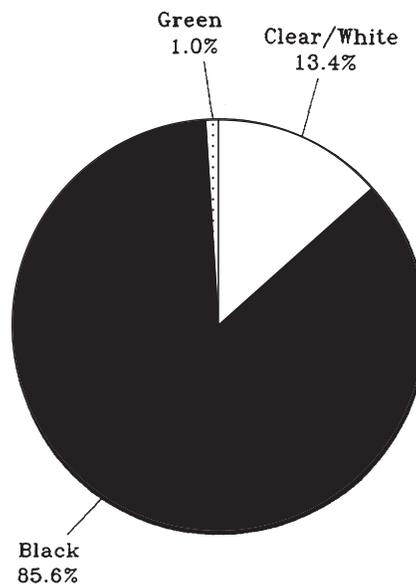
- pre-1855 to 1870 Chinese context
- a ca. 1870 non-Chinese context
- a ca. 1877 non-Chinese context



CHINESE CONTEXTS



1870 NON-CHINESE CONTEXT



1877 NON-CHINESE CONTEXT

Figure 62. Comparison of bead color frequencies for Chinese and non-Chinese Contexts

The Chinese subassemblages are characterized as follows:

- a high percentage of large, relatively expensive, faceted beads (50.9%)
- a high percentage of small, relatively inexpensive, embroidery (47.6%) beads
- high percentages of clear/white (32.2%), reddish (28.8%), and greenish (27.3%) beads, a moderate percentage of purple beads (10.1%), and very low percentages of black, yellow, and brown beads (Figure 62)
- relatively expensive polychrome beads
- relatively expensive decorated beads

None of beads in the Chinese subassemblage appear to have been manufactured in China; rather most are attributed to European sources. This suggests that occupants of the Chinese contexts were acquiring beads from American suppliers.

Large faceted beads are often used for religious articles, such as rosaries, altar decorations, and funerary or mourning articles. Their presence within the Chinese subassemblage suggests that occupants may have adopted European religious beliefs, or may have been acquiring beads from Christian sources. The presence of relatively expensive and inexpensive beads suggests the occupants of the Chinese contexts may have had a moderate socioeconomic status.

The ca. 1870 non-Chinese context is characterized as having:

- only large, relatively expensive, sided or faceted beads, with a very high percentage of faceted beads (77.8%); and
- a very high percentage of clear/white beads (66.7%), a high percentage of greenish beads (22.8%), and a low percentage of purple beads (5.5%), to the total exclusion of any other colors (Figure 62).

As with the beads from Chinese contexts, the presence of the large, sided or faceted European beads suggests some relationship with European religious articles. The colors of these beads are somewhat similar to colors associated with Chinese contexts, but due to the low frequencies of beads recovered, any comparisons among these contexts is tentative. In contrast, a comparison with the colors associated with the ca. 1877 non-Chinese context clearly demonstrates a difference. The presence of relatively expensive beads suggests the occupants of the ca. 1870 non-Chinese context may have had a moderately high socioeconomic status.

The ca. 1877 non-Chinese context is characterized as having:

- a very high percentage of small, relatively inexpensive, embroidery beads (87.6%);
- a moderate percentage of more expensive plain decorative beads (12.4%); and
- a very high percentage of black beads (85.6%), a moderate percentage of clear/white beads (13.4%), and a minor percentage of green beads (1.0%), to the total exclusion of any other colors.

This subassemblage appears to contain beads used principally for decorating clothing, personal articles, or household items. However, the large quantity of black beads suggests beaded articles may have been related to mourning customs. The presence of relatively inexpensive beads suggests that occupants of the ca. 1877 non-Chinese contexts may have had a low to moderate socioeconomic status.

ANALYSIS OF ANIMAL BONES

by Sherri M. Gust

METHODOLOGY

Data on provenience, taxon, element, portion, side, epiphyseal fusion status, butchering cuts, tool marks, taphonomic factors, and evidence of heat alteration were recorded for each specimen in the HI56 Block faunal collection using a computerized data-entry system (Gust 1995). The comparative collections of the Anthropological Studies Center at Sonoma State University, the California Academy of Sciences, the Museums of Vertebrate Zoology and Paleontology of the University of California at Berkeley, the George C. Page Museum, and the Natural History Museum of Los Angeles County were used for identification. Mammals and birds were identified by Sherri Gust, Scott McCartney, and Samantha Schell. Turtles were identified by Howard Hutchinson.

The faunal data are available on disk upon request to Anthropological Studies Center, Sonoma State University, Bldg. 29, 1801 E. Cotati Blvd., Rohnert Park, CA 94928. There may be an administrative charge to cover cost of disks and photocopying of accompanying documentation.

The butchering units and pounds of meat weight were calculated as specified in Gust (1996). Economic ranking of meat cuts follows Schulz and Gust (1983) and Gust (1996). The age-at-slaughter profiles are cumulative death curves based on times of epiphyseal fusion for domestic animals given in Silver (1969). Characteristics of butchering-tool marks are given in Gust (1983). Retail divisions of the carcass are illustrated in Figures 63 to 65.

FINDINGS

818 Sixth Street

Privy 500

Cattle bones were the most abundant faunal remains from Privy 500, followed by sheep and pig (Table 39). A few specimens of small food animals were present, namely jackrabbit, chicken, turkey, wild ducks and geese, and dove. One specimen of dog and several of cat were also present.

Beef accounted for 85% of the meat represented, with 10% from mutton and only 4% from pork (Table 40). Most of the meat was from the round and chuck. Overall, only 13% of the meat was from high-priced cuts, 68% was from moderately priced cuts, and 19% was from low-priced cuts. Most of the high-priced cuts were pork and mutton. The other food animals represented contributed variety, but no substantial amount of meat.

The majority of butchering tool marks were from handsaws (77%). Cleavers and axes accounted for 20% and knife marks 3%. Butchering marks were typical of the time and place.

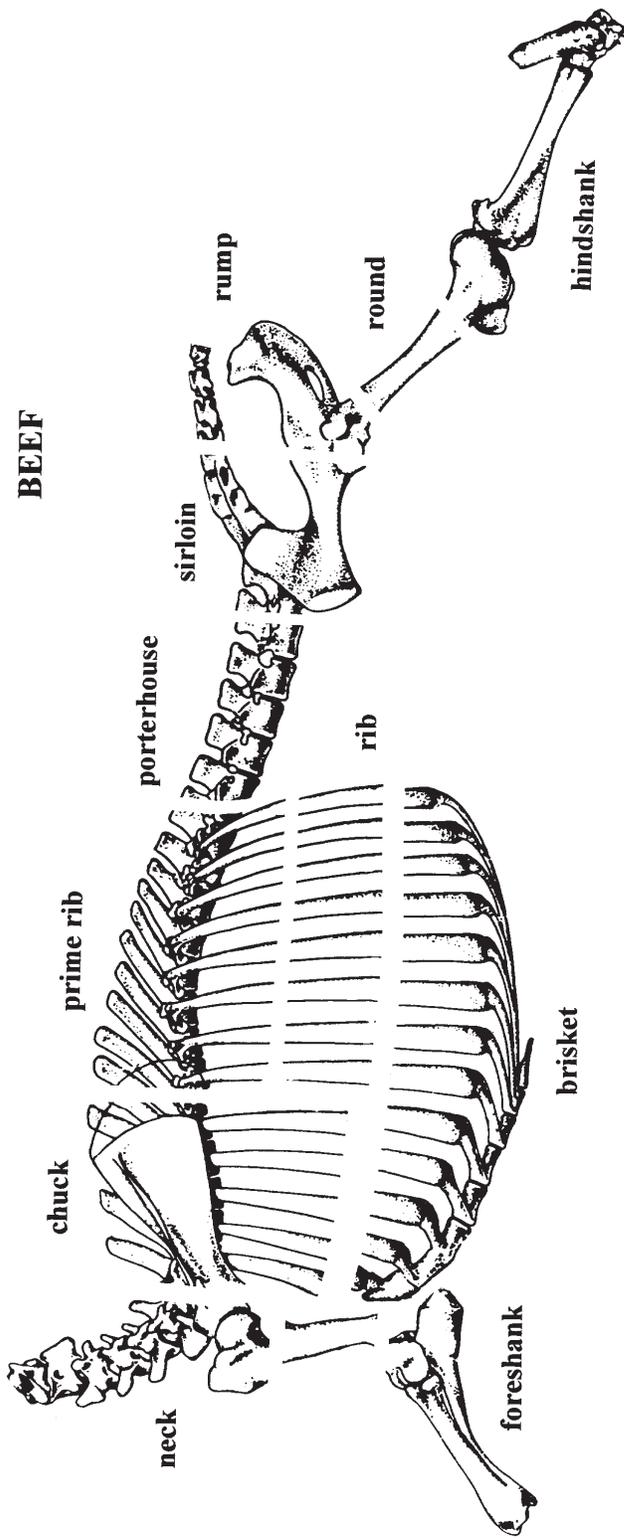


Figure 63. Retail butchering divisions, beef.

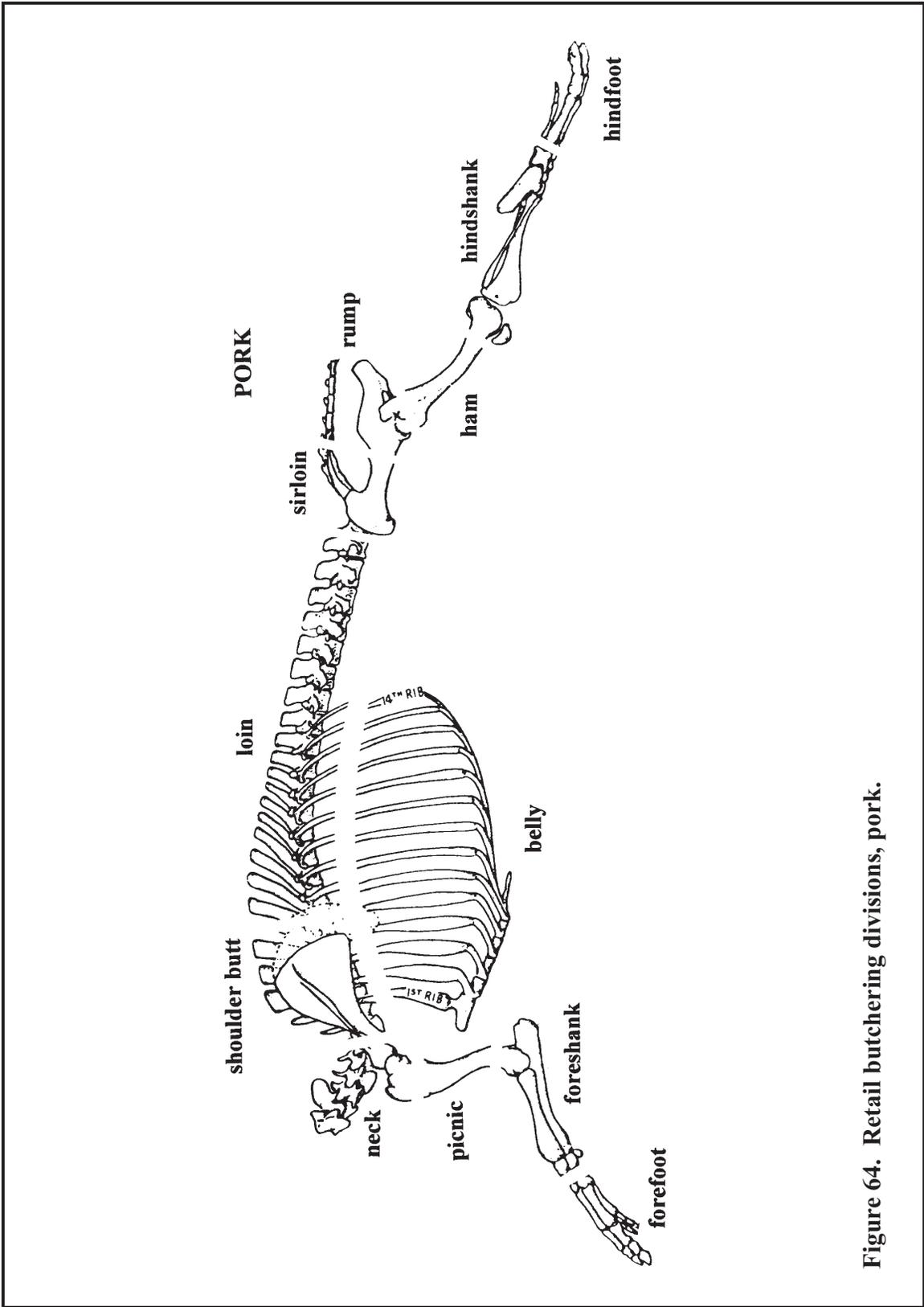


Figure 64. Retail butchering divisions, pork.

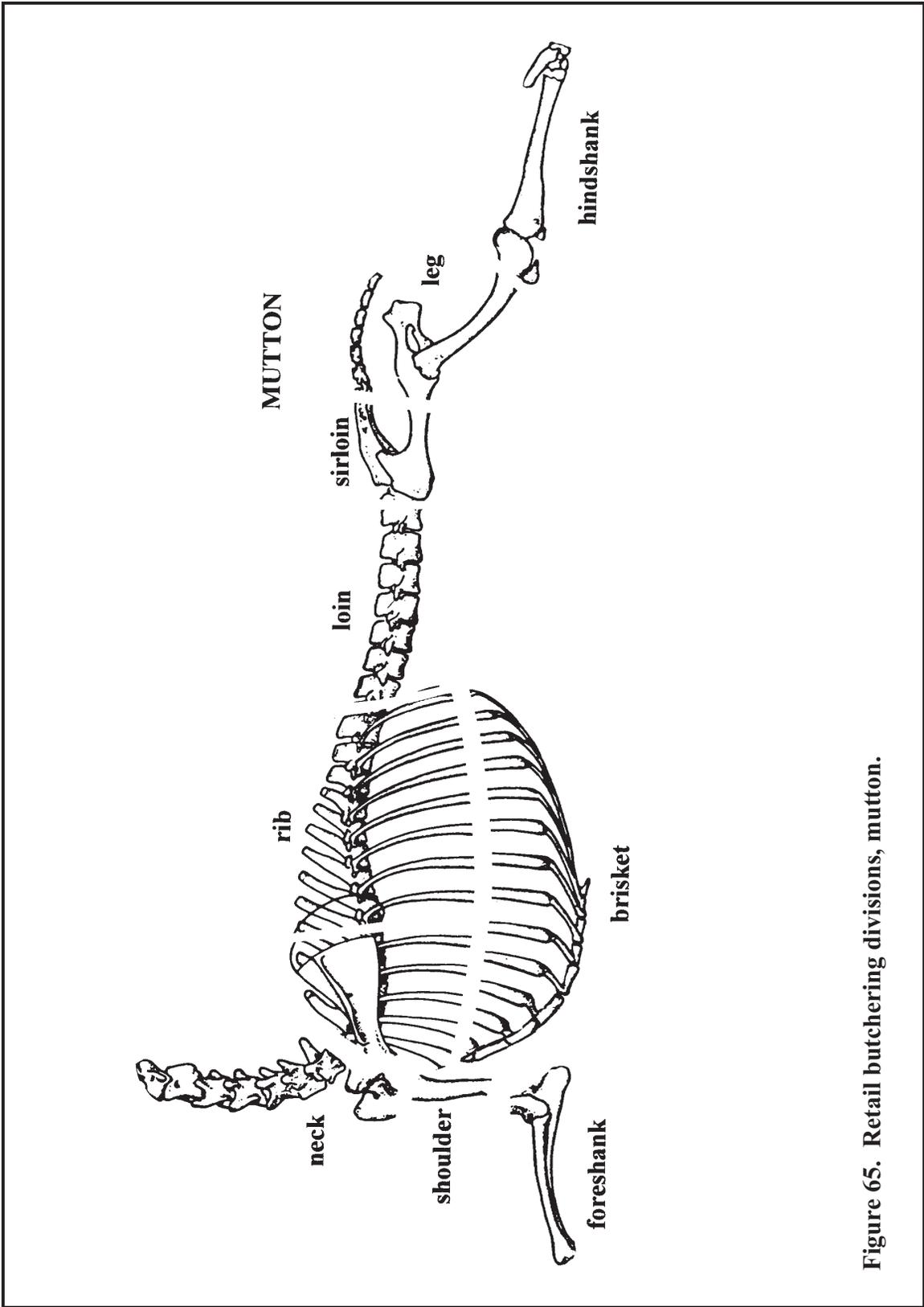


Figure 65. Retail butchering divisions, mutton.

Table 39. Animals Represented by Number of Identified Specimens for Privy 500, HI56 Block Sacramento

Common Name	Scientific Name	P500
Major Meat Animals		
cattle	<i>Bos taurus</i>	123
sheep	<i>Ovis aries</i>	62
pig	<i>Sus scrofa</i>	26
artiodactyl	Artiodactyla	44
Minor Meat Animals		
jackrabbit	<i>Lepus californicus</i>	4
Incidental Animals		
dog	<i>Canis familiaris</i>	1
cat	<i>Felis catus</i>	10
TOTAL		270
Domestic Poultry		
chicken	<i>Gallus gallus</i>	3
turkey	<i>Meleagris gallopavo</i>	1
Wild Game Birds		
Canada goose	<i>Branta canadensis</i>	1
goose	Anseridae	1
duck	Anatidae	2
mourning dove	<i>Zenaidura macroura</i>	1
Incidental Birds		
Unidentified Birds	Aves	6
TOTAL		15

Table 40. Meat Weight by Economic Status for Privy 500, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	9.0	3.5	
sirloin	8.1	3.1	
prime rib	1.4	0.5	
moderate			
round	72.8	28.0	
rump	19.2	7.4	
chuck	91.2	35.0	
rib	10.5	4.0	
low			
hindshank	0.0		
brisket	12.3	4.7	
foreshank	5.8	2.2	
neck	30.0	11.5	
TOTAL	260.3	100.0	85
MUTTON			
high			
loin	4.4	13.9	
sirloin	1.5	4.7	
leg	6.9	21.8	
moderate			
rib	2.8	8.8	
shoulder	8.0	25.2	
low			
hindshank	0.8	2.5	
brisket	1.2	3.8	
foreshank	0.5	1.6	
neck	5.6	17.7	
TOTAL	31.7	100	10
PORK			
high			
sirloin	1.4	10.8	
loin	4.2	32.3	
ham	1.6	12.3	
moderate			
rump	2	15.4	
shoulder butt	0.7	5.4	
picnic	-	0.0	
low			
belly	-		
neck/shanks	2.4	18.5	
jowl/feet	0.7	5.4	
TOTAL	13	100	4
GRAND TOTAL	305.0		

525/527 I Street

Pit 69

Cattle bones dominated in this feature, followed by sheep and pig (Table 41). Elk, antelope, and jackrabbit were also present in small quantity. Chicken was relatively abundant, while turkey, wild duck and goose, and dove were represented. Dog, cat, and bobcat were represented by a couple of specimens each. The bobcat may have represented an animal shot while out hunting and brought back for its pelt.

Most of the meat weight was from beef—85% (Table 42). The round and chuck were the predominate cuts, but sirloin and porterhouse were also present. Overall, 21% of the meat was from high-priced cuts, 57% was from moderately priced cuts, and 23% was from low-priced cuts.

Most of the butchering tool marks were from handsaws (76%). Cleavers and axes accounted for 20% and knife marks 4%. Butchering marks were typical of the time and place.

Pit 83

Most of the bones represented in this feature were from cattle, while sheep and pig were also represented (Table 43). There were additional food bones from sheep, pig, elk, jackrabbit, chicken, turkey, wild duck, and goose. At least three kittens and one bobcat were present in the trash pit. One human tooth was also present and contained a large cavity. It probably represents a tooth extraction.

About 76% of the meat weight was beef and an additional 16% was mutton (Table 44). Chuck cuts were most abundant, but porterhouse and sirloin were also relatively abundant. Overall, 31% of the meat was from high-priced cuts, 51% was from moderately priced cuts, and 17% was from low-priced cuts.

The butchering-tool marks were mostly from handsaws (77%). Cleavers and axes accounted for 19% and knife marks for 4%. Butchering marks were typical of the time and place.

Pit 16 Early

Chicken bones were more abundant than any other animal remains in this feature (Table 45). It contained numerically equal amounts of cattle and pig bone. Sheep, deer, jackrabbit, turkey, and wild duck, and goose also contributed to the diet. The specimen of pheasant recovered did not appear to be the species released in California and may represent an import from China. Two kinds of Chinese turtles were also represented in the sample and were certainly imported. One of the turtles would have exceeded 2 feet in length in life. Incidental animals included dog, cat, rat, and gopher.

Using meat weight, beef dominated the sample with 79% (Table 46). Mutton contributed 6% and pork 15%. The amount of meat represented by the chicken remains would have been approximately equal to the amount of both the mutton and the pork. No one cut of meat was most abundant. The feature was characterized by small amounts of many sources of meat. Overall, 23% of meat was from high-priced cuts, 48% was from moderately priced cuts, and 29% was from low-priced cuts.

Table 41. Animals Represented by Number of Identified Specimens for Pit 69, HI56 Block Sacramento

Common Name	Scientific Name	P69
Major Meat Animals		
cattle	<i>Bos taurus</i>	138
sheep	<i>Ovis aries</i>	82
pig	<i>Sus scrofa</i>	44
artiodactyl	Artiodactyla	49
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	1
antelope	<i>Antilocapra americana</i>	1
jackrabbit	<i>Lepus californicus</i>	1
Incidental Animals		
dog	<i>Canis familiaris</i>	1
cat	<i>Felis catus</i>	3
bobcat	<i>Lynx rufus</i>	1
Unidentified Mammals	Mammalia	1
TOTAL		322
Domestic Poultry		
chicken	<i>Gallus gallus</i>	39
turkey	<i>Meleagris gallopavo</i>	5
Wild Game Birds		
goose	Anseridae	3
duck	Anatidae	6
mourning dove	<i>Zenaidura macroura</i>	1
Unidentified Birds	Aves	54
TOTAL		108

Table 42. Meat Weight by Economic Status for Pit 69, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	18.0	6.3	
sirloin	16.2	5.7	
prime rib	8.6	3.0	
moderate			
round	72.8	25.5	
rump	26.4	9.2	
chuck	76.0	26.6	
rib	2.1	0.7	
low			
hindshank	11.5	4.0	
brisket	16.1	5.6	
foreshank	20.2	7.1	
neck	18.0	6.3	
TOTAL	285.9	100.0	85
MUTTON			
high			
loin	3.2	11.6	
sirloin	2.5	9.1	
leg	9.5	34.5	
moderate			
rib	1.6	5.8	
shoulder	6.4	23.3	
low			
hindshank	2.1	7.6	
brisket	1.6	5.8	
foreshank	0.6	2.2	
neck	-		
TOTAL	27.5	100	8
PORK			
high			
sirloin	7.7	31.2	
loin	4.2	17.0	
ham	-		
moderate			
rump	4.0	16.2	
shoulder butt	2.8	11.3	
picnic	-		
low			
belly	-		
neck/shanks	4.6	18.6	
jowl/feet	1.4	5.7	
TOTAL	24.7	100	7
GRAND TOTAL	338.1		

Table 43. Animals Represented by Number of Identified Specimens for Pit 83, HI56 Block Sacramento

Common Name	Scientific Name	P83
Major Meat Animals		
cattle	<i>Bos taurus</i>	78
sheep	<i>Ovis aries</i>	48
pig	<i>Sus scrofa</i>	32
artiodactyl	Artiodactyla	38
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	2
jackrabbit	<i>Lepus californicus</i>	3
Incidental Animals		
cat	<i>Felis catus</i>	20
bobcat	<i>Lynx rufus</i>	2
human	<i>Homo sapiens</i>	1
Unidentified Mammals	Mammalia	9
TOTAL		233
Domestic Poultry		
chicken	<i>Gallus gallus</i>	14
turkey	<i>Meleagris gallopavo</i>	2
Wild Game Birds		
goose	Anseridae	3
duck	Anatidae	6
Unidentified Birds	Aves	29
TOTAL		54

Table 44 Meat Weight by Economic Status for Pit 83, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	21.6	13.2	
sirloin	16.2	9.9	
prime rib	1.4	0.9	
moderate			
round	13.0	7.9	
rump	9.6	5.9	
chuck	69.6	42.5	
rib	2.1	1.3	
low			
hindshank	7.7	4.7	
brisket	5.2	3.2	
foreshank	7.7	4.7	
neck	9.6	5.9	
TOTAL	163.7	100.0	76
MUTTON			
high			
loin	0.4	1.2	
sirloin	1.5	4.4	
leg	18.9	55.8	
moderate			
rib	3.2	9.4	
shoulder	5.8	17.1	
low			
hindshank	1.3	3.8	
brisket	0.4	1.2	
foreshank	0.8	2.4	
neck	1.6	4.7	
TOTAL	33.9	100	16
PORK			
high			
sirloin	2.1	12.8	
loin	5.3	32.3	
ham	-		
moderate			
rump	5.0	30.5	
shoulder butt	-	-	
picnic	1.0	6.1	
low			
belly	-		
neck/shanks	1.0	6.1	
jowl/feet	2.0	12.2	
TOTAL	16.4	100	8
GRAND TOTAL	214.0		

Table 45. Animals Represented by Number of Identified Specimens for Pit 16, Early, HI56 Block Sacramento

Common Name	Scientific Name	P16E
Major Meat Animals		
cattle	<i>Bos taurus</i>	38
sheep	<i>Ovis aries</i>	18
pig	<i>Sus scrofa</i>	38
artiodactyl	Artiodactyla	10
Minor Meat Animals		
deer	<i>Odocoileus hemionus</i>	1
jackrabbit	<i>Lepus californicus</i>	2
Incidental Animals		
dog	<i>Canis familiaris</i>	5
cat	<i>Felis catus</i>	17
rat	<i>Rattus sp.</i>	21
pocket gopher	<i>Thomomys bottae</i>	3
rodent	Rodentia	2
Unidentified Mammals	Mammalia	29
TOTAL		184
Domestic Poultry		
chicken	<i>Gallus gallus</i>	68
turkey	<i>Meleagris gallopavo</i>	22
Wild Game Birds		
goose	Anseridae	3
duck	Anatidae	4
pheasant	<i>Phasianus sp.</i>	1
Unidentified Birds	Aves	146
TOTAL		244
Reptiles		
Chinese turtles		
soft shell	<i>Trionyx sp.</i>	3
Batagurid	Batagurinae	14
TOTAL		17

Table 46. Meat Weight by Economic Status for Pit 16, Early, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	3.6	4.4	
sirloin	5.4	6.7	
prime rib	4.3	5.3	
moderate			
round	13.0	16.0	
rump	14.4	17.7	
chuck	4.6	5.7	
rib	10.5	12.9	
low			
hindshank	11.5	14.2	
brisket	1.9	2.3	
foreshank	9.6	11.8	
neck	2.4	3.0	
TOTAL	81.2	100.0	79
MUTTON			
high			
loin	2.0	33.9	
sirloin	-	-	
leg	1.9	32.2	
moderate			
rib	-	-	
shoulder	0.5	8.5	
low			
hindshank	0.5	8.5	
brisket	-	-	
foreshank	0.2	3.4	
neck	0.8	13.6	
TOTAL	5.9	100	6
PORK			
high			
sirloin	2.8	18.1	
loin	3.5	22.6	
ham	-	-	
moderate			
rump	1.0	6.5	
shoulder butt	4.9	31.6	
picnic	-	-	
low			
belly	-	-	
neck/shanks	1.0	6.5	
jowl/feet	2.3	14.8	
TOTAL	15.5	100	15
GRAND TOTAL	102.6		

Handsaws made most of the butchering-tool marks in this feature (65%). Cleavers and axes accounted for 30% and knife marks 5%. Butchering marks were typical of the time and place.

Pit 16 Late

Cattle, sheep, pig, jackrabbit, chicken, and duck bones were remnants of meals recovered (Table 47), while rat bones were incidental. Beef constituted 59% of the meat weight represented in the sample (Table 48). Pork contributed 8% and mutton 33%. Most of the beef was from the chuck and round. Overall, 46% of the meat was from high-priced cuts, 33% was from moderately priced cuts, and 22% was from low-priced cuts. Most of the high-priced meat was leg of mutton and would have been porterhouse steaks and most of the low-priced meat was beef brisket.

Handsaws made most of the butchering-tool marks in this feature (69%). Cleavers and axes account for 27%, and knife marks for 4%. Butchering marks were typical of the time and place.

513/515 I Street

Layer 954

This sheet of refuse contained an extremely large and diverse collection of animal bone from the largest sample of bone on this block. Cattle were far more abundant than any other animal numerically (Table 49). Pig, sheep, deer, and elk were the other large animals represented. Chicken, wild goose, wild ducks, and doves were part of the diet also. Additionally, Sandhill crane and tundra swan were present in the sample. These two large birds, along with most of the wild ducks and geese, were only present in California during the winter season and must represent deposition during that period. Incidental animals included rat, dog, cat, squirrel, gopher, and crow. Two human teeth were recovered also. Both had large cavities and one had very distinct plier marks where it was gripped during extraction.

Beef constituted most of the diet by meat weight, with 87% (Table 50). Pork accounted for 10% and mutton for 3%. The meat weight represented by the domestic poultry and wild game birds would have been about 100 pounds, which is about mid-way between the amount of mutton and the amount of pork. Overall 18% of the meat was high-priced, 46% was moderately priced, and 36% was low-priced. This is a rather interesting distribution. Shank cuts comprised most of the low-priced category, chuck most of the moderately priced, and porterhouse steaks most of the high-priced.

The butchering-tool marks were 64% from handsaws, 29% from cleavers and axes, and 7% from knives. There was a relatively high amount of "kitchen" butchering (removal of meat from bone) that is reflected in the number of knife and cleaver scores. Otherwise, butchering was typical of the time and place.

Table 47. Animals Represented by Number of Identified Specimens for Pit 16, Late, HI56 Block Sacramento

Common Name	Scientific Name	P16L
Major Meat Animals		
cattle	<i>Bos taurus</i>	28
sheep	<i>Ovis aries</i>	14
pig	<i>Sus scrofa</i>	16
artiodactyl	Artiodactyla	7
Minor Meat Animals		
jackrabbit	<i>Lepus californicus</i>	1
Incidental Animals		
rat	<i>Rattus</i> sp.	3
TOTAL		69
Domestic Poultry		
chicken	<i>Gallus gallus</i>	3
Wild Game Birds		
duck	Anatidae	4
Unidentified Birds	Aves	13
TOTAL		20
Other		
crustacean	Crustacea	2
TOTAL		2

Table 48. Meat Weight by Economic Status for Pit 16, Late, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	9.0	15.3	
sirloin	-	-	
prime rib	-	-	
moderate			
round	10.4	17.6	
rump	7.2	12.2	
chuck	11.2	19.0	
rib	2.1	3.6	
low			
hindshank	1.9	3.2	
brisket	9.5	16.1	
foreshank	7.7	13.1	
neck	-	-	
TOTAL	59.0	100.0	59
MUTTON			
high			
loin	0.4	1.2	
sirloin	0.5	1.5	
leg	31.5	94.3	
moderate			
rib	-	-	
shoulder	0.5	1.5	
low			
hindshank	-	-	
brisket	-	-	
foreshank	0.1	0.3	
neck	0.4	1.2	
TOTAL	33.4	100	33
PORK			
high			
sirloin	2.1	25.6	
loin	1.8	22.0	
ham	0.8	9.8	
moderate			
rump	-	-	
shoulder butt	1.4	17.1	
picnic	-	-	
low			
belly	-	-	
neck/shanks	-	-	
jowl/feet	2.1	25.6	
TOTAL	8.2	100	8
GRAND TOTAL	100.6		

Table 49. Animals Represented by Number of Identified Specimens for Layer 954, HI56 Block Sacramento

Common Name	Scientific Name	L954
Major Meat Animals		
cattle	<i>Bos taurus</i>	1320
sheep	<i>Ovis aries</i>	177
pig	<i>Sus scrofa</i>	309
artiodactyl	Artiodactyla	173
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	11
deer	<i>Odocoileus hemionus</i>	26
Incidental Animals		
dog	<i>Canis familiaris</i>	1
cat	<i>Felis catus</i>	2
rat	<i>Rattus</i> sp.	30
pocket gopher	<i>Thomomys bottae</i>	2
rodent	Rodentia	2
ground squirrel	<i>Spermophilus beechyii</i>	2
human	<i>Homo sapiens</i>	2
Unidentified Mammals	Mammalia	19
TOTAL		2076
Domestic Poultry		
chicken	<i>Gallus gallus</i>	29
turkey	<i>Meleagris gallopavo</i>	6
Wild Game Birds		
goose	Anseridae	26
duck	Anatidae	37
Canada goose	<i>Branta canadensis</i>	2
coot	<i>Fulica americana</i>	2
ruddy duck	<i>Oxyura jamaicensis</i>	1
tundra swan	<i>Cygnus columbianus</i>	2
sandhill crane	<i>Grus canadensis</i>	2
mourning dove	<i>Zenaidura macroura</i>	1
Incidental Birds		
crow	<i>Corvus corax</i>	1
Unidentified Birds	Aves	283
TOTAL		392

Table 50. Meat Weight by Economic Status for Layer 954, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	163.8	9.9	
sirloin	67.5	4.1	
prime rib	46.1	2.8	
moderate			
round	161.2	9.7	
rump	117.6	7.1	
chuck	379.8	22.9	
rib	123.9	7.5	
low			
hindshank	224.6	13.6	
brisket	173.8	10.5	
foreshank	148.8	9.0	
neck	50.4	3.0	
TOTAL	1657.5	100.0	87
MUTTON			
high			
loin	15.6	27.9	
sirloin	3.0	5.4	
leg	7.6	13.6	
moderate			
rib	8.8	15.7	
shoulder	9.5	17.0	
low			
hindshank	1.8	3.2	
brisket	2.4	4.3	
foreshank	0.8	1.4	
neck	6.4	11.4	
TOTAL	55.9	100	3
PORK			
high			
sirloin	14.7	7.8	
loin	13.3	7.0	
ham	14.4	7.6	
moderate			
rump	57.0	30.1	
shoulder butt	13.3	7.0	
picnic	0.5	0.3	
low			
belly	0.3	0.2	
neck/shanks	63.8	33.7	
jowl/feet	11.9	6.3	
TOTAL	189.2	100	10
GRAND TOTAL	1902.6		

Layer 903

The numerical majority of animals from this layer were cattle, closely followed by pigs (Table 51). Sheep, elk, jackrabbit, wild ducks, chicken, wild geese, and turkey were also present in the food remains. Rats, gophers, and a hawk were incidentally present.

Beef contributed 80% of the meat in the diet by weight (Table 52). The remainder was evenly divided between pork and mutton. Overall, 4% of meat was from high-priced cuts, 37% from moderately priced cuts, and 59% from low-priced cuts. The low-priced cuts were mostly from the neck and shank.

The butchering tool marks reflected a high percentage of cleaver and ax marks 40%. Handsaws made up 55% of the marks and knife scores 5%. Butchering was typical of the time and place.

Pit 979

Cattle were the most abundant animal remains in this feature (Table 53). Sheep, pigs, elk, deer, and wild duck were also present. By meat weight, beef contributed 90% of the meat in the diet (Table 54). Overall, the cuts represented were 34% high-priced, 26% moderately priced, and 40% low-priced. Shank cuts comprised most of the low-priced category, chuck most of the moderately priced, and porterhouse and sirloin steaks most of the high-priced. Most of the butchering-tool marks resulted from handsaws (67%). Cleavers and axes made 28% of the marks and knives 5%.

Pit 953

Pigs numerically dominate the faunal sample, followed by cattle and sheep (Table 55). Chicken, wild duck, elk, deer, and jackrabbit contributed to the diet. Rat was also present. The sample was rather small, with pork and beef contributing most of the meat weight. Most of the cuts were moderately priced and low-priced. Pork rump accounted for almost half of the meat represented. The number of tool marks present was insufficient for analysis.

Pit 962

Cattle, sheep, pig, and elk bones were remnants of meals (Table 56), while rat and gopher bones were incidental. Beef constitutes 87% of the meat weight represented in the sample (Table 57). Most of the beef was from the round. Overall, 23% of the meat was from high-priced cuts, 55% was from moderately priced cuts, and 22% was from low-priced cuts. The tool marks indicated very intensive kitchen butchering, with 60% cleaver marks.

507 I Street

Layer 702

Pig bones were most abundant in the limited faunal sample, followed by cattle bones (Table 58). The only other specimen recovered was a heron. Pork accounted for about 60% of the meat in the sample by weight and beef for about 40%. The cuts represented were mostly low-priced shank cuts. The number of butchering-tool marks present was insufficient for analysis.

Table 51. Animals Represented by Number of Identified Specimens for Layer 903, HI56 Block Sacramento

Common Name	Scientific Name	L903
Major Meat Animals		
cattle	<i>Bos taurus</i>	91
sheep	<i>Ovis aries</i>	23
pig	<i>Sus scrofa</i>	66
artiodactyl	Artiodactyla	32
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	1
jackrabbit	<i>Lepus californicus</i>	1
Incidental Animals		
rat	<i>Rattus sp.</i>	5
pocket gopher	<i>Thomomys bottae</i>	1
rodent	Rodentia	2
TOTAL		222
Domestic Poultry		
chicken	<i>Gallus gallus</i>	3
turkey	<i>Meleagris gallopavo</i>	1
Wild Game Birds		
goose	Anseridae	2
duck	Anatidae	6
ruddy duck	<i>Oxyura jamaicensis</i>	1
Incidental Birds		
hawk	<i>Buteo sp.</i>	1
Unidentified Birds	Aves	39
TOTAL		54
Reptiles		
native turtles		
Western pond turtle	<i>Clemmys marmorata</i>	1
TOTAL		1

Table 52. Meat Weight by Economic Status for Layer 903, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	-		
sirloin	-		
prime rib	1.4	1.8	
moderate			
round	15.6	19.9	
rump	4.8	6.1	
chuck	8.8	11.3	
rib	2.1	2.7	
low			
hindshank	13.4	17.1	
brisket	1.9	2.4	
foreshank	8.6	11.0	
neck	21.6	27.6	
TOTAL	78.2	100.0	80
MUTTON			
high			
loin	-		
sirloin	0.5	5.0	
leg	1.9	19.0	
moderate			
rib	1.2	12.0	
shoulder	2.7	27.0	
low			
hindshank	0.2	2.0	
brisket	-		
foreshank	0.3	3.0	
neck	3.2	32.0	
TOTAL	10.0	100	10
PORK			
high			
sirloin	-		
loin	-		
ham	-		
moderate			
rump	1.0	9.7	
shoulder butt	-		
picnic	-		
low			
belly	-		
neck/shanks	4.7	45.6	
jowl/feet	4.6	44.7	
TOTAL	10.3	100	10
GRAND TOTAL	98.5		

Table 53. Animals Represented by Number of Identified Specimens for Pit 979, HI56 Block Sacramento

Common Name	Scientific Name	P979
Major Meat Animals		
cattle	<i>Bos taurus</i>	76
sheep	<i>Ovis aries</i>	20
pig	<i>Sus scrofa</i>	9
artiodactyl	Artiodactyla	10
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	5
deer	<i>Odocoileus hemionus</i>	2
TOTAL		122
Wild Game Birds		
duck	Anatidae	1
Unidentified Birds	Aves	6
TOTAL		7

Table 54. Meat Weight by Economic Status for Pit 979, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	18.0	13.5	
sirloin	16.2	12.1	
prime rib	7.2	5.4	
moderate			
round	10.4	7.8	
rump	-		
chuck	20.2	15.1	
rib	6.3	4.7	
low			
hindshank	9.6	7.2	
brisket	13.3	10.0	
foreshank	28.8	21.6	
neck	3.6	2.7	
TOTAL	133.6	100.0	90
MUTTON			
high			
loin	4.0	43.5	
sirloin			
leg	3.2	34.8	
moderate			
rib	0.4	4.3	
shoulder	1.6	17.4	
low			
hindshank	-		
brisket	-		
foreshank	-		
neck	-		
TOTAL	9.2	100	6
PORK			
high			
sirloin	1.4	26.9	
loin	0.4	6.7	
ham	-		
moderate			
rump	-		
shoulder butt	-		
picnic	-		
low			
belly	-		
neck/shanks	2.8	53.0	
jowl/feet	0.7	13.4	
TOTAL	5.2	100	4
GRAND TOTAL	148.0		

Table 55. Animals Represented by Number of Identified Specimens for Pit 953, HI56 Block Sacramento

Common Name	Scientific Name	P953
Major Meat Animals		
cattle	<i>Bos taurus</i>	3
sheep	<i>Ovis aries</i>	2
pig	<i>Sus scrofa</i>	9
artiodactyl	Artiodactyla	7
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	1
deer	<i>Odocoileus hemionus</i>	1
jackrabbit	<i>Lepus californicus</i>	1
Incidental Animals		
rat	<i>Rattus</i> sp.	1
rodent	Rodentia	1
TOTAL		26
Domestic Poultry		
chicken	<i>Gallus gallus</i>	4
Wild Game Birds		
duck	Anatidae	1
Unidentified Birds	Aves	4
TOTAL		9

Table 56. Animals Represented by Number of Identified Specimens for Pit 962, HI56 Block Sacramento

Common Name	Scientific Name	P962
Major Meat Animals		
cattle	<i>Bos taurus</i>	51
sheep	<i>Ovis aries</i>	11
pig	<i>Sus scrofa</i>	7
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	1
Incidental Animals		
rat	<i>Rattus</i> sp.	2
pocket gopher	<i>Thomomys bottae</i>	1
TOTAL		73
Unidentified Birds	Aves	2
TOTAL		2

Table 57. Meat Weight by Economic Status for Pit 962, HI56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent of total
BEEF			
high			
porterhouse	3.6	5.2	
sirloin	5.4	7.9	
prime rib	4.3	6.3	
moderate			
round	20.8	30.3	
rump	-		
chuck	4.8	7.0	
rib	14.7	21.4	
low			
hindshank	1.9	2.8	
brisket	-		
foreshank	9.6	14.0	
neck	3.6	5.2	
TOTAL	68.7	100.0	87
MUTTON			
high			
loin	-		
sirloin	-		
leg	3.2	57.1	
moderate			
rib	-		
shoulder	1.1	19.6	
low			
hindshank	0.8	14.3	
brisket	-		
foreshank	0.5	8.9	
neck	-		
TOTAL	5.6	100	7
PORK			
high			
sirloin	1.4	30.4	
loin	0.4	8.7	
ham	-		
moderate			
rump	-		
shoulder butt	2.1	45.7	
picnic	-		
low			
belly	-		
neck/shanks	0.7	15.2	
jowl/feet	-		
TOTAL	4.6	100	6
GRAND TOTAL	78.9		

Table 58. Animals Represented by Number of Identified Specimens for Layer 702, HI56 Block Sacramento

Common Name	Scientific Name	L702
Major Meat Animals		
cattle	<i>Bos taurus</i>	3
pig	<i>Sus scrofa</i>	20
artiodactyl	Artiodactyla	7
TOTAL		30
Wild Game Birds		
Louisiana heron	<i>Hydranassa tricolor</i>	1
Unidentified Birds	Aves	9
TOTAL		10

Pit 719

Pig bones dominated the Pit 719 fauna, with cattle, sheep, chicken, antelope, elk, and wild duck also present (Table 59). Rat was the only incidental animal recovered. The meat weight sample was only 24 pounds, with pork in the majority. Shanks were the most abundant cuts followed by pork sirloin. The number of butchering-tool marks were insufficient for analysis.

FAUNAL SUMMARY

Native and Domestic Fauna

The native fauna of the Sacramento Valley was rich and diverse (McGowen 1961; Storer 1965). Elk, deer, antelope, and rabbit were abundant local game animals. A huge assortment of migratory birds (duck, goose, and others) passed through in fall and spring. All of these animals were professionally hunted and offered for sale in the markets of Sacramento (McGowen 1961; Storer 1965). Their presence in urban faunal samples may reflect hunting by members of the household, but could also represent purchases.

The standard domestic animals were introduced to California during the Mission years. The environment of California was better suited to range animals like cattle and sheep than to pigs (Burcham 1957). This fact is well reflected in the livestock statistics for Sacramento City and County for 1861-1862 (Table 60). There are three times as many cattle and sheep as pigs. Because of the availability factor, pork was relatively expensive.

Table 60. Livestock Statistics for Sacramento City and County, 1861-1862

Domestic Animal	Number
Stock cattle	34,357
Beef cattle	4,475
Cows	8,884
Calves	6,312
Oxen	1,413
Sheep	37,155
Goats	1,270
Hogs	12,821
Chickens	51,487
Turkeys	4,690
Ducks	627
Geese	570

(Sacramento City Directory 1861-1862:162)

Age at Slaughter

The age of animals at slaughter in urban environments is indicative of market trends in the sale of meats, and to some extent, the availability of meat animals. The sample of age data for HI56 is strongly dominated by material from Layer 954, which dates from 1848 to 1855. In addition, the sample for cattle is much larger than those for sheep and pig. HI56 is contrasted here to Old Sacramento sites dating from the 1870s to

Table 59. Animals Represented by Number of Identified Specimens for Pit 719, HI56 Block Sacramento

Common Name	Scientific Name	P719
Major Meat Animals		
cattle	<i>Bos taurus</i>	1
sheep	<i>Ovis aries</i>	9
pig	<i>Sus scrofa</i>	69
artiodactyl	Artiodactyla	22
Minor Meat Animals		
elk	<i>Cervus elaphus</i>	1
Incidental Animals		
rat	<i>Rattus</i> sp.	9
rodent	Rodentia	1
TOTAL		112
Domestic Poultry		
chicken	<i>Gallus gallus</i>	10
Wild Game Birds		
duck	Anatidae	1
Unidentified Birds	Aves	12
TOTAL		23

the 1890s (unpublished data of the author). The cattle slaughter curve for HI56 is dramatically different from the Old Sacramento curve, showing utilization of much younger animals, with almost half of the cattle slaughtered by two years of age (Figure 66). The curves converge at four years of age. The sheep slaughter curves are basically similar, but indicate more use of lamb and less use of yearlings at HI56 (Figure 67). The pig slaughter curves show more use of younger and older animals at HI56 (Figure 68). The Old Sac sample has 75% of the animals slaughtered between two to three years, while HI56 has only about 35% in that interval.

The explanation for the prevalence of young cattle in the 1848-1855 interval probably has to do with the high demand created by the influx of population in response to the Gold Rush. Cattle from local areas, southern California, and the Midwest were driven to Sacramento to meet the huge demand, and top prices were paid regardless of condition (Warren 1967:17). Since the primary reason for feeding cattle until three years of age was to maximize the profit per pound, inflated prices would have released livestock raisers from this consideration by giving them more money for less weight and saving them the cost of another year's feeding.

Butchering of Major Meat Animals

The butchering pattern evident in all features and layers of HI56 is the standard 19th-century retail pattern previously delineated for Sacramento (Gust 1982, 1990a-d, 1993). This pattern is characterized by very regular horizontal division of each meaty part of the carcass into steaks and roasts and vertical division of bone ends for use in soups. Domestic sites like HI56 are dominated by steaks, in contrast to commercial sites like hotels and restaurants in Old Sac which contained many roasts. Because of the large sample size, the pattern is fully represented at HI56. Enumeration of the number of occurrences of each mark would only duplicate information on the number of steak equivalents from each carcass portion. For example, if the most butchering marks were found on the shaft of the ilium of the pelvis, it would indicate an abundance of sirloin steaks in the particular sample rather than anything about the underlying pattern itself.

In addition to the retail pattern, there are a relatively large number of shallow cuts, nicks and scores on some bones resulting from meat removal. These types of marks were termed "kitchen butchering" in the Chinese sample from IJ56 (Gust 1982). They were even more abundant in the samples from Chinese contexts at HI56, while the Euroamerican contexts had very few such marks. Many of the kitchen-butchering marks from HI56 were on bones with low meat content. This fact may indicate very intensive meat recovery to maximize utilization of purchased meat.

Butchering of Minor Meat Animals

Butchering marks present on elk bones were similar to the pattern for beef, while marks on deer and antelope were similar to those for sheep. Marks present on jackrabbits and birds were all from cleavers or knives. Virtually all were located at the ends of bones where joints were separated. Twenty-two such marks were found on chicken, turkey, and duck bones, and three on rabbit bones.

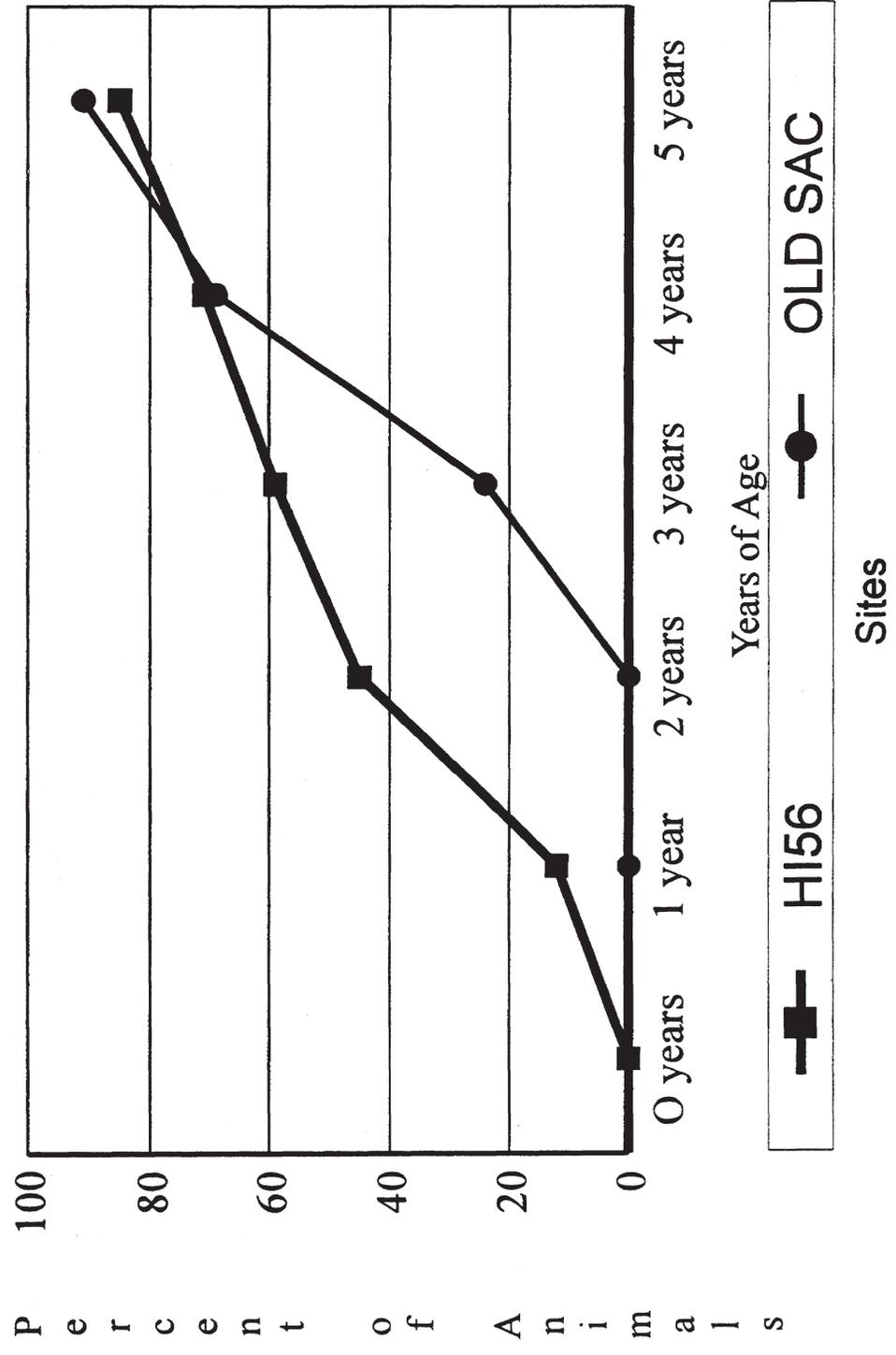


Figure 66. Age at slaughter curves for cattle

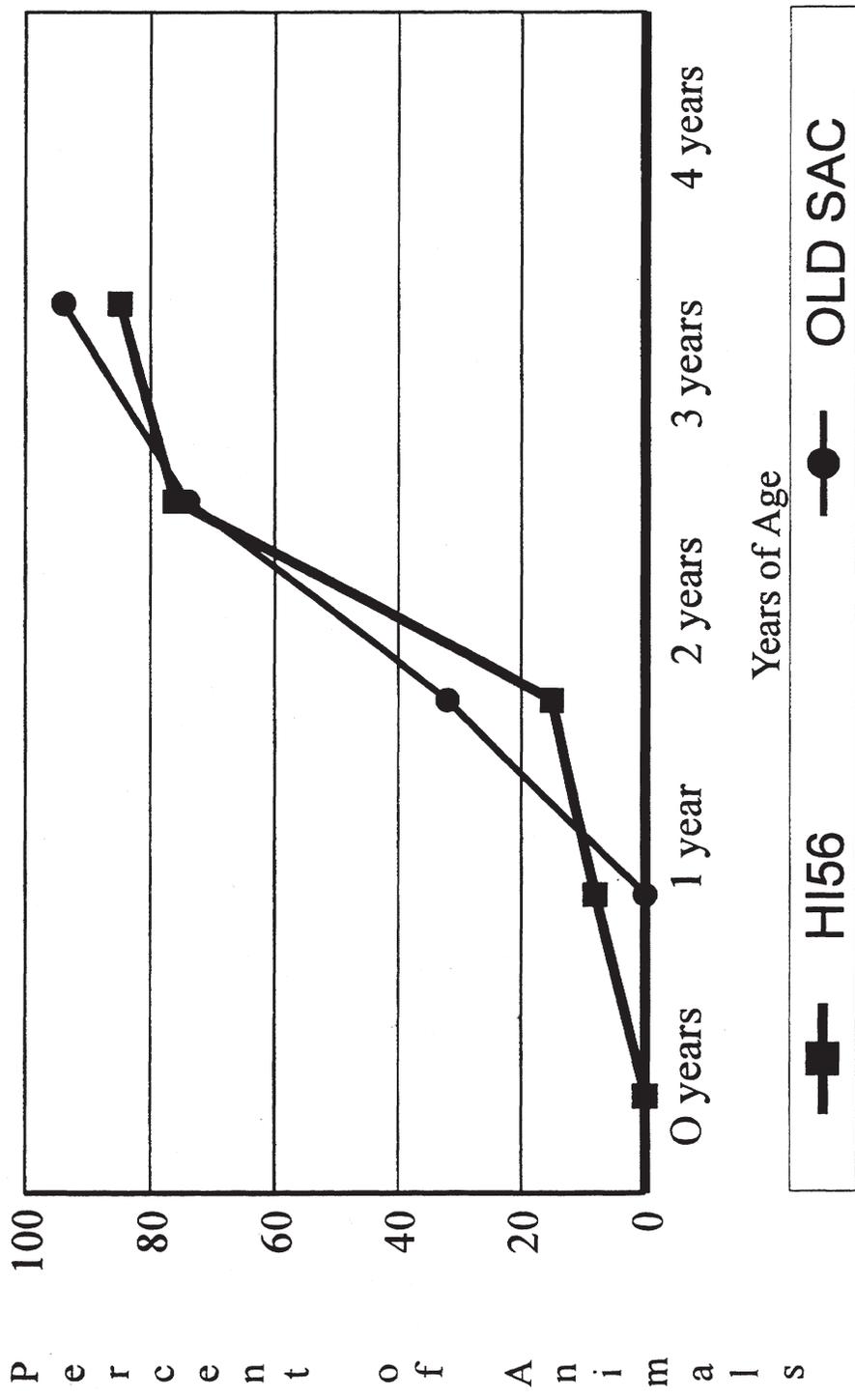


Figure 67. Age at slaughter curves for sheep

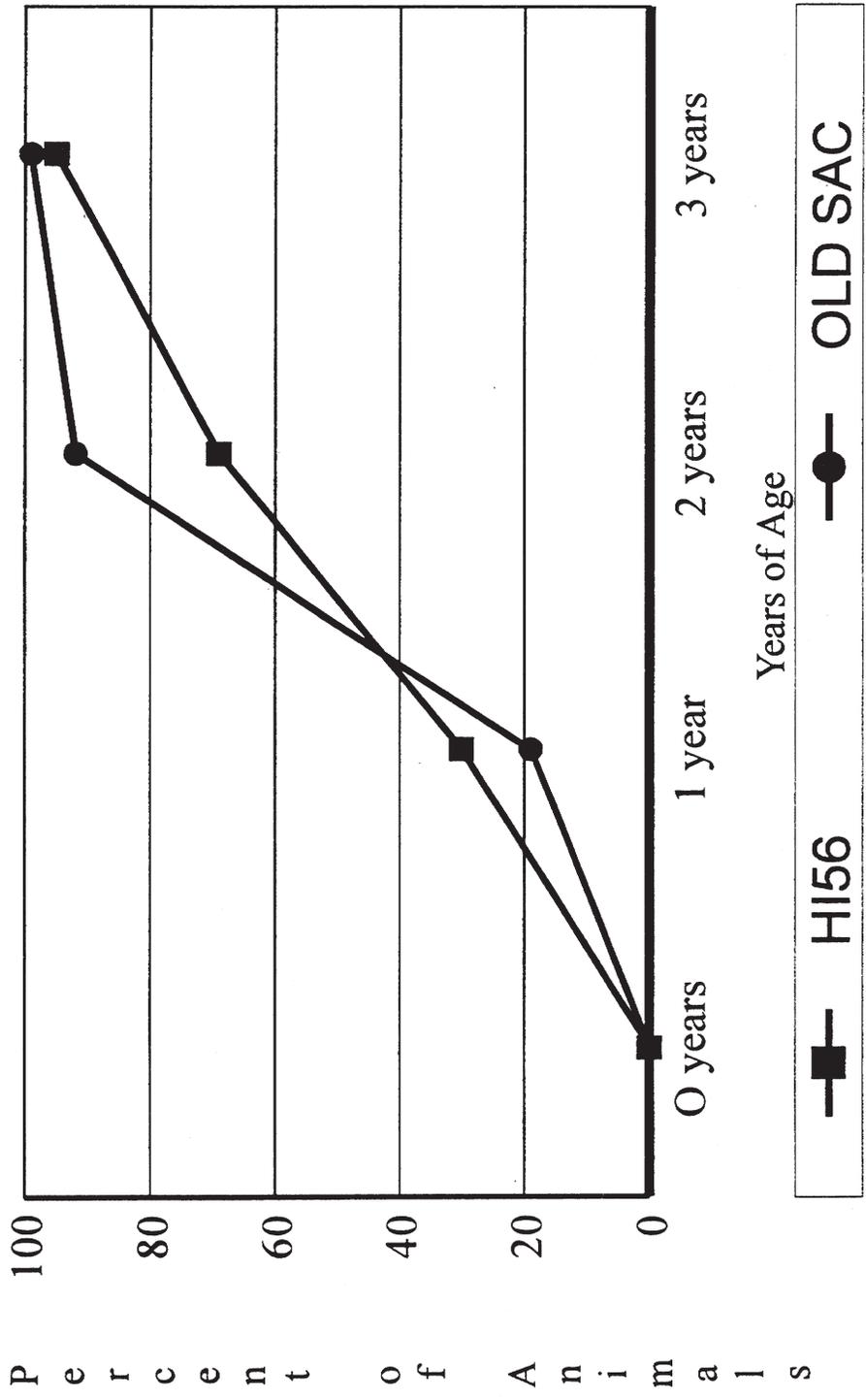


Figure 68. Age at slaughter curves for pigs

Meat Cut Units Represented for Beef

With a view toward reconstructing meals from the bone remains present, the actual number of steak, roast, and soup bones are given in Table 61 for the most abundant meat source. An appropriate caution in this regard—there are substantial sources of meat in items such as sausage, bacon, etc. that do not have bones, and are therefore not represented anywhere in this paper.

Overall, most high-priced cuts are steaks, with a few roasts. The moderately priced cuts are divided between steaks and roasts. The low-priced cuts are all stewing meats or soup bones.

Euroamerican Contexts Compared

There are three Euroamerican contexts on the HI56 block, Pits 69, 83, and Privy 500. All date to the 1870s and have similar sample sizes. A comparison of the percentages of meat types shows them to be roughly similar, with beef contributing at least 80% (Table 62). The sample from Pit 83, however, had a slightly smaller amount of beef and more mutton in the sample.

In terms of economics reflected by meat purchases, Privy 500 had about 10% high-priced cuts, 70% moderately priced, and 20% low-priced. Pit 83, and to a lesser extent, Pit 69 have more high-priced cuts and less moderately priced ones. Pit 83's exceptions reflect more consumption of leg of mutton than seen in the other sites, accounting for both the greater amount of mutton and the greater amount of high-priced cuts.

Chinese Contexts Compared

Nine contexts are wholly or partially Chinese. Pits 16 Early and 16 Late were associated with the Yeung-wo Company. Layers 954 and 903 and Pits 953, 962 and 979 were associated with Yu Chung and Company. Layer 702 and Pit 719 were associated with Sang Lee and Company. Pit 16 (Late Deposit) and Layer 954 probably have admixtures of non-Chinese materials. All date between 1848 and 1862.

All the significant samples from these deposits are dominated by beef (Table 63). The Sacramento IJ56 Chinese sample, however, has a substantial total meat weight of 507 pounds, yet has 95% pork, 4% beef and 1% mutton. There has been a persistent mythology that early Chinese immigrants ate only pork and chicken, the food-bone facts from Chinatown sites do not bear this out (Gust 1993). Beef was well-represented in most samples studied.

Only one HI56 context appears relatively affluent in terms of meat purchases, Pit 16 Late. This deposit has higher priced meat cuts than the IJ56 sample. IJ56 has 28% high-priced cuts and 36% of both moderately priced and low-priced cuts. Most of the HI56 Chinese contexts have considerable representation of moderate-to-low-priced meats and have intensive kitchen butchering. In addition the small amounts of pork may be related to the relative expense of that meat. All of these facts would argue for the lower economic status of the Chinese creating these deposits.

Table 61. Number of Beef Cut Units for HI56 Block Sacramento

	P16E	P16L	L954	L903	P979	P962	P69	P83	P500
BEEF									
high									
porterhouse steaks	2	5	58		6	2	10	12	5
porterhouse roasts			9		2				
sirloin steaks	2		15		1		6	7	3
sirloin roasts			4		2	1			
prime rib steaks	4		32	1	5	3	6	1	1
moderate									
round steaks	2	4	42	6	4	2	10	5	28
round roasts	2		4			2	6		
rump steaks	2		22					1	2
rump roasts	2	1	19	2			6	1	4
chuck steaks		4	86	4	4		12	5	26
chuck roasts	1		51		2		5	8	2
rib steaks	5	1	59	1	3	7	1	1	5
low									
hindshank stew/soup	6	2	152	10	6	2	12	7	
brisket stew/soup	1	5	102	1	7		9	3	7
foreshank stew/soup	3	3	53	3	6	2	8	3	4
neck stew/soup	2		42	18	3	3	15	8	25

Table 62. Comparative Information for Euroamerican Contexts, HI56 Block Sacramento

	P69	P83	P500
date	1870s	late 1870s	late 1870s
Total meat weight sample	338 lbs.	214 lbs.	305 lbs.
Percent beef	85	76	85
Percent mutton	8	16	10
Percent pork	7	8	4
Percent high-priced	21	31	13
Percent moderately priced	57	51	68
Percent low-priced	23	17	19

Table 63. Comparative Information for Chinese Contexts, HI56 Block Sacramento

	P16E	P16L*	L954*	L903	P979	P962
date	1855	1860s	1849-55	1955	1855	1855-61
Total meat weight sample	103	101	1902	99	148	79
Percent beef	79	59	87	80	90	87
Percent mutton	6	33	3	10	6	7
Percent pork	15	8	10	10	4	6
Percent high-priced	23	46	18	4	34	23
Percent moderately priced	48	33	46	37	26	55
Percent low-priced	29	22	36	59	40	22

* indicates admixture of Euroamerican artifacts in deposit

MID-19th-CENTURY FISH REMAINS

by Peter D. Schulz
Brienes, West & Schulz

INTRODUCTION

The Gold Rush transformed much of California into an urban frontier, the focus of worldwide immigration whose object was the extraction of the region's mineral wealth. The instant population of hopeful extractors was initially supplied—with clothing, tools, utensils, building supplies, and an endless variety of other items—not by exactions on the local environment or the preexisting economy, but primarily by appeal to the same sources and routes that brought the argonauts themselves. Perhaps the earliest exception to this rule of imported supply was in regard to food. Even before the Gold Rush, California had a flourishing livestock industry, and other sources of local food supply were soon brought into production.

One of these other sources was the local fisheries. Although commercial salmon packing was initiated on the Sacramento River in the mid-1840s, the endeavor was of limited scope, never involving the full-time efforts of any of its participants. By about 1850, however, full-time professional fishermen began operating on the Sacramento and on San Francisco Bay. Their enterprises are briefly and sporadically chronicled by contemporary observers, but we have no information on the contribution of their landings *vis a vis* the import trade in salt fish that provided the cod, mackerel, and sardines that were staple commodities listed daily in newspaper ads and wholesale market reports.

Archaeological investigation offers an opportunity to study aspects of Gold Rush life that may be poorly documented in archival records. The present study, focusing on fish remains from Gold Rush-era deposits in Sacramento, is a small effort toward this end. It offers a look at an aspect of material culture that reflects both ethnic trade networks and the exploitation of the local environment, and it offers an initial quantitative assessment of local vs. imported sources in one aspect of the food supply in this transitional era.

Three contexts associated with Chinese occupants contained fish remains: Layer 903, Layer 954, and Pit 16 at 513/515 I Street consisted of the burned remains from the fire of July 1855 and was associated with the Yu Chung Company. Layer 954 predates the 1855 fire, being overlain by Layer 903. Unfortunately there was much trampling by livestock after the fire, so there may be some mixing of the levels in places. The deposit dates from probably 1848 until mid-1855. By the end of this period the occupants were Chinese, but the remains from the earliest years were presumably left by transient immigrants of various origins. Pit 16 seems to have been an open sump or well located behind the wooden building that fronted on I Street (525/527) at the time of the 1855 fire. After the fire it was quickly filled with several layers of debris (here noted as Lots 59, 60, 63, and 86) prior to the construction of wood frame tenements on the lot. The depositing population was clearly Chinese and probably the Yeung-wo Company.

METHODS

The three deposits were excavated under close stratigraphic control, and the soil was passed through 1/16-inch or 1/8-inch mesh screens. Fish remains from these deposits were saved, cleaned, and submitted to the author for identification.

The remains were examined by the author using an illuminated hand lens, and were identified to the most specific taxonomic level that could be confidently assigned. Identification of native California species was relatively routine, comparative material being readily available. Commercial species from the North Atlantic were identified using comparative specimens obtained from the Canadian Museum of Nature. Identification of Chinese species relied on comparative material collected by the author: salt fish specimens obtained during two trips to Hong Kong, Guangzhou, and Macao, and salt, frozen, and fresh specimens collected over several years in Asian markets in Sacramento and other Pacific Coast cities. The availability of this material allowed the secure identification of the vast majority of the submitted elements. Most of the material that remains unidentified is too fragmentary for any secure analysis. The collection does, however, contain several distinctive elements that remain unidentified for lack of appropriate comparative material.

Weight estimations for the fish are derived either from bone dimension: live weight regressions provided by Casteel (1972) for native California species, or by extrapolation from known-weight museum specimens. For consistency, the figures used are all live weights. The drawback in this approach is that the imported fishes did not reach the consumer in whole form; they were salted, dried, and sometimes minus the heads. As will be seen, however, occasionally local fishes were similarly prepared and we have as yet no means to determine the extent to which salt-dry preparations affected the present sample. Consistent use of live weight estimations thus offers a ready initial approximation of dietary importance that is at least more meaningful than simple element counts or estimations of minimum individuals.

RESULTS

Of 2,847 bones and fragments recovered from the three deposits, 2,077 were identified at least to superfamily. The identified remains include 272 elements from Layer 903, 1,690 from Layer 954, and 115 from Pit 16 (Table 64; Volume 2:Appendixes 4-8). These materials represent at least 17 species of fish. The collection can, for the most part, be readily grouped into three associations: local California species, North Atlantic species and Chinese species (Tables 64 and 65).

California Fishes

The great majority of the identified remains in each deposit represent California fishes, most of them locally abundant freshwater and anadromous forms. Of these species, salmon, a commercially important and highly favored food fish, feature most prominently in the literature of the day. As will be seen, however, many other species found buyers in the market, and in the case of the community reflected here, these little-known species were important indeed.

Sacramento Perch

The most abundantly represented species in each deposit was the Sacramento perch (*Archoplites interruptus*). The only sunfish native to the Pacific slope, this species was once common in the lakes, sloughs, and sluggish streams of the lower Sacramento Valley, particularly in those habitats with abundant rooted and emergent vegetation. The adults are

Table 64. Fish Remains, by Provenience, from HI56 Block Sacramento

SPECIES	COMMON NAME	No.:			MNI:		
		903	954	Pit 16	903	954	PIT 16
California Fishes							
Acipenser sp.	Sturgeon	2	6			1	
Oncorhynchus tshawytscha	Chinook Salmon	6	18			1	
Catostomus occidentalis	Sacramento Sucker	7	20	6		2	
Gila crassicauda	Thicktail Chub	2	7	3		4	
Lavinia exilicauda	Hitch		3			2	
Mylopharodon conocephalus	Hardhead		4			3	
Pogonichthys macrolepidotus	Splittail		1			1	
Ptychocheilus grandis	Sacramento Squawfish	3	8	2		3	
Cyprinidae	Minnnows	48	238	17			
Cyprinidae or Catostomidae	Suckers or Minnows	76	295	18			
Scorpaenidae	Rockfish	1	8		1	3	
Archoplites interruptus	Sacramento Perch	126	1044	29	4	31	2
Sum		271	1652	75	10	51	5
North Atlantic Fishes							
Clupea harengus	Herring						
Gadus sp.	Cod		4			1	
Scomber scombrus	Atlantic Mackerel		20			2	
Sum		0	24	1	0	3	
Chinese Fishes							
Ilisha elongata	White Herring						
Nemipterus virgatus	Golden Threadfin			12			3
Lutjanus sp.	Snapper		12			1	
Sparidae	Sea Bream		1	27		1	2
Sum			14	39		3	5
TOTAL IDENTIFIED		272	1690	115	11	57	11
Unidentified		56	645	69			
Total specimens		328	2335	184			

Table 65. Fish Remains, Weight Estimates for HI56 Block Sacramento

SPECIES	AVE. WT.: (gm)	MNI			Total Weight:		
		903	954	Pit 16	903	954	Pit 16
CALIFORNIA FISHES							
Sturgeon.	6800	1	1		6800	6800	
Chinook Salmon	5100	1	1		5100	5100	
Sacramento Sucker	720	1	2	1	720	1440	720
Thicktail Chub	400	1	4	1	400	1600	400
Hitch	450		2			900	
Hardhead	800		3			2400	
Splittail	850		1			850	
Sacramento Squawfish	3000	1	3	1	3000	9000	3000
Rockfish	2000	1	3		2000	6000	
Sacramento Perch	440	4	31	2	1760	13640	880
Sum		10	51	5	19780	47730	5000
NORTH ATLANTIC FISHES							
Herring	300			1			300
Cod	5000		1			5000	
Atlantic Mackerel	650		2			1300	
Sum		0	3	1	0	6300	300
CHINESE FISHES							
White Herring	250					250	
Golden Threadfin	250			3			750
Snapper	700		1		700	700	
Sea Bream	350		1	2		350	700
Sum		1	3	5	700	1300	1450
TOTAL		11	57	11	20480	55330	6750

piscivorous but opportunistic, and invertebrates are often of greater dietary importance than fish. They concentrate in shallow waters in the spring to spawn.

Until the last quarter of the 19th century, this species was abundant in local lentic environments, and its bones often outnumber those of all other fishes in prehistoric sites near Sacramento (Schulz 1995). They are also the most ubiquitously represented of fish in historic deposits in Sacramento, having been recovered from virtually all the 19th-century features studied to date (Schulz 1980, 1982, n.d.)

This species presumably accounted for the “strings of pan-fish” reported as objects of eager barter at Sutter’s Fort in 1846. By the early 1850s it was considered “one of our most esteemed fishes” and was being shipped in quantity to the San Francisco market (Ayres 1854; Bryant 1936:243; Girard 1857:9). Later observers note it as being particularly favored by Chinese consumers (Jordan 1884:405; Lockington 1879:21).

Unfortunately, Sacramento perch were unsuccessful in surviving the environmental changes that affected their habitat during the ensuing decades. They disappeared from the market early in the present century and have now vanished from most of their native range.

Sacramento Sucker

This fish (*Catostomus occidentalis*) is represented in all three samples, although never as abundantly as Sacramento perch. The only sucker found in the Central Valley, it occupies a wide variety of aquatic environments, from cold, rapidly flowing streams to warm, nearly stagnant sloughs. Spawning usually occurs in streams over gravel riffles.

Remains of this species are a common component of prehistoric middens in the region. They are not abundantly represented in sites on the valley floor, but increase in relative importance in the lower foothills. Suckers are often represented in local 19th-century deposits of Chinese origin but seldom in Euroamerican deposits (Schulz 1980, 1982, 1984).

Squawfish

Present in all three archaeological contexts, the squawfish (*Ptychocheilus grandis*) is the most abundantly represented of the five species of minnows in the present sample. The largest freshwater fish of the Central Valley, this species is also the most piscivorous of the native minnows. Squawfish are adapted to clear flowing streams and spend most of their time in deep well-shaded pools.

Although squawfish were a common market fish in the last century (then known as “pike,” or sometimes as “salmon trout”), archaeological evidence indicates that they found more favor with Chinese than with other consumers (Schulz 1980, 1982, 1984, n.d.).

Thicktail Chub

Also represented in all three deposits was the thicktail chub (*Gila crassicauda*), a relatively large, now-extinct minnow. Once a common inhabitant of the overflow lakes and sloughs of the valley floor, its population declined rapidly in the early 20th century. It was last taken in the 1950s.

Thicktail chub are abundantly represented in local prehistoric middens and are often mentioned in 19th-century market reports. Most contemporary accounts suggest that they found their readiest buyers among the Chinese population, an impression that the archaeological data tend to confirm (Schulz 1980, 1982, 1984, 1995, n.d.).

Hardhead

Represented only in Layer 954, the hardhead (*Mylopharodon conocephalus*) is a sizable minnow generally found in large flowing streams, often in association with squawfish and suckers. They are bottom browsers, feeding on small invertebrates and aquatic plants. Extensive upstream migrations to spawn in smaller tributaries are common (Reeves 1964).

Judging by the paucity of 19th-century accounts, this species was never of much commercial importance, although one might expect that its external similarity to the more common squawfish may account for much of its historical obscurity. Nonetheless it forms only a very minor component of the prehistoric fish landings represented in local middens (Schulz 1995). There is only one previous 19th-century archaeological record (Schulz n.d.).

Hitch

A second species found only in Layer 954, the hitch (*Lavinia exilicauda*) is a relatively large omnivorous minnow. Adapted to warm low-lying lakes and sloughs and slow-moving streams, the adults tend to school in open waters.

Hitch were important to local prehistoric fisheries but seem to have been neither especially popular nor especially common in the last century. They have been previously recorded only twice from 19th-century deposits, the association in both cases being with Chinese consumers (Schulz 1982, 1984).

Splittail

Yet another species found only in Layer 954, the Sacramento splittail (*Pogonichthys macrolepidotus*) is a relatively large minnow found in low-lying, fast-moving streams as well as in sloughs. The bulk of the population seems to concentrate in the Delta, with upstream movement of the adults in the spring to feed and spawn over flooded vegetation.

Chinook Salmon

This species (*Oncorhynchus tshawytscha*) was by all accounts the most important food fish of this region in the latter half of the 19th century, but it is represented here in only two of the deposits (Layers 903 and 954). Chinook salmon move up the main channel of the Sacramento River to spawn in cold, rapidly flowing streams over gravel bottoms. Four spawning runs now occur in the Sacramento system, and adults are present year-round in the lower Sacramento. These migrations, however, have been affected by modern water regime alterations. Historically two major runs--one in the spring, the other in the autumn--were recognized, the former consisting of fish that moved up the river beginning in April or May and then overwintered in deep pools in higher tributaries before spawning in the fall (Stone 1874).

The commercial fishery for salmon on the lower Sacramento began before the Gold Rush and expanded rapidly once a growing population provided a reliable market for the product. By 1853 about 300 men were engaged in the lower Sacramento fishery, providing fresh, salted, and smoked salmon (Barber and Baker 1855: 71, 92).

Not surprisingly, the historic archaeological record of this fish is extensive, its remains having been recovered from the majority of deposits investigated in Sacramento.

Sturgeon (魚鱈)

Sturgeon remains, although not abundant, were recovered from Layers 903 and 954. Sturgeon occur on the Atlantic coast as well as on the coast of China. In both regions they were valued as food fishes, but in neither case was there an export trade of any note. An active and productive fishery did develop on the Sacramento and on San Francisco Bay in the 1850s, and this was undoubtedly the source of the present remains.

Two species of sturgeon occur in California, the white sturgeon (*Acipenser transmontanus*) and the green sturgeon (*A. medirostris*). Osteological differentiation has not been seriously studied, and considerable individual variation occurs within sturgeon species. Consequently, no attempt at specific identification has been made.

Both of these anadromous fishes spawn in the Sacramento River, white sturgeon being by far the more common. Adult white sturgeon are present in the lower Sacramento throughout the year, although they may be at their height in the spring as large numbers of fish migrate from the estuary--where the bulk of the population is concentrated--to the upper Sacramento to spawn.

Green sturgeon are known to be more marine, and may be present in the river only during spawning runs, which presumably occur at about the same time as those of the more common species.

In the early 1850s, Chinese fishermen on San Francisco Bay were landing sturgeon and drying them for export to the mines. They were also taken by American fishermen on the Sacramento. By the 1870s, they were perhaps the second most common fish in the market, though never highly regarded in the market reports. In the late 19th century, the population went into decline, and commercial fishing was banned in 1901 (*Alta California* 1853, 1855; Ayers 1854b; *Chambers's Journal* 1854; Stone 1874; Skinner 1962).

Not as frequently recovered as some other species, sturgeon are nonetheless widely represented in 19th-century deposits, their remains reflecting the diets of both Chinese and non-Chinese consumers (Schulz 1980, 1982, 1984, n.d.).

Rockfish

A few bones from Layers 903 and 954 represent rockfish (family Scorpaenidae). Fishes of this marine family are quite common along the Central California coast, including San Francisco Bay, where they have contributed significantly to commercial landings since the 1850s (*Alta California* 1855). Many species of this family also occur in the South China Sea, although they are of relatively little commercial importance. Consequently, the bones are presumed to be from fish taken in California. Most of the bones resemble those of the China rockfish (*Sebastes nebulosus*), but absent a fuller comparative collection, no attempt was made at definitive identification.

North Atlantic Fishes

The salt fisheries of the North Atlantic have been of great importance for centuries, their products being exported first to Europe, then to all the ports served by American commerce. The appearance of these products in the California goldfields is amply documented in newspapers, diaries, and account books. It is no surprise here to find their physical manifestation.

Cod

The few cod remains—found only in Layer 954—undoubtedly represent Atlantic cod (*Gadus morhua*), even though the elements themselves are not specifically diagnostic. Large populations of Pacific cod (*G. macrocephalus*) occur off Alaska but were not commercially exploited until the 1860s. North Atlantic cod, on the other hand, have been the focus of commercial exploitation for centuries. Salt fish from this source were on the California market by the 1830s (Speer 1835) and became a staple during the Gold Rush and thereafter. Not surprisingly, they occur frequently in archaeological contexts (Schulz 1980, 1984, n.d.). While it might be expected that the market for this product in California was among Americans and Europeans, occasional references indicate that salt cod attracted Chinese purchasers as well (Buck 1930:122; Speer 1856:23-24).

Atlantic Mackerel

Occurring only in Layer 954, the Atlantic mackerel (*Scomber scombrus*) was another mainstay of the North Atlantic salt-fish industry. Salt mackerel was a market staple during the Gold Rush and thereafter, but it is represented in the archaeological record less commonly than cod (Schulz n.d.).

Herring

A single bone from Pit 16 is the sole representative of the common herring (*Clupea harengus*). This species occurs in the North Atlantic as well as on both sides of the North Pacific (stocks in the latter area sometimes being classed as *Clupea pallasii*). Local fish were being landed fresh in San Francisco by the mid-1850s, and this source could account for the archaeological specimen (*Chambers's Journal* 1854; *Alta California* 1855). Nonetheless, the North Atlantic salt fishery was of vastly greater importance, and even in California the Atlantic was preferred to the Pacific product as late as the 20th century. Only two previous records are available from local 19th-century deposits (Schulz n.d.).

Chinese Species

The salt-fish industry along the Chinese coast was of considerable importance. Although its products were intended for domestic consumption, they offered a readily exportable source of traditional foods when emigration opened markets overseas. None of the three Chinese fishes recovered here has been previously identified in New World sites.

Snapper (笛魚)

Included in Layers 903 and 954 were the remains of a snapper (*Lutjanus* sp.). Fishes of this genus occur worldwide in tropical and subtropical seas. Although one species occurs off southern California, it clearly does not account for the present bones,

which are almost certainly those of salt fish imported from China. More than 20 species of this genus are found in the South China Sea. Almost all of them are commercially important, and several species are commonly salted for the market (Allen 1985). They were readily available in the latter form in Hong Kong and Guangzhou in 1986 and 1989. (The archaeological bones agree perfectly with comparative specimens from this region; no specific identification is offered, however, because skeletal material from most species was not available for analysis. The lutjanid fishes now available in Asian markets in California, generally sold fresh—although sometimes seen frozen—appear to be mostly imported from the Atlantic.)

Sea Bream (海鮨科, 鮨科)

Included in two contexts were the remains of at least one species of sea bream (family Sparidae). Perhaps a dozen species of this family occur along the coast of Guangdong, but comparative specimens were available for only one of these species. Included in the sparid bones from each context, however, was a distinctive fused frontal. These elements are virtually identical and clearly derive from the same species. Fortunately, this element has been considered of some taxonomic importance, and its characteristics among several species have been reported (Tomiya 1934; Yasuda and Mizuguchi 1969a, 1969b). The archaeological frontals resemble most closely those reported for the yellow-back sea bream *Taius tumifrons*, 黃魚周). This species is reported as a “good food fish” by Herklots and Lin (n.d.:37). Fischer and Whitehead (1974) report that it is usually marketed fresh but is also dried-salted. (The only western Pacific sparid currently observed in California markets is the red sea bream [*Pagrus auratus*], which is commonly retailed fresh. This species is raised commercially in Japan and Taiwan, but those seen here evidently are from New Zealand.)

Golden Threadfin (金絨魚)

The golden threadfin (*Nemipterus virgatus*) is represented by a dozen bones from Pit 16. This species is one of the most important commercial fishes of the northern South China Sea (Anderson 1972:105, 125; Au 1970; Li 1954; Williamson 1968). It is marketed mainly fresh, but it is available as a salt fish in Hong Kong and Guangdong. (In Asian markets in California, it is abundantly stocked in whole frozen form, but the author has never seen it sold here as salt fish.)

White Herring (長鱈)

The white herring (*Ilisha elongata*) is represented by only a single bone from Layer 954. This species is reported by Anderson as “a mainstay of the [Hong Kong] salt-fish industry, and . . . the most highly valued salt fish” (1972:110). Yang and Chen note that it is caught only in small quantities in Taiwan, but that it is “highly esteemed when salted Cantonese style” (1971:8). Salt specimens were readily obtainable in Hong Kong and Macau markets in 1986 and 1989. In spite of this popularity in southeast China, the species is not at all common on the overseas salt-fish market in California, and has never been observed here by the author.

DISCUSSION

Documentary sources are informative about some aspects of the salt-fish trade and about some of the local fisheries. These sources, however, provide unsystematic coverage. Thus we know quite well which fishes provided the bulk of the salt product from the North Atlantic, while the going prices for these varieties through most of the Gold Rush are readily obtainable. Yet the total volume of this trade, and its impact on the California diet remains unknown. Meanwhile, of the salt-fish trade from China we have virtually no written documentation beyond anonymous listings in customs-house records. Concerning the local fisheries, numerous brief accounts are available, but only for the salmon fishery do we have anything approaching statistical data.

The present collection advances our knowledge in this area in various ways. First, it provides material evidence of seven fishes offered in the salt-fish trade, including four Chinese fishes nowhere else documented. It also offers the possibility of looking at various other questions, among which are the connection of product sources with ethnic preferences, the importance of imported vs. local fish products, and the nature of the local fisheries.

Intrasite Comparisons

Since the present collection contains the remains of salt fish imported from two very different sources, the North Atlantic and China, we might expect the distribution of these remains to be correlated with historical and archaeological evidence for depositing populations reflecting this ethnic dichotomy. Thus, since Layer 903 and Pit 16 date to a period when this area was overwhelmingly occupied by Chinese residents, we might expect imported fish to be exclusively from China. Layer 954, on the other hand, representing an ethnically mixed history of occupation, we might expect to exhibit imported food stuffs, including salt fish, from a wide variety of sources.

These expectations are for the most part confirmed. Layer 954 yielded 24 elements derived from North Atlantic fish but only 14 from Chinese fish; the other two features produced only a single element from the former category but 40 from the latter. Use of estimated weights provides us with a less dramatic but still consistent picture: the balance of North Atlantic to Chinese fish in Layer 954 is 6,300 vs. 1,300 g; in the other two features, it is 300 vs. 2,150 g. So far as small sample sizes allow us to judge, then, the origin of the imported salt fish correlates here with the origin of the consumers.

Imported vs. Local Fish

As mentioned above, the HI56 Block assemblage allows us to weigh the dietary contributions of the local fisheries against those of the import trade in salt fish. It should be noted, of course, that there are some restrictions on the value of this comparison. First, the sample sizes used are not especially large. Second, we are dealing here mostly with evidence from a minority community; we cannot assume that any patterns reflected here were the same in the larger population. Finally, the weight estimations used will overvalue the importance of salt fish.

Whether the data used are element numbers (Table 64) or estimated product weight (Table 65), the evidence is quite clear: in every feature, local product was more important than the imported one. Thus for the collection as a whole, 73.4% of elements and 87.8%

of estimated product weight represent local fishes. Clearly, by the mid-1850s, local fisheries were supplying a greater share of the diet—at least in Sacramento’s Chinese community—than was supplied by the import trade.

Local Fisheries

Another interesting aspect of this collection is the light it throws on the nature of the local fisheries. Among these fisheries, there seems little doubt that, given the number of men employed and the volume of the landings, the salmon fishery was the most important (cf. Kirkpatrick 1860; Skinner 1962:57-65). It was not unique, however. By the mid-1850s both Chinese and European fishermen were working on San Francisco Bay, while the latter extended their operations outside as well. On the lower Sacramento, salmon fishermen turned their attention in the off season to other species. Additionally, Chinese fishermen directed their attention specifically to these freshwater species, an industry chronicled only in a few passing remarks such as that of Barber and Baker: “There are large numbers of a variety of smaller fish caught and cured, principally by the Chinese” (1855:92). The present collection clearly documents the “variety” of these landings. The remaining question goes to their importance.

The weight calculations (Table 65) indicate that so far from constituting the bulk of the local fish on the market, salmon constituted only 14% of the total. Similarly, marine fish provided only 11% of the total. The remainder consisted of local freshwater and anadromous fishes, the product of those fisheries least chronicled in the records of the day. In fact the largest single contributor (22%)—that is, the most important fish on the market reflected here—was the Sacramento perch.

There are several possible explanations for these apparently anomalous results. First, the salmon runs were highly seasonal. Since the landings exceeded the market demand for fresh fish, the majority of the catch was processed into salt or smoked salmon and distributed to the interior or exported (Kirkpatrick 1860:534). Second, the archaeological data reflect a community with a highly eclectic valuation of fish varieties and no prior cultural preference for salmon. And finally, those few accounts we have of the small fish trade suggest that the trade was substantial and that the market was reliant on heavy demand within the Chinese community:

Besides salmon, large quantities of perch, pike, chub and suckers (the last two best known as “China fish”) are taken in the Sacramento. The perch is highly esteemed among the lovers of fresh fish. The others are in demand chiefly among the Chinese in our city, who have contract with some of our fishermen for the supply of the chief article of their food [*Sacramento Bee* 1 January 1859:4].

FLORAL REMAINS

by Madeline Hirn (identification by Elizabeth Honeysett)

METHODS

Seeds recovered from the Pit 719, Layer 903, and Layer 954 soil samples screened through 1/16-inch (1.5mm) mesh were given to Elizabeth Honeysett for identification. A 10X dissecting microscope was used to examine and sort the seeds. Identifications were verified against a type collection.

FINDINGS

The identifications and numbers of specimens are given in Table 66. Four kinds of gourds, five kinds of fruits, two kinds of nut, and four kinds of grain are represented. A number of these items have a permanent place in Chinese foodways and folk medicine.

Bitter Melon (*Momordica charantia*)

Bitter Melon is also called balsam pear, *fu gwa*, or ‘leprosy gourd’ because of its use in Asia as a cure for leprosy (Heiser 1979:63). Bitter melon is a green fruit about the size of a cucumber with a warty skin. Its cool and bitter taste is due to its quinine content, which increases with maturity. The immature green fruits are usually used for food; the mature fruit turns yellow or orange and contain seeds with an edible scarlet aril (Yamaguchi 1983:341-342). Bitter melons should not be peeled prior to use; the pulp and seeds are cut out before cooking. Usually served with black bean sauce for flavoring, it can be sliced for stir frying with meat slices or shrimp or both, or halved for stuffing. The melon brings out the flavor of the other foods, while they counteract the melon’s bitterness (Yee and Taylor 1993:81). Bitter melon is thought to be an acquired taste, but one “well worth the trouble of acquiring” (Anderson and Anderson 1977:329).

Winter Melon (*Benincasa hispida*)

The Chinese winter melon (*tung kua*) has a common and interesting place in southern Chinese cooking. According to Anderson and Anderson, “winter melons are huge, dark-skinned, hard-rinded, and used most characteristically as soup kettles: filled with various ingredients and sometimes carved on the outside into lovely designs, they are steamed, adding to the finished soup their faintly spicy flavor and their tendency to absorb overgreasy or overspicy tastes” (1977:329).

Chinese Date (*Zizphus jujuba*)

The Chinese date, or jujube, looks like a date (although it is sometimes red), tastes a little like a date, and has a datelike stone, but it is not related to the date. The jujube thrives in dry climates and thus not extensively grown in the wet environs of southern China (Anderson and Anderson 1977:334). The southern Chinese import the “dates” fresh or more often as jujube nuts that have been dried, sugared, stewed, or smoked (Poterfield 1951:26). The jujube or red date is used in soups or in steamed dishes to give a subtle

Table 66. Floral Remains

Common Name	Scientific Name	Number/Description
Pit 719, Context 738		
Watermelon	<i>Citrullus lanatus</i>	616+ fragments
Sweet Melon	<i>Cucumis melo</i>	47
Grape	<i>Vitis vinifera</i>	71
Chinese Date	<i>Zizphus jujuba</i>	8
Chinese Olive	<i>Canarium album</i>	3
Bitter Melon	<i>Momordica charantia</i>	1
Peanut	<i>Arachis hypogaea</i>	8 shell fragments
Coconut	<i>Cocos nucifera</i>	3 shell fragments
Rice	<i>Oryza sativa</i>	several seed hulls
Chinese Winter Melon	<i>Benincasa hispida</i>	2
Wheat	<i>Triticum aestivum</i>	1
Walnut	<i>Juglans sp.</i>	4 shell fragments
Unknown		3
Layer 903		
Watermelon	<i>Citrullus lanatus</i>	9+ fragments
Grape	<i>Vitis vinifera</i>	4
Chinese Date	<i>Zizphus jujuba</i>	1
Chinese Olive	<i>Canarium album</i>	2
Peanut	<i>Arachis hypogaea</i>	shell fragments
Wheat	<i>Triticum aestivum</i>	2
Peach	<i>Prunus persica</i>	1
Layer 954		
Watermelon	<i>Citrullus lanatus</i>	4+ fragments
Wheat	<i>Triticum aestivum</i>	3
Wild Oat	<i>Avena sp.</i>	1
Wild Barley	<i>Hordeum sp.</i>	1

sweetness (Yee and Taylor 1993:87). An archaeological excavation of a tomb dating to between 175 and 145 B.C. found several hemp bags once filled with agricultural products, including the jujube (Ying-Shih Yu 1977:55-56).

The jujube is also used for medicinal purposes. The seed kernels are sometimes used as a sedative (Porterfield 1951:26). The medicinal use of the fruit varies with its color: “black dates tonify the yang of the stomach and spleen; red dates tonify the yang of the circulatory system; brown dates, sweetened with honey, moisten the internal organs” (Kang-Yang and Dahlen 1994:32). They are prescribed as soups, teas, and candies. The black date, the most potent of the three, regularly accompanies and complements angelica root in prescriptions (Kang-Yang and Dahlen 1994:32).

Peach (*Prunus persica*)

The peach, with its long history in China, is one of the foodstuffs that characterize Chinese foodways through the ages (Chang 1977:7). The peach figures prominently in Chinese folklore, traditional religion, literature, and popular culture (Schafer 1977:93-94). The peach is the Taoist symbol of long life and the center motif of the Four Flowers ceramic pattern. The god of longevity is often pictured as issuing from a peach, and families protected their children from death with peach-stone amulets carved in the shape of a lock (Williams 1941:316).

Peach seeds are used in Chinese herbal medicine to treat circulation problems, certain traumatic injuries, and some cases of high blood pressure. They are prescribed as dessert soups (Kang-Yang and Dahlen 1994:40).

Chinese Olive (*Canarium album*)

The Chinese olive is comparable to the jujube in size and is prized in northern and southern China. If eaten fresh the fruit is sour, but they are remarkably sweet when steamed in honey. The fruit is said to be superior to cloves as a breath freshener (Schafer 1977:97). The Chinese olive (*lam*) is often preserved by salting, which is the form most commonly found in the United States. The approximately 1-inch-long ribbed seed tapers to a point at both ends. It is crushed and used medicinally as a poultice and in the treatment of disease (Porterfield 1951:28).

Peanut (*Arachis hypogaea*)

The peanut is a native of South America (Yamaguchi 1983:275). It has been written about in China as early as the 16th century and was being exported as early as the 17th century (Kent et al. 1987:157). Honeysett and Schulz (1984:153) state that peanuts were not commonly eaten by Americans until the end of the 1900s, but were being grown by the Chinese as early as the 1860s.

Watermelon (*Citrullus lanatus*)

The Watermelon is indigenous to southcentral Africa and was introduced into China through India some time in the 10th or 11th centuries (Kent et al. 1987:159; Yamaguchi 1983:32). Seeds are used in China for oil and sometimes ground and baked in breads. Watermelon seeds are served along with other sweets at special festivals such as New Year's Day (Hsu and Hsu 1977:299).

Sweet Melon (*Cucumis melo*)

Sweet melon is an inclusive term used for melons of the muskmelon, cantaloupe, or honeydew varieties. Some species of sweet melons are indigenous to China (Yamaguchi 1983:323).

Coconut (*Cocos nucifera*)

According to Honeysett and Schulz, “coconuts seem to have been a fairly exotic food among Euroamericans, but a more ordinary one among the Chinese” (1984:153).

DISCUSSION

The bitter melon and winter melon were probably grown at one of the Chinese truck gardens within the city limits. The exotic appearance and flavor of these gourds indicate that the Chinese gardeners catered, at least in part, to the local Chinese community. These gourds suggest the spicy cuisine of southern China. The Chinese olives and dates were probably imported in ceramic jars preserved with salt and sugar.

POLLEN ANALYSIS OF SEDIMENT SAMPLES: A RECORD OF VEGETATION CHANGE

By G. James West
Brienes, West & Schulz

INTRODUCTION

The first gold-seekers reaching the Sacramento area encountered plant communities already directly and indirectly modified by human activities. Native peoples who had occupied the area are thought to have changed the vegetation through the use of fire and may have affected the distribution of some species by other subsistence-related activities. John Sutter and other early settlers had cleared the land, planted crops, purposely and accidentally introduced plants that rapidly became weeds, cut down trees for lumber and fuel, and introduced herds of domestic animals that significantly altered the vegetation.

Based on differing dominant land-use patterns, these perturbations in the natural vegetation of the Sacramento area can be divided into three periods: Aboriginal (pre-1769), Hispanic-Sutter (1769-1848), and Gold Rush (1848 to approximately 1852). It is these transformations that are to be examined here.

Prior to 1769 four plant communities were of paramount importance in the Sacramento area: the Riparian Gallery Forest, Oak Woodland, Valley Grassland, and Freshwater Marsh. The only true forest in the area was the Riparian Gallery Forest, which lined portions of the Sacramento and American rivers (Jepson 1893; Stebbins and Taylor 1973; Thompson 1961). Located on the alluvial fan and flood-plain soils of the river levees, these forests formed a dense multistoried vegetational community with a greater niche diversity than any other native ecosystem. Mature stands were typified by a dense crown cover and thick understory; these forests could be subdivided further based on elevation in relation to the river, the amount of seasonal flooding, and substrate. Tall cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), walnut (*Juglans hindsii*), California sycamore (*Platanus racemosa*), and Oregon ash (*Fraxinus latifolia*) formed the deciduous canopy, with white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), and elderberry (*Sambucus mexicana*) dominating the subcanopy. The understory was a dense tangle of willows (*Salix* spp.), lianas, grapevines (*Vitis californica*), and numerous tall herbaceous plants.

The riparian Oak Woodland community, usually associated with alluvial mineral soils formed on overbank deposits, paralleled the Riparian Gallery Forest, and also occurred as discontinuous stands on the better-drained soils. The dominant arboreal form was the valley oak, although box elder and Oregon ash were also common. The Oak Woodland was characterized by only a sparse understory, consisting of poison-oak (*Rhus diversiloba*), elderberry, buckeye (*Aesculus californicus*), wild rose (*Rosa californica*), and a few other woody shrubs. The herbaceous layer of the understory was similar in composition to the Valley Grassland, but with increased abundance of wild rye (*Elymus triticoides*), one of the few rhizomatous grasses common to the pristine Central Valley (Stebbins and Taylor 1973). It is thought that this grass formed a sod in some areas of Oak Woodland (Clements and Shelford 1939). The open and parklike appearance of this community probably was accentuated by aboriginal burning practices.

The Valley Grassland or Central Valley Prairie, also restricted to alluvial mineral soils but generally ones with poorer drainage, flanked the Oak Woodland and extended into the lower foothills before giving way to the Blue Oak Woodland. Perennial bunch grasses such as needle grass (*Stipa* spp.), blue grass (*Poa* spp.), and three-awn (*Aristida* spp.) were the dominant species (Barry 1972). This community was regularly burnt by aborigines to enhance reproduction of specific taxa, gather edible insects and control others, and drive game.

Freshwater Marsh, which formerly covered large areas of low-lying ground in the area, flooded periodically and retained standing water throughout most of the year (Mason 1969). Soils associated with the marshlands were clay loams to peats. Although dominated by tules (*Scirpus* spp.), this community also contained cattails (*Typha* spp.), reeds (*Phragmites communis*), and other marsh plants. Aquatic species, common in places that had deeper permanent water, included pondweed (*Potamogeton* spp.), yellow pond lily (*Nuphar polysepalum*), and knotweed (*Polygonum* spp.).

From 1769 to 1848, the vegetation of the lower Sacramento Valley changed radically. Many alien species, mainly derived from southern Eurasia, were introduced and began to displace native taxa. Agriculture and uncontrolled livestock grazing had drastic impacts on the native vegetation. These changing land-use patterns, in turn, altered the subsistence system of the native peoples and thus their effect on the vegetation. Co-occurring with these events was the rapid and devastating decline in the native population due to introduced diseases, particularly smallpox and malaria (Cook 1943).

John Sutter, who settled in the area in 1839, immediately set about clearing, plowing, planting, building, and grazing cattle, horses, and sheep. By 1840 he had the first enclosed wheat field; it lay just to the north of the fort he had constructed (Thompson and West 1880). In 1846 Sutter had about five or six hundred acres under cultivation, over 7,000 head of cattle, 1,000 sheep, and 1,200 horses. Between 1841 and 1845, Heinrich Leinhard had settled in the area and was cultivating the tract of land between Sutter's Fort and the mouth of the American River.

The large influx of people with the Gold Rush amplified both the direct and indirect changes in the vegetation. As a result, remnants of native vegetation in the project area were almost totally eliminated. The floods of 1850, 1852, and 1853 created a demand for levees and the filling of low-lying areas (Brienes 1979). These activities destroyed the vegetation and changed the habitats to such an extent that the former vegetation could not re-establish itself. China Lake (Sutter Lake), which had supported freshwater marsh flora during the early Gold Rush, was affected. It became, like several other low-lying areas, a dump for the waste created by the rapidly growing city. By about 1910, China Lake was completely filled to enlarge the railyards.

METHODS

Six samples collected, by Mike Meyer and Jack Meyer of the ASC, from geotechnical studies made for the new Federal Courthouse were provided for analysis. Standard palynological techniques were used to process the samples. Prior to chemical treatment, the samples were swirled to concentrate the pollen-size fraction of the sediments by the method outlined in Mehringer (1967). Four tablets with exotic *Lycopodium* spores were added to each sample to monitor processing and determine pollen concentration

values (Stockmarr 1971). A Nikon Labophot microscope with phase contrast was used to scan the samples. Pollen identifications are based on herbarium specimens obtained from the Jepson Herbarium, UC Berkeley, and the Tucker Herbarium, UC Davis, as well as standard texts. Vials of the remaining processed samples, as well as a fraction of the original samples, are stored at the Department of Anthropology, UC Davis.

RESULTS

Five of the of the six samples examined contained pollen, 3 (27-27.5'), 4 (33-33.5'), 6 (37.5-38'), 7 (49-49.5'), 9 (52-53'). Pollen is very sparse and with little exception poorly preserved in Sample 3, a black clay. Pollen preservation in the remaining samples from the gray sandy silt ranges from fair to good, but in all instances pollen concentration is low. All the samples contained charcoal. Sample 2 (25'), also a black clay, had no pollen grains but charcoal was very abundant. Counts were made for four samples (3, 4, 6, 7).

Thirty-five different pollen types were recognized: 11 arboreal forms, 20 nonarboreal, and 4 aquatic-emergent types (Table 67). Arboreal types dominated the counts, with pine (*Pinus*) being the most common taxon. Unknown and undifferentiated grains ranged from about 10% to over 31%. Many of the unknown grains were small tricolpate and tricolporate grains that were most likely derived from nonarboreal species. No pollen grains from alien taxa were observed.

DISCUSSION

The boring for the samples was made at the HI56 Block of Sacramento, some 400 feet north of I Street. The edge of China Lake was roughly 50 feet north of I Street and it is assumed that the 60-foot-deep boring penetrated the middle of the lake. The core profile and sample location is presented in Figure 69. Three main units were identified by Meyer and Meyer—an upper historic-age brown silt and sand (0-24'), a dark clay (24-27.5'), and a lower unit of gray sand, silt, and clay (>27.5'). No samples were provided from the upper unit. The samples examined and discussed here came from the dark clay and gray sand, silt, and clay units. It is thought that the dark clay is representative of China Lake, a former oxbow lake of the American River. The gray sand, silt and clay is, by definition and elevation, prehistoric. At the time the boring was made, the top of the water table was about 22 feet below the surface. Present day sea level is about 26 feet below the surface, just above the gray sand, silt, and clay unit.

There is insufficient pollen in Sample 3, the dark clay China Lake sediments, for meaningful discussion. Bladderwort (*Utricularia*) pollen suggests that this aquatic was growing in the lake. No pollen grains from other aquatic-emergent plants are present, suggesting either differential preservation or that these plants had already been extirpated from the lake. The increased biological activity brought on by dumping may also have contributed to the poor pollen preservation, but specific proof is lacking.

The samples from the gray sand, silt, and clay unit have high pine pollen values of 33 to 51%. As many as 10 species could be contributors to the *Pinus* category. The values are far greater than modern surface samples from the Sacramento-San Joaquin River drainage (Table 68), where the highest values observed are almost 15% for a Riparian Forest along the Sacramento River and 23.6% for one of the open-water samples at Stone

Table 67. Pollen Counts for HI56 Block Sacramento

Sample:	3	4		6		7		
Depth:	27	33		37.5		49		
Pinus 3rds	4	20		20		12		
Pinus	3	110		59		40		
Total Pinus	4	130	51.0%	79	40.1%	62	32.6%	
Abies	0	13	5.1%	13	6.6%	5	2.6%	
TCT	1	12	4.7%	10	5.1%	18	9.5%	
Quercus	3	24	9.4%	12	6.1%	22	11.6%	
Alnus	0	26	10.2%	16	8.1%	20	10.5%	
Fraxinus	1	1		0		0		
Pseudotsuga	0	3	1.2%	1		2		
Tsuga mertensiana	0	0		0		0		
Acer	0	1		0		0		
Corylaceae	0	1		0		1		
Platanaceae	1	0		0		1		
Rhus	0	2		2		1		
Rhamnaceae	3	3		5	2.5%	3	1.6%	
Rosaceae	4	7	2.7%	14	7.1%	10	5.3%	
Artemisia	1	4	1.6%	1		3	1.6%	
Composite Hi Spine	3	4	1.6%	5	2.5%	8	4.2%	
Composite Lo Spine	0	3		10	5.1%	1		
Liguliflorae	0	3		0		0		
Gramineae	0	6	2.4%	4	2.0%	6	3.2%	
Chenopodiaceae	1	2		1		5	2.6%	
Polygonaceae	0	3		5	2.5%	3	1.6%	
Rumex	0	1		0		1		
Gilia	0	0		0		1		
Onagraceae	0	0		1		0		
Umbellifereae	0	2		2		1		
Malvaceae	0	0		1		0		
Ranunculaceae	1	1		1		0		
Ericaceae	0	0		1		0		
Cruciferae	0	0		0		1		
Arceuthobium	0	0		0		1		
Linaceae	0	0		1		0		
Cyperaceae	0	2		6	3.0%	8	4.2%	
Salix	0	0		5	2.5%	5	2.6%	
Isotes	0	1		1		1		
Utricularia	1	0		0		0		
Total:	24	255		197		190		
Unkn/Undiff	11	31.4%	28	9.9%	47	19.3%	30	13.6%
Grand total:	35		283		244		220	
Lycopodium	350		288		365		>325	

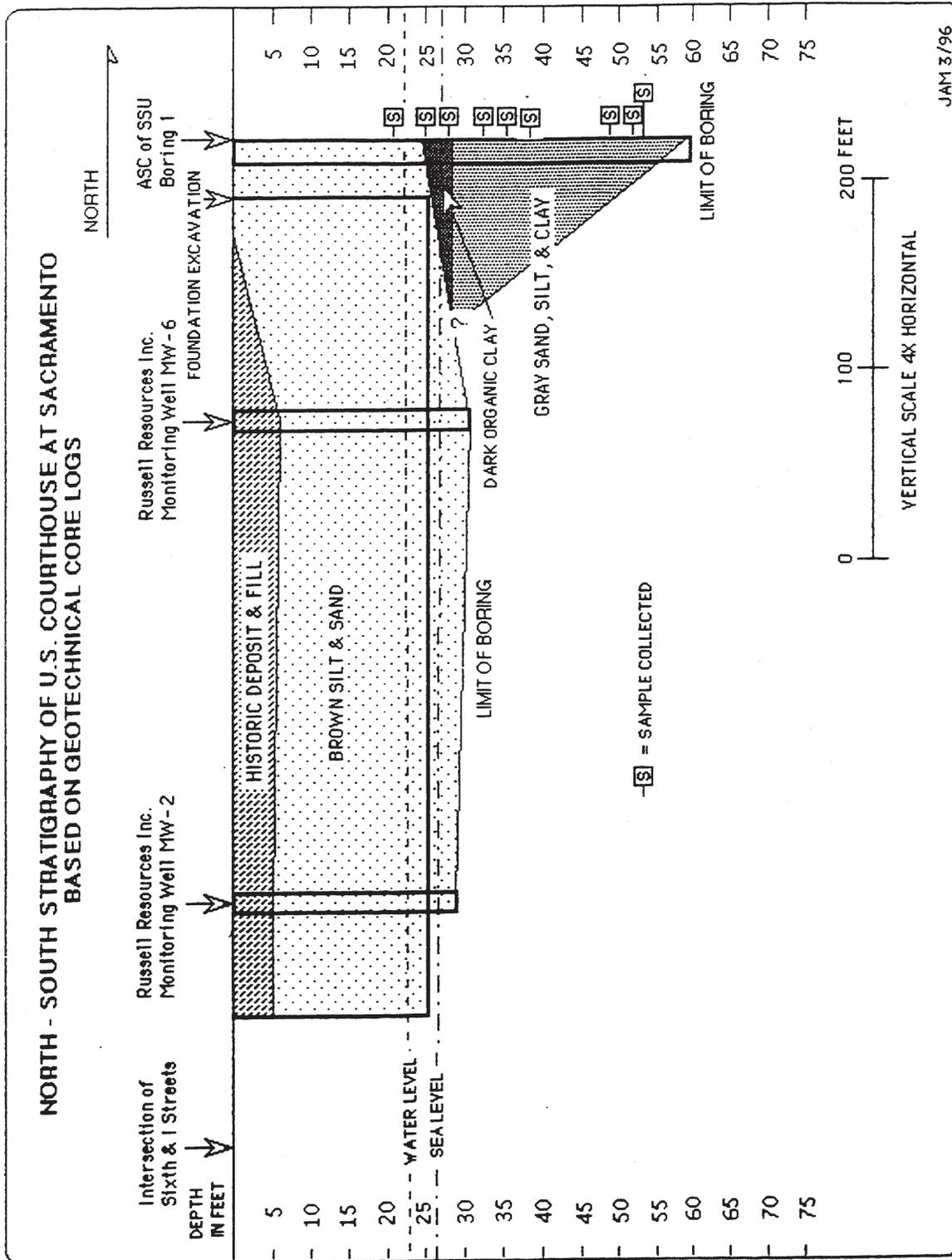


Figure 69. Pollen sample collection locations, HI56 Block Sacramento

Table 68. Modern Surface Pollen Rain of the Sacramento-San Joaquin Drainage Major Pollen Types by Percent (from West 1977)

	Browns Island FW Marsh	Princeton Riparian	Stone Lake #1 FW Marsh	Stone Lake #2 FW Marsh	Hamilton Range Grassland	Cosumnes River Oak Woodland
Pinus	9.7	14.6	3.7	23.6	5.8	10.6
Abies	*	*	0	*	0	*
TCT	0.9	*	0	.1.3	*	0.8
Quercus	8.8	7.4	6.2	5	3.2	29.9
Populus	0	6	*	0	0	0
Juglans	*	3.3	0	*	*	*
Platanus	0	1.1	0	0	0	0
Fraxinus	*	1.1	0	0	0.9	4.1
Alnus	2.9	4.6	0.7	1	1.6	4.7
Salix	2	4.4	20	*	0	2.3
Comp Hi	12.9	2.7	2.4	3.3	27.7	
Comp Lo	3.6	9	3.9	2	29	1.5
Gramineae	8.8	7.9	3.27	14.5	12	32.5
Chenopod	4.5	3	4.7	4.3	2.9	1.9
Polygonaceae	2.4	1.1	1.9	3.7	0	*
Cyperaceae	28.3	3	36	18.5	*	*

*present less than 1%

Lake, a Freshwater Marsh near the Sacramento and Cosumnes rivers. Historic-age samples from Sacramento IJ89 site did not exceed 18% (West 1989). The highest pine value observed in Holocene-age sediments from the Sacramento-San Joaquin Delta, dated between 2,850 and 3,940 years B.P., is 32% for a single sample below a widespread silty clay layer (West 1977) that may be Neoglacial in age. Pine values comparable to those from Samples 4 and 6 are found today above 3,000-3,500 feet in the Sierra (Adam 1967; Anderson and Davis 1988). Anderson and Davis (1988) note that, for the Sierra, pine was not present with values below 24%. Even taking into consideration the effects of long-distance transport, it would appear that pines were growing in the area of the lower American River at the time the gray sand, silt, and clay unit was deposited.

Also striking are the relatively high values for fir (*Abies*) in Samples 4 (5.1) and 6 (6.6). Two species most likely are represented—white (*A. concolor*) and red (*A. magnifica*) fir. Today, white fir is found above 3,000 feet and red fir above 5,000 feet in the Sierra. In the Sierra, fir trees are absent when fir-pollen percentages are less than 2 to 4% (Anderson and Davis 1988). Fir has a large, relatively heavy pollen grain that while resembling pine, has a smaller dispersal range. It is unlikely that fir values this high can be explained solely by long-distance transport. While fir pollen is present in four of the modern surface samples of the Sacramento-San Joaquin drainage, in no instance does it reach 1% of the pollen spectrum (Table 68). Like pine, fir must have been growing in the vicinity of the lower American River.

Alder (*Alnus* spp.) pollen, most likely derived from white alder (*A. rhombifolia*) although mountain alder (*A. tenuifolia*) could also be a contributor, ranges in value from 8 to 10%, reflecting its importance as a riparian tree. Highest values for alder are found in the Sierra between 1,500 and 3,000 feet. In addition to alder, Sample 6 pollen values indicate that sedges and willows were present, possibly growing on the margins of a nearby water course or pond.

Oak (*Quercus* spp.) is present in Samples 4 and 6 (ca. 5%) and Sample 7 (9.5%) but does not approach the values that are found in the Cosumnes River Oak Woodland today (30%; see Table 68), and in the Sierra Oak Woodland and chaparral communities (between 35 and 58%; Anderson and Davis 1988). Five of the six Sierran species are arboreal and most abundant below 3,000 feet. Thus, while oaks were present during the time of deposition of Samples 4, 6, and 7, they were far less prominent than today.

Age and Environment of Gray Sand, Silt, and Clay Unit

Minimally, this unit was deposited during a time of lower sea levels. Post-glacial sea level rise slowed significantly after 8,000 years ago and essentially reached modern levels by about 6,000 years ago (Atwater, Hedel, and Helley 1977). Based on this line of reasoning, and assuming that tectonic subsidence has been minimal, the upper part of the unit should date to the late Pleistocene or early Holocene. There is no evidence of Holocene tectonism that could account for the below sea-level elevation of the unit (Shlemon and Begg 1972).

The composition and condition of the sedimentary unit samples suggests rapid deposition with little alteration after deposition. The composition is compatible with those found in the lower reaches of glacial outwash deposits.

Comparable pollen spectra with high pine and fir values from nonglaciaded low-elevation sites occur at Clear Lake (Adam 1988) and Laguna de las Trancas (Adam, Byrne, and Luther 1981). Such samples have been assigned to the coolest part of the last full glacial cycle of approximately 21,000 to 24,000 years ago. An independent date should be obtained to test this assumption for the Sacramento samples. Temperatures at this time were estimated to be 6-8 degrees cooler than today (Adam and West 1983). A significant climatic factor in the American River drainage would have been cold air drainage, which could have allowed more cold-tolerant taxa to expand down slope. Summers were probably shorter and cooler and sea level was greater than 50 meters (164 feet) lower than today (Atwater, Hedel and Helley 1977).

CONCLUSIONS

While poor pollen preservation precluded the examination of the transition of vegetation from the prehistoric period to the historic, the prehistoric samples provide important new information on the age of the sedimentary unit and local Pleistocene environments. Based on comparative pollen data, the unit is Pleistocene in age, specifically the last full glacial (approximately 21,000-24,000 years ago). The composition of the vegetation was significantly different than today, with the elevational ranges of some taxa occurring possibly as much as 3,000 feet lower. Within the lower American River drainage, pine and fir trees were common, alder was the dominant riparian tree, and oaks were restricted to protected areas where they could survive the colder temperatures.

CHAPTER 6

CONCLUDING REMARKS

AN ANOMALY? OR TIME FOR A REEVALUATION OF ASSUMPTIONS?

Most, although not all, of the collections of artifacts that we have reported on represent the daily refuse of a series of Chinese businesses and boardinghouses dating to the mid-1850s; this chapter will focus on these materials. Many of these artifacts are Chinese in origin and could be taken as evidence for the long-held view that this immigrant group was insular in its outlook and resisted pressures to assimilate into “mainstream” American culture. And to a degree, we believe that this view is correct. A closer look at the collection, however, reveals what at first glance seems to be an anomaly: a high proportion of the artifacts from these archaeological contexts are either British (in the case of ceramics) or were prepared in a standard Euroamerican fashion (in the case of food bones). What does this mean? Is it possible that the project historian could have misidentified the residents of the site? Or that the project archaeologist failed to recognize a disturbed site? Alternatively, had these Chinese pioneers become rapidly more “American” in their culture? Or is there some other explanation?

For years, historical archaeologists have looked for a correlation between the ratio of Chinese and American/European artifacts found on an archaeological site and the degree of cultural change on the part of the Chinese immigrants who were responsible for them. To this end, for example, Edward Staski (1993) compared the proportions of Chinese and non-Chinese ceramic vessels from a number of sites in order to understand the process of assimilation of the Chinese residents of El Paso, Texas. We have never found this approach satisfactory, believing that the taphonomic, historical, and cultural processes that create archaeological assemblages are far too complex to understand by merely comparing numbers of artifacts. We have also found this approach somewhat dehumanizing to the subjects of our study, who are given a largely passive role in the creation of their own culture. Considering the historical context of the present collection and what is known about the people who created it, this is far from accurate.

CHINESE MERCHANTS: VICTIMS OR PROTAGONISTS?

Although Charles McClain has pointed out that Chinese merchants often “reacted with indignation” to official mistreatment, “and more often than not sought redress in the courts” (1994:3), traditional scholarship has portrayed the Chinese in 19th-century California as the passive targets of racism who stoically bore their load. From the outsider’s view, the Chinese population looked like victims who did not have the inclination to defend themselves against either the violence that was perpetrated against them by street bullies or the legal assaults from the State. Yet Overseas Chinese communities have flourished for centuries throughout the world in spite of these

difficulties and it would be naive indeed to think that the merchants—the traditional leaders of these groups—would not have developed some system for influencing their host community to improve their lot.

In previous work, we suggested that the Chinese merchants of Sacramento carefully created an exotic yet unthreatening impression of the Chinese district for the consumption of influential Americans. Part of this strategy was to carefully manipulate traditional displays co-joined with familiar American material culture (Praetzellis, Praetzellis, and Brown 1987). At banquets, festivals, boat races, and other public events, the merchants employed what Jane Lydon has termed a “cultural pidgin publicly uttered [in public events or] privately in individual encounters; it provided a basis for communication which could overcome cultural misunderstanding” (1996:222). Displays of traditional culture that contemporary journalists from the American press praised for their colorful and exciting performances were, on another level, exercises in tradition put on as part of the merchants’ strategy to spread their influence beyond the boundaries of Chinatown. Dell Upton, writing of “Chinese” architecture created in U.S. Chinatowns, states that these “fragments of an idealized high culture serve very effectively in a multiethnic society as metonyms of identity. . . invented traditions reveal the process by which ethnic groups form themselves by *choosing* to commodify their identities” (1996:5, emphasis in original).

Although they were more fleeting expressions of identity put on parade for general consumption than was architecture, the same can be said of the events sponsored by the Chinese merchants of Sacramento.

The Importance of *Guanxi*

While colorful public celebrations in Chinatown attracted widespread attention, the key to the success of Overseas Chinese merchants has been their skill in developing what Lydon has termed a “cat’s-cradle of business contacts and obligations” (1996:222). This system of interpersonal relationships, known as *guanxi*, is described by ethnographer Mayfair Mei-hui Yang as a network of family and social contacts tied together by bonds of obligation and reciprocity (Yang 1994). Significantly, this system is at the basis of traditional Chinese business relationships, whereby merchants develop long-lasting webs of reciprocity and trust with each other, their clients, and those in positions of power. Initially, many of these relationships are established on the basis of shared kinship, locality, and personal recommendations. They are, however, constantly reinforced by formal events such as, in the words of Yang’s title, “gifts, favors, and banquets.” While some have interpreted gift-giving as pure corruption (Lydon 1996:197), it assumes an important role in maintaining balance in reciprocal relations.

Josiah Gallup, Chinese Business Agent

Perhaps the most important business contacts of the Chinese companies of I Street were their American business agents. In the tradition of *guanxi* and out of necessity, the business agent was a trusted associate who represented the merchants’ interests in a number of spheres. Josiah Gallup, who was from a family of Connecticut merchants who had traded in China, was an agent for the Yeung-wo and Sam Yap (Canton) District Associations. Gallup’s papers provide a wealth of information about the role of this important cultural bridge in early Sacramento (Gallup Collection, California State

Library). Where there were permits to be obtained from City Hall, a bond to be posted, or legal representation for a Chinese individual accused of a crime, the American business agent would speak for his District Association. In 1855 an agent, a former Sacramento City judge, was even employed to lobby the State Legislature on behalf of Chinese merchants' and Associations' interests (McClain 1994:23). On a more mundane level—although one that has direct implications to archaeology—where supplies had to be purchased from an American source, the agent put in the order and was reimbursed. Receipts in Gallup's probate file and asides in his private correspondence show that he purchased everything from household supplies and vegetables to building materials for his clients.

If it should seem strange that a wealthy Chinese merchant or Chinese District Association agent would employ a go-between to make these simple purchases, the reader should bear in mind the realities of the 1850s: Language was a significant barrier to communication between the merchants and their potential suppliers. Josiah Gallup, however, was known to the Chinese as the "Chinese interpreter" (Gallup, 15 May 1854). Furthermore, at this time, commodity prices were not fixed and might vary considerably depending upon the perceived gullibility of the purchaser. An American agent would likely have been able to secure a better price for goods, most of which were bought on credit, than a Chinese with limited facility in English, however influential he might be within his own community. In addition to their American agent, the Yeung-wo Association designated a Chinese agent, Tong K. Achick, whose principal role was to facilitate "business with Americans" (*Oriental* 1 March 1855).

Although Tong spoke English fluently and might have carried out most of his duties unaided, he maintained a business relationship with Josiah Gallup. The most important factor that led to this continued relationship may have been the tenuous legal status of Tong and all the Chinese residents of California. The legislative session of 1855 has been described as "perhaps the high-water mark of anti-Chinese sentiment for the entire decade" (McClain 1994:17). The most invidious piece of legislation passed at that time prohibited Chinese from testifying in State courts. Thus, Chinese-owned property was potentially at the mercy of any swindler who cared to make a fraudulent claim. By involving City Alderman Josiah Gallup as middleman in important transactions—particularly those that concerned real estate—his Chinese *guanxi* partners ensured that their property was secure.

When Gallup returned from his trip East, which he had undertaken in order to propose marriage to his cousin, the representative of a Chinese Association immediately engaged Gallup's services to buy a house for him in Sacramento: "The Chinaman heard I had arrived in San Francisco, the head man wrote a letter thinking he would not see me to buy him a house and lot in Sac City; the poor fellow were as glad to see me as you will be perhaps..." (Gallup, 29 September 1853). On 1 October 1853, Gallup sold a building and lot on the KL56 Block to "Aching & Tongkee (Chinamen)" of San Francisco; six local businessmen witnessed the transaction (Deeds L:582). It is interesting to note that among these men were E.L. Barber, the man who, two years later, published a view of the Chinese District (see Figure 3). Chun Aching, agent of the Sam Yap, and Tong K. Achick, of the Yeung-wo, were among the most important Chinese men in California. Aching and Achick both signed a petition letter to "his Excellency, Gov. Bigler" that was published in June 1852; this was the second such

document prepared by the District Associations representing the Chinese miners; Tong K. Achick also signed the first (Barth 1964:146-147).

SOCIAL STRUCTURE OF MERCHANT AND COMPANY HOUSEHOLDS

There are no detailed enumerations of the residents of the I Street merchants' and District Association agents' households in the mid-1850s that are as informative as the decennial U.S. Census Schedules. We may, however, reconstruct these households by combining information from the 1860 census, the papers of Josiah Gallup, and brief published descriptions .

Gallup's biographical material show that he was the American agent for both the Yeung-wo and Sam Yap associations, both of which had boardinghouses on the HI56 Block. In addition to this role, Gallup also owned several teams of horses and wagons. His task was to arrange for the transportation of Chinese immigrants from San Francisco to the Associations' houses on I Street, where they would stay until work was found for them. As many as 300 were transported at one time. According to Gallup, the men's passage from China was paid and arranged by the Company; but Josiah Gallup was also a labor broker, arranging for the employment of the new immigrants as well as transporting them to the mines. In a letter to his cousin that was written over several days, Josiah commented that "about 300 Chinamen came up last night [and] the old dump is full... We had quite a rush last night about 200 Chinaman (sic) came up from the Bay [and] I have been up for 3 nights from 12 o'clock and we have to go to the boat and take them to the house . . . (Gallup, 30 June 1854). The "old dump" and the "house" are surely Chinese Companies' boardinghouses.

A description of the Yeung-wo's San Francisco house in 1855 is provided by an English language newspaper, *The Oriental*, that covered news relating to California's Chinese population:

The smaller apartments below are occupied by the agents and servants of the company. . . The upper story, and the attic, with the out-building on the upper side are, it may be, filled with lodgers; nearly all of whom are staying but temporarily, on a visit from the mines, or on their way to or from China. A few sick persons lie on their pallets around . . . in the rear is the kitchen . . . There is a branch [of the Association] in Sacramento [and Stockton]. These houses are mere lodging places [15 January 1855].

In 1855 four of the five Chinese Companies that had a presence in California had offices and boardinghouses on the HI56 block—Ning Yeung, Sam Yap, Sze Yap, and Yeung-wo. The Sze Yap Association's house at 509/511 I Street was described as containing a "hospital" in 1855 (*Sacramento Union* 4 July 1855). While the house in San Francisco was said to provide "beds, fuel, and water to guests who remain but a short period; also a lodging place and medicines for the infirm, aged, and sick (*Oriental* 25 January 1855). This is consistent with the mutual aid function of the Chinese family associations that sponsored the California off-shoots. By the time that the 1860 U.S. Census was taken of I Street, the Gold Rush had been over for some time and with it, evidently, the need for most Association boardinghouses. The schedule does show several households of two or

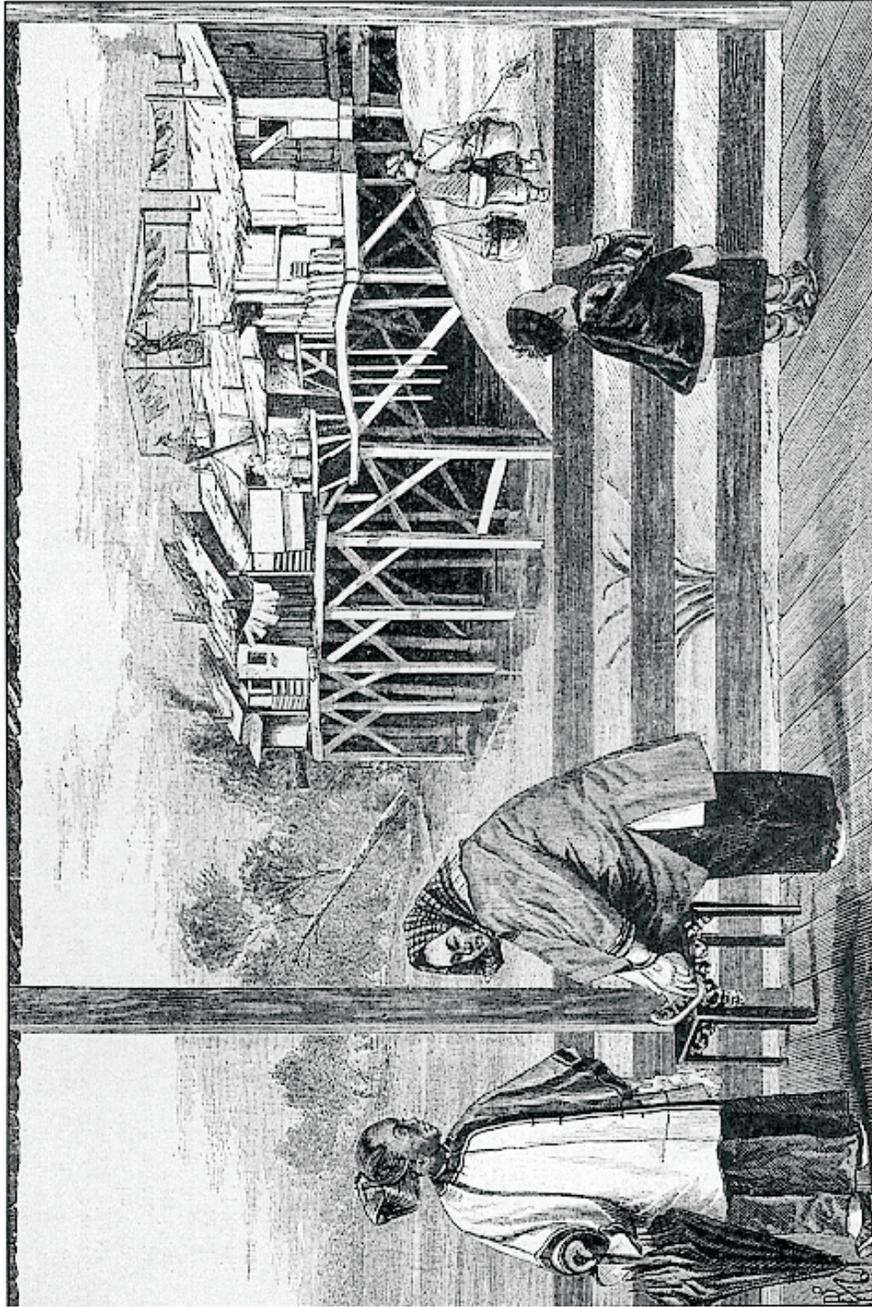


Figure 70. "Chinesen-Quartier in Sacramento, California." *This rather fanciful image shows the rear of buildings, probably between 3rd and 4th streets, that are supported on piers over China Lake. The sight of washing flapping in the wind on laundry roofs was not uncommon in the mid-19th century. In the foreground the artist depicts two Chinese women standing on the 3rd street bridge. (From Frank Leslie's Illustrierte Zeitung, 9 August 1878)*

three merchants, each who, in the custom of the time, were living at their place of business. Only one household was identified as a boardinghouse; here 17 laborers and the man who may have operated the house were listed together.

In summary, during the mid-1850s, it is likely that the Yeung-wo District Association office and boardinghouse at 525/527 I Street, as well as outbuildings behind the stores occupied by Yu Chung Co. at 513/515 I Street and Sang Lee Co. at 507 I Street, would have been home to three groups of people: merchants, who in some cases were the salaried agents of their Association; a permanent staff; and a variable number of transients on their way to or from the mines, or perhaps recuperating from sickness or injury.

Where Did the Artifacts Come From?

In earlier studies of the merchants of I Street, we pointed out that the Chinese population at this time was economically and socially diverse. Consequently, if one wishes to pursue anything other than a large-scale analysis, it is valuable to reconstruct the way in which each portion of the population contributed to the artifacts that are being studied and to suggest ways in which each group conceived and made use of them. In the sections that follow we will consider the respective contributions of the three distinct social groups—Chinese merchants and Chinese District Association agents, staff, and lodgers—who brought in and made use of the artifacts from the 1850s contexts on this site. Although these reconstructions are based on documentary sources to avoid circularity, the record is incomplete, making some of these reconstructions more conjectural than others. In addition, some classes of artifacts would have been used by all three groups.

The Lodgers

According to a contemporary account, the Yeung-wo had strict rules that defined the conduct and personal possessions of members who stayed at their boardinghouses.

In the company's house there must be no concealment of stolen goods, no gunpowder or other combustible material, no gambling, no drunkenness, no cooking (except in the proper quarters), no burning of sacrificial papers, no accumulation of baggage, no filth, no bathing, no filching oil, no heaps of rags or trash, no wrangling and noise, no injury to property of the company, no goods belonging to thieves, no slops of victuals. . . . Baggage not allowed to remain longer than three years; nor more than one chest to each person [*Oriental* 1 March 1855].

Although they no doubt ate most of the food that was served at the houses, the lodgers' own decisions would not be represented in the food remains. The boardinghouses had an institutional structure in which tasks were segmented; the purchase and preparation of food was not part of the lodgers' role. Their personal possessions were limited to what could be fitted into a chest and stored at the Association's main house in San Francisco.

This arrangement is reminiscent of the company boardinghouses operated by the managers of the Boott Mills, in Lowell, Massachusetts (Beaudry and Mrozowski 1989). Here, too, there was relatively little opportunity for residents to affect the content of the archaeological record. Where they did so, however, the remains speak eloquently of the

lives of these working people. Using the archaeological discoveries at the Boott Mills boardinghouses as a model (Ziesing 1989), we assume that the lodgers' contributions would relate mostly to their leisure activities and personal habilitment. These categories contain the following varieties of artifacts: alcohol containers, opium-smoking materials, gaming pieces, personal adornments, and clothing parts and attachments.

The Staff

In the Associations' San Francisco houses, the staff consisted of "servants who take care of the building, cook the food, and attend the sick" and who lived on the premises (*Oriental* 8 February 1855). We assume that, although the staff was permanent, they had relatively low social status and that among their duties would be to order the house's day-to-day necessities that could be obtained locally and from Chinese sources. These materials would include vegetables grown by Chinese gardeners, fish netted by Chinese fishermen, meat from Chinese butchers, poultry from Chinese farmers, and game animals from market hunters.

The Chinese characters scored into the surface of several tablewares signaled ownership. Although it is not known whether these vessels were the personal property of lodgers or staff, or whether they were District Association property, the former seems likely as there is very little duplication among these marks.

The Merchants and District Association Agents

In the case of a store, we assume that individual merchants chose their stock on the basis of salability, availability, and their particular specialty. These materials would duplicate many of the items owned by lodgers and staff. In practical terms, however, merchants' stock can be identified by its extreme redundancy, such as the stash of 51 Double Happiness design bowls that was found in excavations of a merchant's backlot on the south side of I Street (Praetzellis and Praetzellis 1982). In the same way that the officials at the Boott Mills were responsible for most of the contents of their boardinghouses, it is clear that the Chinese District Association agents made the decisions that determined the pattern of artifacts from the early contexts on this site. The Chinese Associations' own network would have supplied artifacts from China, such as ceramic tablewares to be used by all residents of the boardinghouse; specialty Chinese foods, such as oils, sauces, fish, and vegetables many of which were packed in ceramic vessels; and medicines.

The agents, however, could not supply all the needs of their house from their own resources; for the reasons described above, they would often employ American business agents to represent them in dealings with non-Chinese. Records show that these Americans purchased supplies that could not be obtained either from China, from local Chinese suppliers, or from a limited number of non-Chinese businesses. Thus, working with San Francisco wholesalers, the agents supplied such materials as lumber and building hardware, bulk foodstuffs such as potatoes, onions, and salted fish shipped in barrels from the Eastern United States, as well as tools, equipment, and wagons. It is unclear whether the agents arranged purchases of meat from local American butchers, but this seems likely. Gallup's probate listed the accouterments of a butchershop, including knives, scales, saws, and sausage machine, on his ranch along with cattle and hogs (Gallup, Probate File). Although table- and serving wares would have been a very

minor expenditure, the American agents would have supplied these items, when asked to do so, via their San Francisco contacts.

Since the Chinese District Association agents were salaried staff and some of the merchants were independent entrepreneurs of significant means, it can be assumed that their personal accouterments would have reflected their status. This subject will be discussed at greater length in the next section.

Why should the Chinese District Associations have instructed their American agents to buy tablewares for their boardinghouses? It is our belief that the supply network from China in the early and mid-1850s was so erratic that these materials were simply unavailable when they were needed. Chinese immigration to California grew dramatically at this time, taxing the supply network past its limit. By 1860 the Chinese Associations' supply conduits to California were well established and there would have been no need to go outside of it for these kinds of goods.

The evidence for this proposition comes from a qualitative and admittedly unscientific comparison of ceramic collections from overseas Chinese sites of different dates. Collections from 1850s contexts in California commonly contain examples of monochrome, underglaze decorated, Chinese porcelaineous stonewares of a quality and of various decorative styles that approximate the common "Longevity" type. On the basis of their relatively poor quality, it is assumed that the former were created for domestic Chinese and Overseas Chinese use in the same way as types such as "Longevity," "Double Happiness," and "Four Flowers," which are often found archaeologically on Overseas Chinese sites but rarely in the domestic refuse of Euroamericans. These porcelaineous stonewares usually occur archaeologically as one-of-a-kind items. The present collection contains at least half a dozen of these unique vessels (see Chapter 5; Figures 35, 36, 38, 39, 40, 41, and 42). At the same time, the ceramics' basal marks on these and other vessels show that several different potteries supplied the wares. By the late 1850s, these one-of-a-kind items disappear from assemblages of utilitarian tableware ceramics from Overseas Chinese sites, which become relatively homogeneous. The majority consist of CBGS, "Longevity," "Double Happiness," "Four Flowers," and "Celadon" types. Based on the emic perception as an item used only by the poor (Yang and Hellmann 1996), the CBGS form known as the "pan" should be included in this group of low-status ceramics. The trend toward homogeneity is particularly noticeable in assemblages from working-class contexts and contexts with restricted sources of supply, such as work camps; it is less apparent in material from urban households. Where variation does occur in tableware on these later sites, it takes the form of the occasional porcelain vessel decorated in polychrome overglaze enamel.

We hypothesize that the relative heterogeneity of Chinese ceramic types from early contexts indicates that the companies and Associations had a problem with their supply networks, and that the increasing homogeneity of these materials indicates that this was solved by the late 1850s. This temporary problem forced the Chinese agents to turn to their American counterparts to purchase whatever tablewares were available from American wholesalers.

Two Sets of Chinese Merchants and Their Artifacts

At the same time that Chinese District Associations ran their boardinghouses on the north side of I Street, merchants Wing Lee and Quong Fat lived on the more desirable south side at the rear of their stores at 144/146 I Street (Praetzellis and Praetzellis 1982). A comparison between archaeological collections from these sites on either side of I Street suggests some of the archaeological indicators of status differences within the Overseas Chinese population at this time. Historic records show that the independent businessmen at 144/146 I Street were quite well off. The archaeological record shows similarities with the artifacts from Pit 16 (early deposit), which may represent a Chinese District Association agent's household. In contrast, are deposits representing the boardinghouse residents.

The ceramic collection from Wing Lee and Quong Fat at 144/146 I Street, which is summarized in Table 69, is overwhelmingly Chinese in origin. It has a similar range of Chinese tablewares and storage vessels as the contemporary Chinese-associated context from the north side of I Street. There is also a subtle similarity between the British ceramics: both contain vessel forms that are not represented in a third collection, Context 903, which may be remains left primarily by boardinghouse lodgers. The British groups of all three collections consist mostly of flat forms, such as plates and soup plates. Of the three collections, Context 903, believed to be associated with Chinese lodgers, has by far the highest proportion of British wares of the three. Both 144/146 I Street and Pit 16 (early deposit), however, contain an anomalous transferprinted hollow form and a teapot, and a large basin, respectively. We suggest that the merchants used these items for display, and predict that archaeological collections from the households of Overseas Chinese merchants in other countries will contain artifacts from the local popular culture, since they too would have engaged in the same strategy. One "Willow" pattern plate from Pit 16 even bears the same kind of incised Chinese character that are relatively common on Celadon vessels (see cover).

The food remains from Pit 16 and 144/146 I Street, the presumed merchants' deposits, are quite different from those recovered from Context 903. The latter is made up overwhelmingly of inexpensive cuts of beef, with relatively little pork or imported Chinese meat or fish. Pork was both highly desired by Chinese immigrants and relatively expensive in 1850s California. In contrast, the remains from 144/146 I Street (Tables 70 and 71) and Pit 16 are dominated by pork and contain far more imported Chinese fish and reptile food remains (see Gust and Schulz, respectively, Chapter 5; Gust 1982; Schulz 1982). Although Schulz notes that some fish exported to California were "characteristic of very poor families" in China (1982:85), it may be that the relative scarcity and higher price of these items in California increased their desirability.

HOW CHINESE MERCHANTS AND ASSOCIATION AGENTS USED NEW ARTIFACTS TO CARRY OUT AN OLD STRATEGY

It was a complicated set of circumstances that led to thousands of artifacts from three continents being assembled at the edge of China Lake in Sacramento, then used, and eventually discarded there. We suggest that these artifacts functioned within two social dynamics that played out at this location. One was internal to the site and based on the relative wealth and power of the ethnic Chinese who lived there. The other was

Table 69. Ceramic and Glass, Tableware and Containers from 144/146 I Street, IJ56 Block Sacramento¹

Features 4, 5, 11, and Layer 111

Decoration	Form	N/MNI
	<i>Chinese Tableware and Serving Vessels</i>	
Celadon	Medium Bowl	15/3
Celadon	Small Dish	2/1
Celadon	Spoon	1/1
Double Happiness	Medium Bowl	30/4
Four Flowers	Small Bowl	7/1
Four Flowers	Spoon	1/1
Underglaze Blue	Medium Bowl	42/5
Underglaze Blue	Small Plate	3/1
Underglaze Blue	Small Dish	1/1
Underglaze Blue	Wine Pot	26/2
Overglaze Polychrome	Tiny Cup	1/1
Underglaze Blue	Lid, Ginger Jar	3/1
<i>Subtotal</i>		<i>132/22</i>
	<i>Chinese Containers</i>	
CBGS	Liquor Bottle	20/16
CBGS	Straight-sided Jar	16/1
CBGS	Lid, Straight-sided Jar	9/2
CBGS	Wide-mouthed Jar	18/2
CBGS	Small Spouted Pot	4/3
CBGS	Pan	4/1
CBGS	Huge Gobular	6/1
CBGS	Stew Pot	1/1
CBGS	Recessed-Rim Jar	13/1
CBGS	Lid, Wide-mouthed Jar	31/6
CBGS	Jar	12/2
CBGS	Huge Barrel	15/1
CBGS	Lid, Huge Barrel	5/1
CBGS	Large Barrel	31/2
CBGS	Jar, Unglazed	54/2
CBGS	Miscellaneous sherds	743
<i>Subtotal</i>		<i>982/42</i>

¹ Sherds that mend counted as one. Taken from Praetzellis and Praetzellis 1982:Table 12

Decoration	Form	N/MNI
Features 4,5,11, and Layer 111 continued		
	<i>Non-Chinese Tableware and Serving Vessels</i>	
Porcelain, Floral	Saucer	1/1
Blue Transfer Print "Temple"	Plate	3/1
Blue Transfer Print, Scenic	Teapot	6/1
Blue Transfer Print	Miscellaneous Sherds	6/4
Flow Blue	Plate	1/1
White Earthenware	Miscellaneous Sherds	14/
<i>Subtotal</i>		<i>31/8</i>
	<i>Non-Chinese Containers</i>	
Stoneware	Crock	1/1
Stoneware, bottle		1/1
Glass, bottle	Liquor	8/2
Glass, bottle	Wine	38/18 ²
Glass, bottle	Porter/ale	9/5
Glass, bottle	Brandy	1/1
Glass, bottle	Champagne	3/2
Glass, bottle	Food	1/1
Glass, bottle	Ketchup	1/1
Glass, bottle-stopper	Lea & Perrins Sauce	1/1
Glass, bottle	Soda	2/1
Glass, bottle	Medicine	1/1
<i>Subtotal</i>		<i>67/35</i>
<i>Total</i>		<i>1212/107</i>

² Count includes rims and bases only

Table 70. Fauna Represented by Number of Identified Specimens for 144/146 I Street, IJ56 Block Sacramento

Features 4, 5, 11, and Layer 111

Common Name	Scientific Name	Number
Major Meat Animals		
Cattle	<i>Bos taurus</i>	21
Pig	<i>Sus scrofa</i>	622
Sheep	<i>Ovis aries</i>	17
Incidental Animals		
Dog	<i>Canis</i>	2
Rat	<i>Rattus sp.</i>	15
Domestic Poultry		
Chicken	<i>Gallus gallus</i>	3
Turkey	<i>Meleagris gallopavo</i>	1
Wild Game Birds		
Coot	<i>Fulica americana</i>	1
Goose	<i>Anser spp.</i>	3
Mallard	<i>Anas spp.</i>	3
California Fishes		
Sturgeon	<i>Acipenser sp.</i>	1
King Salmon	<i>Oncorhynchus tshawytscha</i>	9
Minnnows or suckers	<i>Cyprinoidea</i>	5
Thicktail Chub	<i>Gila crassicauda</i>	2
Sacramento Blackfish	<i>Orthodon microlepidotus</i>	1
Rockfish	<i>Sebastes sp.</i>	3
Sacramento Perch	<i>Archoplites interruptus</i>	15
Petrals Sole?	<i>Eopsetta jordani</i>	5
Chinese Fishes		
Yellow Crocker	<i>Pseudosciaena crocea</i>	163
Chinese Cephalopod		
Cuttlefish	<i>Sepia sp.</i>	11

Table 71. Meat Weight by Economic Status for IJ56 Block Sacramento

	Meat Wt. in lbs.	Percent within type	Percent within price	Percent of Total
BEEF				
high			8	
porterhouse	-			
sirloin	-			
prime rib	1.4	7.6		
moderate			12	
round	-			
rump	-			
chuck	2.2	11.9		
rib	-			
low			81	
hindshank	12.5	67.6		
brisket	-			
foreshank	-			
neck	2.4	13		
TOTAL	18.5	100.0	100	4
MUTTON				
high			11	
loin	0.8	10.7		
sirloin	-			
leg	-			
moderate			15	
rib	-			
shoulder	1.1	14.7		
low			75	
hindshank	-			
brisket	-			
foreshank	-			
neck	5.6	74.7		
TOTAL	7.5	100.0	100	1
PORK				
high			29	
sirloin	57.4	11.9		
loin	19.3	4.0		
ham	64.4	13.4		
moderate			37	
rump	142.0	29.5		
shoulder butt	13.3	2.8		
picnic	24.0	5.0		
low			33	
belly	-			
neck	4.4	0.9		
jowl	11.8	2.5		
shank	137.0	28.5		
feet	7.6	1.6		
TOTAL	481.2	100.0	100	95
GRAND TOTAL	507.2			

external and involved the relationship of the Chinese merchants and Chinese District Association agents to the California political establishment.

First, we have shown that the site was home to at least three Chinese social groups: merchants/Chinese Association agents, their staff, and transitory lodgers. We hypothesize that the relationship between these groups—the internal dynamic—was based on their relative wealth and their social roles, and that part of this dynamic will be reflected in the archaeological remains. Although relatively few artifacts would have been actually purchased by the lodgers themselves, differences in diet imposed by the District agents on the low-status lodgers may be seen archaeologically. Faunal remains from contexts that represent boardinghouses show a relatively high proportion of meats that were less than desirable in traditional Chinese cooking. In a culture that prizes light-colored meats, such as pork and chicken, the majority of meat utilized was low-priced beef, mutton, and even wild game (see Chapter 5). It is postulated that the contrast between highly desired and less-desired meats reflects the eating habits of merchants and lodgers, respectively. From this perspective, the presence of a substantial quantity of food bone that was butchered in typical “American” fashion has some behavioral significance in that it shows that the boardinghouse staff was purchasing meat from Americans but does not suggest a change in traditional Chinese cultural mores.

In addition to better food, the merchants and Chinese Association agents would also have had greater access to the imported specialty items that are represented at the site. These would include fine porcelains (e.g., Figure 44) and imported foods such as turtle and Asian fishes, which were represented in Pit 16 (early deposit). In contrast, lodgers would have eaten from standard utilitarian ceramics and would have been fed the less expensive products of local Chinese fisheries and market hunters—thus the heavy representation of several freshwater California fish species.

The sheer number of British utilitarian ceramic forms (plates, soup plates, and bowls) supports the idea that they were used in the boardinghouses by lodgers and staff—although not exclusively so—on a day-to-day basis. Again, we do not believe that using British transferprinted ceramics had much significance to the Chinese lodgers. Their world was very Chinese, and ceramics—especially ones that they did not chose themselves—would have played a tiny role in creating and re-creating it.

We emphasize that this model of interpretation is only relevant to this particular historical context: the co-residence of a transient population of poor individuals and a permanent group of higher-status people at a time when trade networks were erratic. No one should assume there is an absolute correlation, across time and regardless of historical context, between these patterns of artifacts and the status differentiations that we suggest existed on this site.

The second dynamic concerns the relationship between the merchants and Chinese Association agents and the non-Chinese elements of their *guanxi* network—men like Josiah Gallup, local business leaders, government officials, and opinion makers. In this sphere, artifacts were among the tools used by merchants and Chinese agents to enhance their relations with non-Chinese. Table ceramics played a small but essential role in this cultural drama both in public banquets and as symbolic objects—such as the large transferprinted basin from the Yeung-wo’s refuse (Pit 16, early deposit)—in the public rooms of District Association houses.

In the 1850s and 1860s, Chinese merchants held regular banquets for influential members of Sacramento's establishment. One such event, which may have taken place in the brick building at 144/150 I Street occupied by Ten Yuen and other Chinese merchants, was recorded by a reporter from the *Sacramento Bee* (7 December 1861). This banquet is an example of *guanxi* par excellence. Here, public officials and prominent businessmen were treated to a 26-course Chinese meal, which subtly fused Chinese food and environment with the familiar symbols of Euroamerican popular culture. The event took place in a room behind a store, decorated with Chinese paintings, sculptures, and hangings. The dining table was set with a cloth, knives, forks, and celery in glasses "very much like ordinary tables." The newspaper correspondent had looked forward to the pleasure of eating with chopsticks, but there were none to be seen. Champagne was served several times, and "the brands were all different and all first rate."

Through staged events and by decorating their public rooms with items of popular Victorian material culture, Chinese merchants fostered the impression of themselves as "men of intelligence, ability, and cultivation" (California Legislature 1853:5, cited in McClain 1994:26). For although xenophobic attitudes were common among populist politicians, a significant minority of influential Californians—who were their agents, landlords, and customers—saw Chinese merchants as quite Victorian in their devotion to hard work and frugality. Encouraged by ritual performances such as the dinner that we have described above, this group was encouraged to recognize the class divisions within the Chinese population and the high cultural sophistication of the wealthy.

But the Chinese agents' attempt at *guanxi* was limited in its effectiveness. Sadly, only a few years later the anti-Chinese movement had gathered so much steam that virtually no elected official or newspaper editor would support Chinese interests nor represent them. Soon it was commonly held that only the "dregs" of Chinese society had made their way to California. In 1882 the influence of the Overseas Chinese population reached its nadir with the passage of the so-called Chinese Exclusion Act.

CONCLUSION

The Chinese pioneers of mid-19th-century California were not a socially, economically, or even culturally homogeneous group. By the same token, their artifacts do not have fixed meanings that can be deduced without reference to the contexts in which they were used. Thus we conclude that various segments of the Overseas Chinese population used similar-appearing types of artifacts in different ways and for different purposes.

In this chapter we have attempted to show that California's Chinese population used non-Chinese artifacts both out of practicality and as part of a traditional strategy. Far from demonstrating cultural change or accommodation on the part of the overseas Chinese, when employed as a component of *guanxi*, British Chinoiserie and other Victorian artifacts became part of an extremely conservative cultural tactic that is embedded in traditional Chinese values. Ironically, these early Chinese businessmen chose the icons of Victorian popular culture—such as the "Willow" pattern plate shown on the cover of this report—to advance this decidedly Asian strategy.

REFERENCES CITED

Adam, David P.

1967 Late Pleistocene and Recent Palynology in the Central Sierra Nevada, California. In *Quaternary Paleoecology*, edited by E.J. Cushing and H.E. Wright, pp. 275-301. Yale University Press, New Haven.

1988 *Palynology of Two Upper Quaternary Cores from Clear Lake, Lake County, California*. U.S. Geological Survey Professional Paper 1363, Washington, D.C.

Adam, David P., Roger Byrne, and Edgar Luther

1981 A Late Pleistocene and Holocene Pollen Record from Laguna de Las Trancas, Northern Coastal Santa Cruz County, California. *Madrono* 28(4):255-272.

Adam, David P., and G. James West

1983 Temperature and Precipitation Estimates through the Last Glacial Cycle from Clear Lake, California, Pollen Data. *Science* 219:168-170.

Advisory Council on Historic Preservation (ACHP)

1990 *Treatment of Archaeological Properties: A Handbook*. U.S. Government Printing Office, Washington, D.C.

Akin, Margie, and Kevin Akin

1987 Asian and American Coins from Riverside's Chinatown. In *Wong Ho Leun: An American Chinatown*, pp. 233-249. Great Basin Foundation, San Diego California.

Allen, G.R.

1985 Snappers of the World: An Annotated and Illustrated Catalogue of Lutjanid Species Known to Date. *FAO Fisheries Synopsis* No. 125, Vol. 6.

Allen, Jamey D.

1983 The Manufacture of Intricate Glass Canes, and a New Perspective on the Relationship Between Chevron-Star Beads and Mosaic-Millefiori Beads. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III, *Rochester Museum and Science Center, Research Records* 16:173-191. Rochester, New York.

Alta California

1853 Chinese Fishermen. *Alta California* (San Francisco) 5 March 1853:2.

1855 Bay, Coast and River Fish. *Alta California* (San Francisco) 21 May 21 1855:2.

- Ames, Kenneth L.
1978 Meaning in Artifacts; Hall Furnishings in Victorian America. *Journal of Interdisciplinary History* 9:19-46.
- Amyot, Jacques
1973 *The Manila Chinese: Familism in the Philippine Environment*. Institute of Philippine Culture Monographs, No. 2. Ateneo de Manila University, Quezon City, Philippines.
- Anderson, Eugene
1972 Essays on South China's Boat People. *Asian Folklore and Social Life Monographs* 19:1-146.
- Anderson, E.N., Jr., and Marja L. Anderson
1977 Modern China: South. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 317-383. Yale University Press, New Haven and London.
- Anderson, R. Scott, and Owen K. Davis
1988 Contemporary Pollen Rain Across the Central Sierra Nevada, California, U.S.A.: Relationship to Modern Vegetation Types. *Arctic and Alpine Research* 20 (4):448-460.
- Anonymous
1835 Miscellaneous Communications from an American Naval Officer, Traveling in Europe; Forwarded from the Mediterranean, May 1834. *American Journal of Science and Arts* 27(1):74-84.
- Askin, Dorene
1978 Awful Conflagration! Ms. on file, California Department of Parks and Recreation (DPR), Cultural Resources Management Unit, Sacramento.
- Atwater, Brian F., Charles W. Hedel, and Edward J. Helley
1977 *Late Quaternary Depositional History, Holocene Sea-Level Changes, and Vertical Crustal Movement, Southern San Francisco Bay, California*. U. S. Geological Survey Professional Paper 1014. Washington, D.C.
- Au Lai-shing
1970 An Inventory of Demersal Fisheries in Hong Kong. *Indo-Pacific Fisheries Council, Proceedings* 13(2):270-297.
- Ayres, William O.
1854a Descriptions of New Species of Fish. *California Academy of Natural Sciences, Proceedings* 1:7-8.
1854b The Sturgeons Found in Our Waters. *California Academy of Natural Sciences, Proceedings* 1:14-16.

- Baker, George
1854 Official Map of the City of Sacramento. On file, California State Library, Sacramento.
- 1857 The City of the Plain [Bird's-eye view]. Barber and Baker, Sacramento.
- Bancroft, Hubert H.
1888 *History of California, 1848-1866, Volume IV*. The History Company, San Francisco.
- Barber, Edmund L., and George H. Baker
1855 *Sacramento Illustrated*. Barber and Baker, Sacramento.
- Barry, W. James
1972 *The Central Valley Prairie*. State of California, the Resources Agency, Department of Parks and Recreation (DPR), Sacramento.
- Barth, Gunther
1964 *Bitter Strength: A History of the Chinese in the United States, 1850-1870*. Harvard University Press, Cambridge, Massachusetts.
- 1975 *Instant Cities: Urbanization and the Rise of San Francisco and Denver*. Oxford University Press, New York.
- Beals, Herbert K.
1980 Chinese Coins in Six Northwestern Aboriginal Sites. *Historical Archaeology* 14:58-72.
- Beaudry, Mary C., Lauren J. Cook, and Stephen A. Mrozowski
1991 Artifacts and Active Voices: Material Culture as Social Discourse. In *The Archaeology of Social Inequality*, edited by Robert Paynter and Randall H. McGuire, pp. 150-191. Basil Blackwell, Oxford.
- Beaudry, Mary C., and Stephen A. Mrozowski (eds.)
1989 *Interdisciplinary Investigations of the Boott Mills, Lowell, Massachusetts; Volume III: The Boardinghouse System as a Way of Life*. National Park Service, Boston.
- Beck, Horace C.
1928 Classification and Nomenclature of Beads and Pendants. *Archaeologia* 77:1-76. Oxford.
- Beecher, Henry Ward
1868 *Norwood*. Charles Scribners' Sons, New York.

Beers, J.H. & Co.

1905 *Genealogical and Biographical Record of New London County, Connecticut*. J.H. Beers & Co., Chicago.

Bender, Thomas

1978 *Community and Social Change in America*. John Hopkins University Press, Baltimore.

Berthoff, Rowland

1953 *British Immigrants in Industrial America, 1750-1950*. Harvard University Press, Cambridge, Massachusetts.

Binford, Lewis R.

1962 Archaeology as Anthropology. *American Antiquity* 28:217-225.

1965 Archaeological Systematics and the Study of Culture Process. *American Antiquity* 31:203-210.

Blanford, John

1987 Overseas Chinese Ethnicity and Euroamerican Glass Bottles at the Wong Ho Leun Site. In *Wong Ho Leun: An American Chinatown*, pp. 189-223. Great Basin Foundation, San Diego, California.

Bone, Kenneth Jone

1975 A Preliminary Analysis of Beads from Mission Santa Clara de Assis, Santa Clara County, California; SCI-30, the "Third Mission Site," Corner of Franklin and Campbell Streets, and the "Fifth Mission Site" - Present Site of the Mission Church. Unpublished manuscript (Ms).

Brienes, Marvin

1978 The People's Potties: From Filth Pit to Flush Toilet in Sacramento, 1849-1900. Ms. on file, Cultural Resources Management Unit, California DPR, Sacramento.

1979 Sacramento Defies the Rivers: 1850-1878. *California History* 58(1): 3-19.

Brienes, West & Schulz

1981a Overview of Cultural Resources in the Central Business District, Sacramento, California. Ms. on file, Sacramento Museum and History Department, Sacramento.

1981b Research Design for Archaeological Test Excavation on the IJ56 and IJ67 Block, Sacramento. Ms. on file, Sacramento Museum and History Department, Sacramento.

1981c Research Design for Archaeological Test Excavation on the HI56 Block, Sacramento. Ms. on file, Sacramento Museum and History Department, Sacramento.

Brott, Clark W.

1982 The Rice Was Served in Celadon, The Opium Came Packed in Brass. In *Moon Lee One: Life in Old Chinatown, Weaverville, California*, pp. 46-58. Great Basin Foundation, Redding, California.

1987 Utilitarian Stoneware from the Wong Ho Leun Site: A Pictorial Essay. In *Wong Ho Leun: An American Chinatown*, pp. 233-249. Great Basin Foundation, San Diego, California.

Brown, Marley R., and Kathleen Bragdon

1982 Research Design. In *Archaeological and Historical Studies of the HI56 Block, Sacramento, California: An Early Chinese Community*, by Mary Praetzellis and Adrian Praetzellis, pp. 39-49. Anthropological Studies Center, Sonoma State University (ASC, SSU), Rohnert Park, California.

Brown, Richard D.

1976 Modernization: A Victorian Climax. In *Victorian America*, edited by Daniel Howe, pp. 29-46. University of Pennsylvania Press, Philadelphia.

Bryant, Edwin

1936 *What I Saw in California: Being the Journal of a Tour*. Fine Arts Press, Santa Ana, California.

Buck, Franklin A.

1930 *A Yankee Trader in the Gold Rush*. Houghton Mifflin, Boston.

Burcham, L.T.

1957 *California Range Land*. Department of Natural Resources, State of California, Sacramento.

Bussolin, Dominique

1847 *Les célèbres verreries de Venise et de Murano*. H.F. Münster, Venice. Portions translated into English in 1990 by Karlis Karklins with Carol F. Adams.

Butler, Brenda J.

1979 Archeology of the Cothrin Building, Old Sacramento, California. Ms. on file, California DPR, Cultural Resources Management Unit, Sacramento.

Carroll, Jr., B. Harvey

1917 Bead Making at Murano and Venice. Manuscript, General Records of the Department of State (RG-59), State Decimal File 1910-1929, File No. 165.184/3, National Archives, Washington, D.C.

Casteel, Richard W.

1972 The Use of Fish Remains in Archaeology, with Special Reference to the Native Freshwater and Anadromous Fishes of California. Ph.D. dissertation, University of California, Davis.

Chace, Paul G.

1976 Overseas Chinese Ceramics. In *The Changing Faces of Main Street*, edited by Roberta S. Greenwood, pp. 509-530. Great Basin Foundation, San Diego, California.

1989 The Turtledove Messenger, a Trail of the Early Los Angeles Chiao Ceremony. *Gum Saan Journal* 12(2):1-9.

Chambers's Journal

1854 Chinese Fisheries in California. *Chambers's Journal of Popular Literature* (London). Jan. 21, 1854:48.

Chan, Antony

1984 Western Images of the Chinese in Canada. In *The Chinese American Experience*, edited by Genny Lim, pp. 322-333. Chinese Historical Society of America, San Francisco.

Chang, K.C.

1977 Introduction. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 1-23. Yale University Press, New Haven and London.

Chavannes, Edouard

1922 *DeL'expressions Des Voeus Dans L'art Populaire Chinois*. Editions Bossard, Paris. Translated as *The Five Happinesses* by Elaine S. Atwood, Weatherhill, New York, 1973.

Chen, Jack

1981 *The Chinese of America*. Harper and Row, San Francisco.

Chinn, Thomas W., H.M. Lai, and P.P. Choy

1969 *History of the Chinese in California: A Syllabus*. Chinese Historical Society of America, San Francisco.

Clark, Clifford E.

1976 Domestic Architecture as an Index to Social History: The Romantic Revival and the Cult of Domesticity in America, 1840-1870. *Journal of Interdisciplinary History* 7(1):33-56.

Clements, Fredrick B., and Victor E. Shelford

1939 *Bio-ecology*. John Wiley & Sons, New York.

- Cohen, Lisabeth A.
1986 Embellishing a Life of Labor: An Interpretation of the Material Culture of American Working Class Homes. In *Common Places*, edited by Dell Upton and John Michael Vlach, pp. 261-280. University of Georgia Press, Athens, Georgia.
- Cook, Sherburne F.
1943 *The Conflict Between the California Indian and White Civilization*. University of California Press, Berkeley.
- Costello, Julia G., and Mary L. Maniery
1988 *Rice Bowls in the Delta: Artifacts Recovered from the 1915 Asian Community of Walnut Grove, California*. Occasional Paper 16, Institute of Archaeology, University of California, Los Angeles.
- Coughlin, Richard J.
1960 *Double Identity: The Chinese in Modern Thailand*. Oxford University Press, London.
- Crocker, H.S. & Co.
1880 *The Sacramento Directory, for the Year 1880*. H.S. Crocker & Co., Sacramento.
- Culver, J. Horace
1851 *The Sacramento City Directory*. Transcript Press, Sacramento.
- Cushion, John P.
1976 *Pocket Book of British Ceramic Marks*. Faber & Faber, London.
- Davidson, Gladys R.
1952 *Corinth: Volume 12, The Minor Objects*. American School of Classical Studies at Athens, Princeton, New Jersey.
- Davis, Winfield J.
1890 *An Illustrated History of Sacramento County, California* Lewis Publishing Company, Chicago.
- Deetz, James
1977 *In Small Things Forgotten*. Doubleday, New York.
- DeVore, Steven Leroy
1992 Beads of the Bison Robe Trade: The Fort Union Trading Post Collection. *Fort Union Monograph Series, Publication 1*. Friends of Fort Union Trading Post, Williston, North Dakota.

- Dietz, Stephen Alan (ed.)
 1983 Final Report of Archaeological Investigations at Mission San Jose (CA-Ala-1). Unpublished manuscript, Archaeological Consulting and Research Services, Santa Cruz, California.
- Eastlake, Charles L.
 1878 *Hints on Household Taste*. Longmans, Green and Company, London. Reprint. Dover, New York, 1970.
- Etter, Patricia A.
 1980 The West Coast Chinese and Opium Smoking. In *Archaeological Perspectives on Ethnicity in America: Afro-American and Asian American Culture History*, edited by Robert L. Schuyler, pp. 97-101. Baywood Publishing Company, Inc., Farmingdale, New York.
- Evans, William S., Jr.
 1980 Food and Fantasy: Material Culture of the Chinese in California and the West, Circa 1850-1900. In *Archaeological Perspectives on Ethnicity in America: Afro-American and Asian American Culture History*, edited by Robert L. Schuyler, pp. 89-96. Baywood Publishing Company, Inc., Farmingdale, New York.
- Farris, Glenn J.
 1984 Chinese and Annamese Coins Found at the Woodland Opera House Site. In *The Chinese Laundry on Second Street: Papers on Archeology at the Woodland Opera House Site*, pp. 147-150. California Archeological Reports No. 24. California DPR, Sacramento.
- Felton, David L., Frank Lortie, and Peter D. Schulz
 1984 The Chinese Laundry on Second Street: Archeological Investigations at the Woodland Opera House Site. In *The Chinese Laundry on Second Street: Papers on Archeology at the Woodland Opera House Site*, pp. 1-108. California Archeological Reports No. 24. California DPR, Sacramento.
- Ferral, Walter B.
 1885 *Annual Report of Walter B. Ferral, Health Officer of the City of Sacramento*. H.S. Crocker, Sacramento.
- Fike, Richard E.
 1987 *The Bottle Book*. Gibbs M. Smith, Salt Lake City.
- Fischer, W., and P.J.P. Whitehead
 1974 *FAO Species Identification Sheets for Fishery Purposes: Indian Ocean (Fishing Area 57) and Western Central Pacific (Fishing Area 71)*. Volume 4. Food and Agriculture Organization of the United Nations, Rome.

Gallup, John D.
1896 *Genealogical History of the Gallup Family in the United States*. Hartford Printing.

Gallup, Josiah
1853/4 "Bio Info File." A collection of 50 letters, most dating to 1853-1854. Box 202, California Room, State Library, Sacramento.

n.d. Pioneer File. Contributions by Ellen Gallup Bristol and Ardell Folger Armstrong.

1862 Probate. Superior Court Case #475. On file, History and Science Division, Sacramento Archives and Museum Collection Center.

Gallup, Josiah vs. The Young Wo Company
1856 Lawsuit in District Court, 6th Judicial District. Case #4747. On file, History and Science Division, Sacramento Archives and Museum Collection Center.

Gallup, Julia vs. Ong King.
1860 Lawsuit in District Court, 6th Judicial District. Case #7754. On file, History and Science Division, Sacramento Archives and Museum Collection Center.

Gasparetto, Astone
1958 *Il vetro di Muano: dalle origini ad oggi*. Neri Pozza, Venice.

Geismer, Joan H.
1987 *Landfill and Health: A Municipal Concern or Telling It Like It Was*. *Northeast Historical Archaeology* 16:49-57.

Gibson, R.O.
1975 A Preliminary Analysis of Beads from San Buenaventura Mission (VEN-87). Chapter in *3500 Years on One City Block*, edited by Roberta S. Greenwood, pp. 43-81. Greenwood and Associates, Pacific Palisades, California.

Girard, Charles
1857 Report upon Fishes Collected on the Survey. *Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean* 6(Part 4, No. 1):9-34. Beverley Tucker, Washington.

Glazer, Nathan, and Daniel P. Moynihan
1963 *Beyond the Melting Pot*. The M.I.T. Press and Harvard University Press, Cambridge, Massachusetts.

Glick, Clarence
1938 Transition from Familism to Nationalism Among Chinese in Hawaii. *American Journal of Sociology* 38(5):734-743.

- 1942 The Relation Between Position and Status in the Assimilation of Chinese in Hawaii. *American Journal of Sociology* 42(5):667-679.
- Godden, Geoffrey A.
 1980 *An Illustrated Encyclopedia of British Pottery and Porcelain*. Barrie & Jenkins, London.
- 1991 *Encyclopedia of British Pottery and Porcelain Marks*. Barrie & Jenkins, London.
- Grier, Katherine C.
 1988 *Culture and Comfort*. University of Massachusetts Press and the Strong Museum, Rochester, New York.
- Groth, Paul
 1990 Lot, Yard, and Garden, American Distinctions. *Landscape* 30(3):29-35.
- Gust, Sherri M.
 1982 Mammalian Remains. In *Archaeological and Historical Studies of the IJ56 Block, Sacramento, California: An Early Chinese Community*, edited by Mary Praetzellis and Adrian Praetzellis, pp. 87-112. Anthropological Studies Center [ASC], Sonoma State University [SSU], Rohnert Park.
- 1983 Problems and Prospects in 19th Century Zooarchaeology. In *Forgotten Places and Things*, edited by Albert Ward, pp. 341-348. Center for Anthropological Studies, Albuquerque, New Mexico.
- 1990a Mammalian Fauna. In *Junk!: Archaeology of the Pioneer Junk Store*, edited by Mary Praetzellis and Adrian Praetzellis. Papers in Northern California Archaeology 4.
- 1990b Mammalian Fauna. In *Archaeological and Historical Studies at San Fong Chang Laundry, 814 I Street, Sacramento, California*, edited by Mary Praetzellis and Adrian Praetzellis. ASC, SSU, Rohnert Park.
- 1990c Mammalian Fauna. In *The Mary Collins Assemblage: Mass Marketing and the Archaeology of a Sacramento Family*, edited by Mary Praetzellis and Adrian Praetzellis. ASC, SSU, Rohnert Park.
- 1990d Mammalian Fauna. In *For a Good Boy: Victorians on J Street*, edited by Mary Praetzellis and Adrian Praetzellis. ASC, SSU, Rohnert Park.
- 1993 Animal Bones from Historic Urban Chinese Sites: A Comparison of Sacramento, Woodland, Tucson, Ventura and Lovelock. In *Hidden Heritage: Historical Archaeology of the Overseas Chinese*, edited by Priscilla Wegars, pp. 177-212. Baywood Press, Amityville, New York.

1995 Guide to BABAS: Bone Analysis and Butchering System (version 1). In *Cypress Replacement Project How-to Manual*, pp. BABAS 1-11. ASC, SSU, Rohnert Park.

1996 Cypress Project Methodology and Analysis of Animal Bones. Draft. Manuscript on file, ASC, SSU, Rohnert Park. Prepared for California Department of Transportation, Sacramento, California.

Gutman, Herbert

1977 *Work, Culture, and Society in Industrializing America*. Vintage Books, New York.

Haraven, Tamara

1978 Family Time and Historical Time. In *The Family*, edited by Rossi, J. Kagan, and T. Haraven, pp. 56-61. W.W. Norton, New York.

Hardesty, Donald L.

1980 Historic Sites Archaeology on the Western American Frontier: Theoretical Perspectives and Research Problems. *North American Archaeologist* 2(1):67-81.

Harris, Edward C.

1974 The Stratigraphic Sequence. *World Archaeology* 7(1): 109-121.

1977 Units of Archaeological Stratification. *Norwegian Archaeological Review* 10(1-2):84-94.

1979 *Principles of Archaeological Stratigraphy*. Academic Press, London and San Diego.

1988 The Analysis of Multilinear Stratigraphic Sequences. Paper presented at the Annual Meeting of the Society for Historical Archaeology, Reno.

1989 *Principles of Archaeological Stratigraphy*. 2nd Revised Edition. Academic Press, London and San Diego.

Hastings, Richard B.

1968 The Architecture of the Old Sacramento Project. Master's thesis, University of California, Davis.

Heiser, Charles B.

1979 *The Gourd Book*. University of Oklahoma Press.

Heizer, Robert F., and Alan J. Almquist

1971 *The Other Californians*. University of California Press, Berkeley.

- Herklots, G.A.C., and S.Y. Lin
n.d. *Common Marine Food-Fishes of Hong Kong*. North China Morning Post, Hong Kong.
- Hirsch, Susan E.
1978 *Roots of the American Working Class*. University of Pennsylvania Press, Philadelphia.
- Hodder, Ian
1979 Economic and Social Stress and Material Culture Patterning. *American Antiquity* 44(3):446-454.

1982 *Symbols in Action*. Cambridge University Press, Cambridge.
- Honeysett, Elizabeth, and Peter D. Schulz
1984 Nineteenth Century Seeds from Woodland, California. In *Chinese Laundry on Second Street: Papers on Archaeology at the Woodland Opera House Site*. California Archeological Reports No. 24. California DPR.
- Hoppe, David H., and Friedrich Hornschuch
1818 *Tagebuch einer Reise nach den Küsten des adriatischen Meers*. Johan Baptist Rotermundt, Regensburg. English translation by Karlis Karklins and Derek Jordan in *The Bead Forum* 17:5-8. Los Angeles.
- Howe, Daniel W.
1976 *Victorian America*. University of Pennsylvania Press, Philadelphia.
- Hsu, Vera Y.N., and Francis L.K. Hsu
1977 Modern China: North. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 295-317. Yale University Press, New Haven and London.
- Jackson, John Brinckerhoff
1972 *American Space: The Centennial Years, 1865-1876*. W.W. Norton, New York.
- Jenkins, John C.
1966 Sutter Lake or China Slough. *Golden Notes* 13(1).
- Jenkins, Michael
1975 Glass Trade Beads in Alaska. *The Bead Journal* 2(1):23-26. Los Angeles.
- Jepson, Willis L.
1893 The Riparian Botany of the Lower Sacramento. *Erythea* 1:238-246
- Johnson, Stephen C.
1975 Living Beads in Guatemala. *The Bead Journal* 2(1):18-22. Los Angeles.

Jones, Olive, and Catherine Sullivan, with George L. Miller, E. Ann Smith, Jane E. Harris, Kevin Lunn
1985 *The Parks Canada Glass Glossary*. National Historic Parks and Sites Branch, Parks, Canada.

Jordan, David Starr
1884 *The Sun-Fishes and Their Allies. Fishes and Fishery Industries of the United States*, Sect. 2, Pt. 6:404-407, edited by G. B. Goode. U.S. Government Printing Office, Washington.

Jordan, R. Furneaux
1966 *Victorian Architecture*. Pelican Books, Harmondsworth, England.

Kang-Ying, Wong, and Martha Dahlen
1994 *Chinese Herbal Medicine*. Workman Press, Hong Kong.

Karklins, Karlis
1982 *Guide to the Description and Classification of Glass Beads. Parks Canada, History and Archaeology* 59:83-117. Ottawa.

1985 *Guide to the Description and Classification of Glass Beads*. In "Glass Beads," 2nd edition, pp. 85-118. *Parks Canada, Studies in Archaeology, Architecture and History*. Ottawa.

1993 *The a speo Method of Heat Rounding Drawn Glass Beads and Its Archaeological Manifestations. Beads* 5:27-36. Society of Bead Researchers.

1994 *A Classification System for Drawn Glass Beads*. Paper presented at the Society for Historical Archaeology Conference on Historical and Underwater Archaeology, Vancouver, British Columbia.

Karklins, Karlis, with Carol F. Adams
1990 *Dominique Bussolin on the Glass-Bead Industry of Murano and Venice (1847). Beads* 2:69-84. Society of Bead Researchers.

Karklins, Karlis, and Roderick Sprague
1980 *A Bibliography of Glass Trade Beads in North America*. South Fork Press, Moscow, Idaho.

1987 *A Bibliography of Glass Trade Beads in North America: First Supplement*. Promontory Press, Ottawa.

- Kelly, Marsha C.S., and Roger E. Kelly
 1980 Approaches to Ethnic Identification in Historical Archaeology. In *Archaeological Perspectives on Ethnicity in America: Afro-American and Asian American Culture History*, edited by R.L. Schuyler, pp. 133-145. Baywood Publishing, Farmingdale, New York.
- Kelso, Gerald, and Mary C. Beaudry
 1990 Pollen Analysis and Urban Land Use: The Environs of Scottow's Dock in 17th, 18th, and Early 19th Century Boston. *Historical Archaeology* 24(1):61-81.
- Kent, Jonathan D., John Dendy, and Kathleen Whalen
 1987 Botanical Remains from Riverside Chinatown. In *Wong Ho Leun: An American Chinatown*. Great Basin Foundation, San Diego, California.
- Kidd, Kenneth E., and Martha A. Kidd
 1970 A Classification System for Glass Beads for the Use of Field Archaeologists. *Canadian Historic Sites, Occasional Papers in Archaeology and History* 1:45-89. Ottawa. Reprinted in 1983 in *Rochester Museum and Science Center Research Records* 16:219-257. Rochester, New York.
- Kirkpatrick, C.A.
 1860 Salmon Fishery on the Sacramento. *Hutchings' California Magazine* 4(12):529-534.
- Klindt-Jensen, Ole
 1970 *The World of the Vikings*. Allen and Unwin, London.
- Koch, Augustus
 1870 Bird's-Eye View of the City of Sacramento, State of California. Britton & Rey, San Francisco.
- Lagomarsino, Barbara
 1969 Early Attempts to Save the Site of Sacramento by Raising its Business District. Master's thesis, California State University, Sacramento.
- Lai, David
 1988 *Chinatowns: Towns within Cities in Canada*. University of British Columbia Press, Vancouver.
- Laird, Clinton N.
 1918 The Potteries at Shek Waan, Near Canton, China. *Journal of Industrial and Engineering Chemistry* 10(7):568-571.

LaLande, Jeffery M.

1981 Sojourners in the Oregon Siskiyou: Adaptation and Acculturation of the Chinese Miners in the Applegate Valley, CA. 1855-1900. Master's thesis, Oregon State University, Corvallis.

Lee, Beverly

1963 *The Easy Way to Chinese Cooking*. Doubleday, New York.

Lemire, Beverly

1988 Consumerism in Preindustrial and Early Industrial England: The Trade in Secondhand Clothes. *Journal of British Studies* 17:1-24.

Li, K.-M.

1954 An Account of the Golden Thread Group Fishery in Hong Kong, and a Preliminary Note on the Biology of *Nemipterus virgatus* (Houttun). *Hong Kong University Fisheries Journal* 1:1-18.

Lockington, W.S.

1879 Report upon the Food Fishes of San Francisco. *California Commissioners of Fisheries, Report 1878-1879*:17-58.

Lunn, Kevin

1981 Identification and Dating of Lea and Perrins' Worcestershire Sauce Bottles on North American Historic Sites. Paper presented at the 11th Annual Meeting of the Conference on Historic Sites Archaeology, Columbia, South Carolina.

Lydon, Jane

1996 "Many Inventions:" *Historical Archaeology and the Chinese on the Rocks, Sydney, 1890-1930*. Master's thesis, Department of History, Australian National University, Canberra, Australia.

Lyman, Stanford

1970 *The Asian in the West*. Desert Research Institute, Social Science and Humanities Publication 4:1-168.

Lynes, Russell

1963 *The Domesticated Americans*. Harper and Row, New York.

Mann, Ralph

1982 *After the Gold Rush: Society in Grass Valley and Nevada City, California, 1849-1870*. Stanford University Press, Stanford, California.

Markota, Peck, and Audie Markota

1994 *Western Blob Top Soda and Mineral Water Bottles*. Privately printed.

- Mason, Herbert L.
1969 *A Flora of the Marshes of California*. University of California Press, Berkeley.
- McClain, Charles
1994 *In Search of Equity*. University of California Press, Berkeley.
- McGowen, Joseph A.
1961 *History of the Sacramento Valley*. Lewis Historic Publishing Co., New York.
- McGowan, Joseph A., Julie Dominguez, Edith Pitti, Susan Searcy, and Cynthia St. Louis
1979 Report on the Historical Development of Sacramento City Blocks bounded by H and I, 5th and 6th. Ms. on file, Sacramento Museum and History Department, Sacramento.
- McGuire, Randall H.
1982 The Study of Ethnicity in Historical Archaeology. *Journal of Anthropological Archaeology* 1:159-178.
- McIlroy, Jack, Erica S. Gibson, Sherri Gust, Elaine-Maryse Solari, Karana Hattersley-Drayton
1995 *Cypress Replacement Project How-To Manual*. ASC, SSU, Rohnert Park, California.
- McLoughlin, William G.
1970 *The Meaning of Henry Ward Beecher*. Alfred A. Knopf, New York.
- Mehringer, Peter J., Jr.
1967 Pollen Analysis of the Tule Springs Area, Nevada. In *Wormington*, edited by H.M. and Ellis, D. Pleistocene Studies in Southern Nevada. Nevada State Museum Anthropological Papers 13, 129-200.
- Meighan, Clement W.
1985 Trade Beads. In *Excavations at Mission San Antonio, 1976-1978*, edited by Robert L. Hoover and Julia G. Costello. *University of California, Los Angeles, Institute of Archaeology, Monograph* 26:56-63.
- Melandy, H. Brett, and Benjamin F. Gilbert
1965 *The Governors of California*. Talisman Press, Georgetown, California.
- Mille, Polly
1975 An Historical Explanation of Alaskan Trade Beads. *The Bead Journal* 2(2):20-24. Los Angeles.

- Miller, Michael B.
1981 *The Bon Marche': Bourgeois Culture and the Department Store, 1869-1920*. Princeton University Press, Princeton, New Jersey.
- Miller, Stuart C.
1969 *The Unwelcome Immigrant: The American Image of the Chinese 1785-1882*. University of California Press, Berkeley.
- Minnick, Sylvia Sun
1981 Chinese Funeral Customs. *Golden Notes* 27(3). Sacramento Historical Society.
- Moore, S., and B.G. Myerhoff (eds.)
1977 *Secular Rituals*. Van Gorcum, Amersterdam.
- Morrow, Trelle A.
1995 Resident of Prince George, British Columbia, Canada. Letter to Jeannie Yang, 30 October 1995.
- Motz, Lee, and Peter D. Schulz
1980 European "Trade" Beads from Old Sacramento. In "Papers on Old Sacramento Archeology," edited by Peter D. Schulz and Betty J. Rivers. *California Archeological Reports* 19:49-68. California DPR, Sacramento.
- Mrozowski, Steven
1987 Exploring New England's Evolving Urban Landscape. In *Living in Cities: Current Research in Urban Archaeology*, edited by Edward Staski, pp. 1-10. Society for Historical Archaeology Special Publication 5.
- Mueller, Fred W., Jr.
1986 Feng-Shui: Methods in the Development of California Chinatowns. Paper presented at the 19th Annual Meeting of the Society for Historical Archaeology, Sacramento.

1987 Gaming and Gaming Pieces. In *Wong Ho Leun: An American Chinatown*, pp. 233-249. Great Basin Foundation, San Diego, California.
- Munsell Color
1994 *The Munsell Book of Color*. Macbeth Division of Kollmorgen Instruments Corporation, New Windsor, New York.
- Nagel, Charles E.
1965 The Fight for Survival: Floods, Riots, and Disease in Sacramento. Master's thesis, Sacramento State College, Sacramento.

- Nee, Victor G., and Brett de Bary Nee
 1972 *Longtime Californ': A Documentary Study of an American Chinatown*. Pantheon Books, New York.
- Neuwirth, Waltraud
 1994 *Beads from Gablonz*. Privately published, Vienna, Austria.
- Ng, Franklin
 1987 The Sojourner, Return Migration, and Immigration History. In *Chinese America; History and Perspectives, 1987*, pp. 73-86. Edited and published by the Chinese Historical Society of America, San Francisco.
- Ng, Franklin (ed.)
 1995 *Asian American Encyclopedia*. Marshall Cavendish, North Bellmore, New York.
- Noah, Anna C.
 1987 Brass, Glass, Stone and Bone. In *Wong Ho Leun: An American Chinatown*, pp. 402-413. Great Basin Foundation, San Diego, California.
- Nordhoff, Charles
 1874 *California for Travelers and Settlers*. Reprint. Ten Speed Press, San Francisco, 1973.
- Olsen, John W.
 1978 A Study of Chinese Ceramics Excavated in Tucson. *Kiva* 44(1):1-50.
- Olsen, Stanley J.
 1963 Dating Early Plain Buttons by their Form. *American Antiquity* 28(4):551-554.
- Omohundru, J.T.
 1978 Trading Patterns of Philippine Chinese: Strategies of Sojourning Middlemen. In *Economic Exchange and Social Interaction in Southeast Asia: Perspectives from Prehistory, History, and Ethnography*, edited by K. Hunter, pp. 113-136. Michigan Papers on South and Southeast Asia No. 13, Ann Arbor.
- 1981 *Chinese Merchant Families in Iloilo*. Ohio University Press, Athens.
- Oriental, The
 1855 *The Oriental or Tung-Ngai San Luk*, edited by William Speer. Published weekly in English and Chinese. Whitton, Towne & Co., San Francisco. Microfilm on file, Bancroft Library, University of California, Berkeley.
- Paynter, Robert, and Randall H. McGuire
 1991 The Archaeology of Inequality: Material Culture, Domination, and Resistance. In *The Archaeology of Inequality*, edited by Randall H. McGuire and Robert Paynter, pp. 1-28. Blackwell, Oxford.

Pfeiffer, Rozanna M.

1983 Glass Trade Beads from Caesarea Maritima, Israel. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III, *Rochester Museum and Science Center, Research Records* 16:1:205-212. Rochester, New York.

Pitti, Edith

n.d. Addresses in The Central City. Ms on file, History and Science Division, Sacramento Archives and Museum Collection Center.

Porterfield, W.M., Jr.

1951 The Principal Chinese Vegetable Foods and Food Plants of Chinatown Markets. *Economic Botany* 5(1):3-37.

Praetzellis, Adrian

1991 *The Archaeology of a Victorian City*. Ph.D. Dissertation, University of California, Berkeley. University Microfilms International, Ann Arbor, Michigan.

1994 Interim Report on Archaeological Test Investigations: Proposed Federal Building/ Courthouse, Block H-I-5-6, Sacramento, California. ASC, SSU, Rohnert Park, California.

Praetzellis, Adrian, Mary Praetzellis, and Marley R. Brown III

1987 Artifacts as Symbols of Identity: An Example from Sacramento's Gold Rush Era Early Chinese Community. In *Living in Cities: Current Research in Urban Archaeology*, edited by Edward Statski, pp. 38-48. Society for Historical Archaeology Special Publication No. 5.

Praetzellis, Adrian, and Mary Praetzellis

1979a Ceramics from Old Sacramento. Ms. on file, California DPR, Cultural Resources Management Unit, Sacramento.

1979b The Lovelock Ceramics. In *Archaeological and Historical Studies at Ninth and Amherst, Lovelock, Nevada*, edited by Eugene M. Hattori, Mary K. Rusco, and Donald R. Tuohy, Volume 1, pp. 140-199. Nevada State Museum Archaeological Services, Carson City, Nevada.

1992 Faces and Facades: Victorian Ideology in Early Sacramento. In *The Art and Mystery of Historical Archaeology: Essays in Honor of James Deetz*, edited by Anne E. Yentsch and Mary C. Beaudry, pp.75-101. CRC Press, Boca Raton, Florida.

Praetzellis, Mary (ed.)

1993 *Research Design and Treatment Plan for the Cypress Freeway Replacement Project, Oakland, California*. Report prepared for the California Department of Transportation, District 4, Oakland.

Praetzellis, Mary

1995 Correspondence to Lester Ross, dated 25 July 1995.

Praetzellis, Mary, and Adrian Praetzellis (eds.)

1992 *Tar Flat, Rincon Hill and the Shore of Mission Bay: Archaeological Research Design and Treatment Plan for SF-480 Termination Separation Rebuild*. Report prepared for the California Department of Transportation, District 4, Oakland.

Praetzellis, Mary, and Adrian Praetzellis

1982 *Archaeological and Historical Studies of the IJ56 Block, Sacramento California: An Early Chinese Community*. ASC, SSU, Rohnert Park.

1988 *Archaeological Research Design and Testing Strategy for the I/J/8/9 Block*. Ms. on file, ASC, SSU, Rohnert Park.

1989 *Carriage Maker to Undertaker or the Redmond's Clean House: Archaeology of an 1870s Family*. Report prepared for Days Inn, Inc.

1990a *Junk! Archaeology of the Pioneer Junk Store, 1877-1908*. ASC, SSU, Rohnert Park.

1990b *"For a Good Boy": Victorians on Sacramento's J Street*. ASC, SSU, Rohnert Park.

1990c *Archaeology of the San Fong Chong Laundry, 814 I Street*. ASC, SSU, Rohnert Park.

1990d *The Mary Collins Assemblage: Mass Marketing and the Archaeology of a Sacramento Family*. ASC, SSU, Rohnert Park.

1991 *Archaeological Research Design and Identification and Testing Strategies for the John M. Moss Building - U.S. Courthouse Annex, Sacramento, California*. ASC, SSU, Rohnert Park.

1992a *Archaeological Studies of the Newman Hen House, 1423 K Street, Sacramento*. ASC, SSU, Rohnert Park.

1992b *Beneath Mrs. Hudson's House: Archaeological and Historical Studies of 1408 J Street, Sacramento, California*. ASC, SSU, Rohnert Park.

- 1992c *"We Were There, Too": Archaeology of an African-American Family in Sacramento, California*. ASC, SSU, Rohnert Park.
- 1993a Archaeological Research Design and Identification and Testing Strategies for Proposed Federal Courthouse Site, HI56 Block, Sacramento, California. Manuscript prepared by the ASC, SSU, Rohnert Park.
- 1993b Historical Archaeology in Context: Evaluating Urban Historic Properties Under Legal Guidelines. In *There Grows a Green Tree: Papers in Honor of David A. Fredrickson*. Center for Archaeological Research at Davis 11:71-87.
- 1994 Data Recovery Plan for the Proposed Federal Building/Courthouse Site, HI56 Block, Sacramento, California. Prepared by the ASC, SSU, Rohnert Park.
- Praetzellis, Mary, Adrian Praetzellis, and Marley R. Brown III
1980 *Historical Archaeology at the Golden Eagle Site*. ASC, SSU, Rohnert Park.
- Praetzellis, Mary, Betty Rivers, and Jeanette Schulz
1983 *Ceramic Marks from Old Sacramento*. California Archeological Reports No. 22. California DPR, Sacramento.
- Pritchard, William E.
1972 An Archaeological Investigation of the Eagle Theater in Old Sacramento, California. Ms. on file, California DPR, Cultural Resources Management Unit, Sacramento.
- Redfield, Robert
1955 *The Little Community*. University of Chicago Press, Chicago.
- Reeves, J.E.
1964 Age and Growth of the Hardhead Minnow, *Mylopharodon conocephalus* (Baird and Girard), in the American River Basin of California, with Notes on Its Ecology. Master's thesis, University of California, Berkeley.
- Robbins, Roland, and Evan Jones
1959 *Hidden America*. Knopf, New York.
- Rodgers, Daniel P.
1978 *The Work Ethic in Industrial America, 1850-1920*. University of Chicago Press, Chicago.
- Ross, Lester A.
1974 Hudson's Bay Company Glass Trade Beads: Manufacturing Types Imported to Fort Vancouver (1829-1860). *The Bead Journal* 1(2):15-22. Society of Beads Researchers.

- 1976 Fort Vancouver, 1829-1860: A Historical Archeological Investigation of the Goods Imported and Manufactured by the Hudson's Bay Company. Unpublished manuscript, National Park Service, Fort Vancouver National Historic Site, Vancouver, Washington.
- 1990 Trade Beads from Hudson's Bay Company Fort Vancouver (1829-1860), Vancouver, Washington. *Beads* 2:29-67. Society of Bead Researchers.
- 1993 Glass and Ceramic Beads from the 1846-1847 Murphy Cabin Site, California. Unpublished manuscript.
- 1994 A Proposed Classification System for Mold-Pressed Beads. Paper presented at the Society for Historical Archaeology Conference on Historical and Underwater Archaeology, Vancouver, British Columbia.
- 1995 Glass and Ceramic Trade Beads from the 1989, 1991 and 1992 Excavations of the Native Alaskan Village Site (CA-SON-1897/H) and the 1988 and 1989 Excavations of the Fort Ross Beach Site (CA-SON-1898/H), Fort Ross, Sonoma County, California. Unpublished manuscript.
- Ross, Lester A. with Barbara Pflanz
 1989 Bohemian Glass Beadmaking: Translation and Discussion of a 1913 German Technical Article. *Beads* 1:81-94. Society of Bead Researchers.
- Ruskin, John
 1959 *The Lamp of Beauty; Writings on Art by John Ruskin*. Edited by Joan Evans. Phaidon Publishers, New York.
- Russell, Barry C.
 1990 FAO Species Catalogue: Nemipterid Fishes of the World. *FAO Fisheries Synopsis* No. 125, Vol. 12: 1-149.
- Sacramento Bee
 1859 Salmon Fisheries. *Sacramento Bee* 1 January 1859:4
 v.d. Microfilm. California History Room, State Library, Sacramento.
- Sacramento City and County
 v.d. Assessment Rolls and Maps. On file, History and Science Division, Sacramento Archives and Museum and Collection Center.
- Sacramento City Directory [SCD]
 v.d. *Sacramento City Directories*. [Titles and publishers vary with different years]. On file, California History Room, State Library, Sacramento.

Sacramento City Tax Collector's Business License Day Book
1863-1877 Register. On file, History and Science Division, Sacramento Archives and
Museum Collection Center.

Sacramento Daily Democratic State Journal
v.d. Microfilm. California History Room, State Library, Sacramento.

Sacramento Recorder's Office
v.d. Deeds.

v.d. Leases.

Sacramento City Secretary of Common Council's Quarterly License
1854-1858 Register. On file, History and Science Division, Sacramento Archives and
Museum Collection Center.

Sacramento City Tapper's Book
1854-1857. Ledger. On file, History and Science Division, Sacramento Archives and
Museum Collection Center.

Sacramento Union
v.d. Microfilm. California History Room, State Library, Sacramento.

Sanborn Map Company
1895 Sacramento, California. Microfilm. Map Library, UC Berkeley.

1915 Sacramento, California. Microfilm. Map Library, UC Berkeley.

1950 Sacramento, California. Microfilm. Map Library, UC Berkeley.

1952 Sacramento, California. Microfilm. Map Library, UC Berkeley.

San Jose Pioneer
1900 T.A. Gallup. *San Jose Pioneer* 15 April 1900, p. 63, col, 2.

1900 Rossiter Preston Johnson. *San Jose Pioneer* 15 November 1900, pp. 167-168.

Sawyer, Otis (Chairman)
1886 Memorial for Rossiter Preston Johnson. Society of California Pioneers, San
Francisco. Manuscript #714. California Room, State Library, Sacramento.

Schafer, Edward H.
1977 T'ang. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 85-141. Yale
University Press, New Haven and London.

Schulz, Peter D.

- 1977 Historical Archeology on K Street Old Sacramento. Ms. on file, California DPR, Cultural Resources Management Unit, Sacramento.
- 1979 Research Design for Historical Archeology on the J/K/6/7 Block, Sacramento. Ms. on file, Sacramento Museum and History Department.
- 1980 Fish Remains. In *Historical Archaeology at the Golden Eagle Site*, edited by M. Praetzellis et al., pp. 2-1 to 2-18. ASC, SSU, Rohnert Park.
- 1982 Fish, Reptile and Cephalopod Remains. In *Archaeological and Historical Studies of the IJ56 Block, Sacramento, California: An Early Chinese Community*, edited by M. Praetzellis and A. Praetzellis, pp. 74-86. ASC, SSU, Rohnert Park.
- 1995 Fish Remains. In Final Report on the Archaeological Analysis of CA-SAC-43, Cultural Resources Mitigation for the Sacramento Urban Area Levee Reconstruction Project, Sacramento County, California, edited by P. D. Bouey, pp. 269-277. Far Western Anthropological Research Group, Davis.
- n.d. Nineteenth Century Fish Remains from Old Sacramento. Ms. on file, Cultural Resource Management Section, California DPR, Sacramento.

Schulz, Peter D., and Sherri M. Gust

- 1983 Faunal Remains and Social Status in 19th Century Sacramento. *Historical Archaeology* 17(1):44-54.

Schulz, Peter D., Betty J. Rivers, Mark M. Hales, Charles A. Litzinger, Elizabeth McKee

- 1980 *The Bottles of Old Sacramento: A Study of Nineteenth-Century Glass and Ceramic Retail Containers*. California Archeological Reports No. 20. California DPR, Sacramento.

Seale, William

- 1981 *The Tasteful Interior*. American Association for State and Local History, Nashville.

Severson, Thor

- 1973 *Sacramento: An Illustrated History, 1839-1874*. California Historical Society, San Francisco.

Shiba, Y.

- 1970 *Commerce and Society in Sung China*. Translated by Mark Elvin. Center for Chinese Studies, Ann Arbor.

- Shlemon, Roy, J., and Eugene Begg
 1972 *A Holocene Soil Landscape Chronology, Southwestern Sacramento Valley, California*. Proceedings of International Geographic Congress, Montreal.
- Silver, Ian A.
 1969 The Aging of Domestic Animals. In *Science in Archaeology*, edited by D. Brothwell and E.S. Higgs, pp. 283-302. Thames and Hudson, London.
- Skinner, John E.
 1962 An Historical Review of the Fish and Wildlife Resources of the San Francisco Bay Area. *California Department of Fish and Game, Water Projects Branch Report 1:1-226*.
- Smith, Janice Christina
 1974 Pomo and *Promyshlenniki*: Time and Trade Goods at Fort Ross. Master's thesis in Archaeology, University of California, Los Angeles.
- South, Stanley
 1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.
- Spear, Nathan
 1835 Invoices of Nathan Spear, 1835-36. [Invoice of the Brig *Clementine*, June 4, 1835.] Bancroft Library, University of California, Berkeley.
- Speer, William
 1856 *An Humble Plea Addressed to the Legislature of California in Behalf of the Immigrants from the Empire of China*. Oriental, San Francisco.
- Spence, Jonathan
 1977 Ch'ing. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 259-295. Yale University Press, New Haven and London.
- Sprague, Roderick
 1983 Tile Bead Manufacturing. In *Proceedings of the 1982 Glass Trade Bead Conference*, edited by Charles F. Hayes III, pp. 167-172. Rochester Museum and Science Center Research Records 16. Rochester, New York.
- 1985 Glass Trade Beads: A Progress Report. *Historical Archaeology* 19(2):87-105.
- 1987 Insert to the Asian Comparative Collection *Newsletter* 4(2).
- 1994 Prosser Molded Bead Classification. Paper presented at the Society for Historical Archaeology Conference on Historical and Underwater Archaeology, Vancouver, British Columbia.

Staski, Edward

1985 *Beneath the Border City, Vol. 2: The Overseas Chinese in El Paso*. University Museum Occasional Papers 13. New Mexico State University, Las Cruces.

1993 The Overseas Chinese in El Paso: Changing Goals, Changing Realities. In *Hidden Heritage*, edited by Priscilla Wegers, pp. 125-150. Baywood, New York.

Stebbins, G. Gaylord, and Dean Taylor

1973 *A Survey of the Natural History of the South Pacific Border Region, California*. Institute of Ecology Publication: 4. University of California, Davis.

Stedman Jones, Gareth

1974 Working-Class Culture and Working-Class Politics in London, 1870-1930: Notes on the Remaking of a Working Class. *Journal of Social History* 7(4):460-509.

Stockmarr, Jens

1971 Tablets with Spores used in Absolute Pollen Analysis. *Pollen et Spores* Vol. XIII, No. 4:615-621.

Stone, Livingston

1874 On the Salmon Fisheries of the Sacramento River. *United States Commission of Fish and Fisheries, Report for 1872-73*: 374-379.

Storer, T.

1965 Fish and Wildlife of the Sacramento Valley - Past and Present. *Outdoor California* 26(8):15-16.

Takaki, Ronald

1990 *Strangers from a Different Shore*. Penguin Books, New York.

Thompson, E.P.

1963 *The Making of the English Working Class*. Random House, New York.

Thompson, Kenneth

1961 Riparian Forests of the Sacramento Valley, California. *Association of American Geographers Annals* 51(3):294-315.

Thompson, Thomas H., and Albert A. West

1880 *History of Sacramento County*. Thompson and West, Oakland.

Thorn, C. Jordan

1947 *Handbook of Old Pottery and Porcelain Marks*. Tudor, New York.

Tomiyama, Itiro

1934 Notes on the Frontal Bones of Sparoid Fishes of Japan. *Imperial University of Tokyo, Faculty of Science Journal* 3(3):309-318.

- Trauner, Joan B.
1978 The Chinese as Medical Scapegoats in San Francisco, 1870-1905. *California History* 57(1):70-87.
- Tryon, A.G. vs. Sing Lee
1860 Case #9206 in Sacramento District Court. On file, History and Science Division, Sacramento Archives and Museum Collection Center.
- Ulhorn, John (comp.)
1873 *Sacramento City Directory*. H.S. Crocker & Co., Sacramento.
- Unglik, Henry
1990 *Cast Irons from Les Forges du Saint-Maurice, Quebec, A Metallurgical Study*. Parks Canada, Ottawa, Canada.
- United States Census Bureau
1850 Sacramento. Manuscript Population Census, Sheet 181.
1860 Sacramento. Manuscript Population Census. Microfilm.
1870 Sacramento. Manuscript Population Census. Microfilm.
1880 Sacramento. Manuscript Population Census. Microfilm.
1900 Sacramento. Manuscript Population Census. Microfilm.
1910 Sacramento. Manuscript Population Census. Microfilm.
- Upton, Dell
1996 Ethnicity, Authenticity, and Invented Tradition. *Historical Archaeology* 30(2):1-7.
- Van Bueren, Thad M.
1983 Archaeological Perspectives on Central Sierra Miwok Culture Change During the Historic Period. Master's thesis in Anthropology, San Francisco State University, San Francisco.
- Vaux, Calvert
1864 *Villas and Cottages*. Reprinted by Dover Publications, New York, 1970.
- Wallerstein, Immanuel
1983 *Historical Capitalism*. Verso, London.

Warren, John Q. A.

1967 *California Ranchos and Farms, 1846-1862*. State Historical Society of Wisconsin, Madison.

Washburn, Lorinda

1888- Probate case #1071. Superior Court. On file, History and Science Division,

1892 Sacramento. Archives and Museum Collection Center, 17:24, Box 28.

Watkin, David

1977 *Morality and Architecture*. Clarendon Press, Oxford.

Wells, Fargo & Co.

1873 *Directory of Chinese Merchants, San Francisco and Sacramento*. Britton & Rey, San Francisco.

1878 *Directory of Chinese Businesses Houses*. Britton & Rey, San Francisco.

1882 *Directory of Chinese Businesses Houses*. Britton & Rey, San Francisco.

Welter, Barbara

1966 The Cult of True Womanhood. *American Quarterly* 18(2):151-174.

West, G. James

1977 Late Holocene Vegetation History of the Sacramento-San Joaquin Delta, California. Report Prepared by Cultural Heritage Section, California DPR for California Department of Water Resources, Interagency Agreement B-50173. Sacramento.

1989 Pollen Analysis of Cultural Deposits from the IJ89 Site, Sacramento, California. Report prepared for ASC, SSU, Rohnert Park.

1993 The Late Pleistocene-Holocene Pollen Record and Prehistory of California's North Coast Ranges. In *There Grows a Green Tree: Papers in Honor of David A. Fredrickson*. Center for Archaeological Research at Davis 11:219-236.

Wetherbee, Jean

1980 *A Look at White Ironstone*. Wallace-Homestead, Des Moines, Iowa.

Wiebe, Robert H.

1967 *The Search for Order, 1877-1920*. Hill and Wang, New York.

Willetts, William, and Lim Suan Poh

1982 *Nonya Ware and Kitchen Ch'ing: Ceremonial and Domestic Pottery of the 19th and 20th Centuries Commonly Found in Malaysia*. The Southeast Asian Ceramic Society, West Malaysia Chapter, Malaysia.

- Wiley, Gordon R., and Philip Phillips
 1958 *Method and Theory in American Archaeology*. University of Chicago Press, Chicago.
- Williams, C.A.S.
 1941 *Outlines of Chinese Symbolism and Art Motives. Third Revised Edition*. Reprinted, Dover, New York. 1976.
- Williams, Petra with Marguerite R. Weber
 1978 *Staffordshire: Romantic Transfer Patterns, Cup Plates and Early Victorian China*. Fountain House, Jeffersontown, Kentucky.
- Williamson, G.R.
 1968 A Biologist Looks at Hong Kong Fisheries. *Fishing News International* 7(7):26-30.
- Woodward, Arthur
 1965 Indian Trade Goods. *Oregon Archaeological Society Publication* 2. Portland.
- Wooley, Sir Leonard
 1961 *Digging Up the Past*. Penguin Books, Baltimore.
- Wright, George F. (ed.)
 1880 *History of Sacramento County, California*. Thompson and West, Oakland.
- Wylie, Jerry, and Richard E. Fike
 1993 Chinese Opium Smoking Techniques and Paraphernalia. In *Hidden Heritage: Historical Archaeology of the Overseas Chinese*, edited by Priscilla Wegars, pp. 255-303. Baywood, Amityville, New York.
- Yamaguchi, Mas
 1983 *World Vegetables: Principles, Production and Nutritive Values*. Van Nostrand Reinhold, New York.
- Yang, Jeannie K., and Virginia R. Hellmann
 1996 What's in the Pot? An Emic Perspective on Chinese Brown Glazed Stoneware. Paper presented at the Annual Conference of the Society for Historical Archaeology, Cincinnati, Ohio.
- Yang, Mayfair
 1994 *Gifts, Favors, and Banquets*. Cornell University Press, Ithaca.
- Yang, Rosa
 1996 Resident of Burlingame, California. Interview by Jeannie Yang, 1 August 1996, Burlingame, California.

Yasuda, Fujio, and Kenya Mizuguchi

1969a Specific Characters of Three Sparid Fishes Referred to the Genus *Chrysophrys* in the Indo-Pacific. *Japanese Journal of Ichthyology* 16(1):24-30.

1969b A Study on the Osteological Characters of Six Sparid Fishes Referred to the Genera *Chrysophrys* and *Pagrus*. *Japanese Journal of Ichthyology* 16(1):31-34.

Yee, Rhoda, and Spaulding Taylor

1993 *Chinese Village Cookbook*. Taylor & Ng, San Francisco.

Yentsch, Ann Elizabeth

1993 Working with Fill in San Francisco. In *Tar Flat, Rincon Hill and the Shore of Mission Bay: Archaeological Research Design and Treatment Plan for SF-480 Termination Separation Rebuild*, edited by Mary Praetzellis and Adrian Praetzellis. Report prepared for the California Department of Transportation, District 4, Oakland.

Yu, Ying-shih

1977 Han. In *Food in Chinese Culture*, edited by K.C. Chang, pp. 53-85. Yale University Press, New Haven and London.

Zeising, Grace H.

1989 Analysis of Personal Effects from Excavations at the Boott Mills Boardinghouse Backlots. In *Interdisciplinary Investigations of the Boott Mills, Lowell, Massachusetts; Volume III: The Boardinghouse System as a Way of Life*, edited by Mary C. Beaudry and Steven A. Mrozowski, pp. 141-168. National Park Service, Boston.

Zumwalt, Betty

1980 *Ketchup, Pickles, Sauces: 19th Century Food in Glass*. Mark West Publishers, Fulton, California.

Appendix A

HI56 Oral History Project Summary

by Karana Hattersley-Drayton

Raymond Young
Chinese American; Cantonese/English
Interviewed: 5 March 1996

Raymond Young was born in 1921 in Sacramento's Historic Chinatown. At that time his family lived with his maternal grandparents above their tailor shop at 421 I Street. Around 1925 the Youngs moved out of Chinatown to what was then the edge of Sacramento. Through the help of a Caucasian friend, they purchased a residence at 2115 16th Street. Mr. Young attended William Land School, California Junior High, and C.K. McClatchy High School. He is retired from Mather Air Force Base, where he worked as a civilian Aircraft Maintenance Supervisor.

Young's father, Harry Kee Young, emigrated from Kwangtung Province in China around the time of the San Francisco earthquake. He first lived in Canada and then came to the Sacramento Delta where he picked fruit. Ultimately, he was able to work his way up to be a head chef at the Brown Hotel in Walnut Grove. Upon arrival in Sacramento, he became a butcher at the Fulton Market.

Raymond Young's mother, Rose Boune Au, was born in Sacramento. Due to her fluency with English, she served as a cultural broker, helping newly-arrived Chinese women to acculturate, and translating for Chinese emigrants in general. As in many immigrant communities, her father's tailor shop served as a nexus for the working community. Itinerant Chinese workers often picked up their mail at the shop. Her mother [a Mar] was born around 1858 in California and was the daughter of early immigrants to Monterey.

This interview includes questions about Chinese American foodways and medicines. Mr. Young also describes his general memories of Sacramento's Chinatown in the 1920s and 1930s.

Eddie Chan, 82
Chinese American; Cantonese (Heungshan)/English
Interviewed: 5 March 1996

Eddie Chan was born in 1913 at 414 I Street, in Sacramento's historic Chinatown. At the age of 5, he moved with his family to 526 I Street, across from the site of the new federal courthouse project.

Eddie Chan's mother, Lin Leong, was born in Madera, California, of immigrant parents. Chan's father, Chan Tai Oy, was born near Canton in the village of Cha Sei around 1887. He immigrated to California when he was 10 years old, although he did not satisfy the immigration officers who questioned him at Angel Island and was sent back to China. He stayed with a family friend in Yokohama, Japan, for two years before returning successfully to the United States. Chan Tai Oy worked for his brother in the wholesale produce business and eventually became a managing partner. The Tong Sung Co. was located at 916 3rd Street. The business went bankrupt during the Depression and Mr. Chan started a new wholesale produce company with his father, the General Produce Company, which is now one of the largest in Northern California.

This interview includes family history, fascinating descriptions of the infrastructure of Sacramento's Chinatown (prior to 1920), and a candid discussion of the Tong Wars of the 1930s. Mr. Chan also describes his father's village and family home, from his visits to China in 1929 and 1973.

Stanley Chun, 72
Chinese-American; Cantonese/English
Interviewed: 19 December 1995

Stanley Chun was born in Sacramento in 1924 of Chinese parents. His father, Chin Wing [Chin Yim Chee] was born in the village of Saar Gow in Kwantung Province, China, in 1867. He immigrated to America in the late 1880s or early 1890s and settled in Sacramento. Chin Wing eventually opened a worker's clothing store and tailoring shop, the Wing-Lung at 206 I Street in Sacramento's Chinatown. The store catered to both the local Chinese community and the multi-ethnic work force at the Southern Pacific railroad yard. The store was so successful that eventually the family opened two others: the Stanford Store and Wing and Sons.

Well educated in China, Mr. Chin became a pivotal figure in the local Chinese community. He was a founder of the Chinese Language School, an original investor in the Merchant's National Bank, and a founder of the Chinese Hospital. He married Nellie Ow circa 1902, and the couple had nine children, including Mr. Chun. Mrs. Chin was a

second-generation Chinese-American and grew up in a farming community in the Sacramento Valley. The Chins formally changed their name to “Chun” as Chin was such a prevalent and popular name.

Stanley Chun attended local schools, including C.K. McClatchy High School. Following military service during World War II, he attended a variety of universities including the University of Chicago where he did graduate work. Mr. Chun had his own dental practice in Auburn for 35 years. He and his wife, Ruth [Kekina] Chun, who is also a dentist, worked for several years in Guam.

This interview focuses on the earliest history of the Chinese settlement in Sacramento, but also includes valuable information about Mr. Chun’s memories of the 1920s and 1930s.

Margaret [Wong] Lim, 70
Chinese-American; Cantonese/English
Interviewed: 19 December 1996

Margaret [Wong] Lim was born in 1925 in Sacramento and has worked for the past 48 years for Franklin Life Insurance Co.

Her paternal grandfather, Wong Chong, was born in Hoisan, Kwangtung Province, China, around 1865. He came to the Sacramento area in about 1878 and worked initially for a local tobacco company. Wong had a dry goods store, Quong Yuen Lung, at 324 I Street that sold Chinese-made goods, as well as American work clothing to Southern Pacific railroad workers. He also owned a popular restaurant, the Chinese Republic, that was located on 3rd between I and J Streets.

Mrs. Lim’s maternal grandfather, T. Wah Hing, was a prominent herbalist who had a shop at 725 J Street. During an influenza epidemic, perhaps that of 1918, he apparently saved many lives. Hing acquired a great deal of property in south Sacramento.

Mrs. Lim’s father was a banker with the American Trust in San Francisco (now Wells Fargo) and died when he was only 30. Her mother then moved the young family back to Sacramento and went to work as a bookkeeper for the General Produce Co. Mrs. Lim attended U.C. Berkeley and Stanford University before her marriage.

The interview includes information about Chinese customs and foodways, traditional beliefs, and family history.

Appendix B

Context Concordance for HI56 Block Excavations

Area 1 Context Numbers

Number	Address	Type	Description
1	820-828 6th	Wall	brick building
2	525-527 I	Wall	back of brick building, abuts Wall 1
3	523 I	Wall	Union Iron Works, abuts Wall 2
4	525-527 I	Layer	historic surface surrounded by Walls 1,2,3
5	525-527 I	Layer	1855 burn layer
6	525-527 I	Layer	A horizon
7	525 I	Privy	ineligible, too recent
8	527 I	Privy	ineligible, too recent
9	525 I	Layer	top layer of Privy 7
10	527 I	Layer	layer in Privy 8, clean sand
11	525 I	Layer	thin layer in Privy 7
12	525 I	Layer	layer in Privy 7
13	812-814 6th	Trench	test trench excavated 1994
14	812-814 6th	Trench	test trench excavated 1994
15	812-814 6th	Trench	test trench excavated 1994
16	527 I	Pit	rectangular pit almost 5' deep
17	527 I	Layer	layer in Pit 16
18	527 I	Layer	layer in Pit 16
19	527 I	Layer	layer in Pit 16, ash and charcoal lens
20	525-527 I	Layer	layer on top of Layer 5
21	527 I	Layer	layer in Pit 16, sand
22	525-527 I	Layer	3-4' fill layer, sand
23	525-527 I	Layer	demolition layer connected with Wall 1
24	525-527 I	Layer	lens of plaster, demolition of Wall 1
25	527 I	Layer	layer in Privy 8, full of brick bats
26	525-527 I	Layer	demolition of Wall 1
27	527 I	Post mold	probably supported back porch
28	527 I	Post mold	probably supported back porch
29	527 I	Pit	small, not excavated
30	527 I	Post	
31	527 I	Post	
32	525 I	Post mold	probably supported back porch
33	525 I	Post mold	probably supported back porch
34	525 I	Trench	foundation trench for Wall 2
35	525 I	Post mold	probably supported back porch
36	525 I	Post mold	probably supported back porch
37	525 I	Post mold	probably supported back porch
38	527 I	Layer	layer in Pit 41
39	527 I	Layer	layer in Pit 41, thin
40	527 I	Layer	layer in Pit 41
41	527 I	Pit	refuse pit
42	527 I	Trench	test trench excavated 1994

Number	Address	Type	Description
43	525 I	Trench	wood-lined trench
44	525 I	Trench	foundation trench for Wall 3
45	525 I	Pit	cut Privy 7, not excavated
46	525 I	Pit	not excavated
47	525 I	Pipe	cast iron pipe, cuts Wall 2
48	525 I	Pit	shallow pit, not excavated
49	525-527 I	Layer	same as Context 20
50	525-527 I	Trench	test trench excavated 1994
51	527 I	Layer	thin layer
52	527 I	Layer	possible flood layer
53	525-527 I	Layer	
54	527 I	Layer	lens in Layer 4
55	820-828 6th	Trench	test trench excavated 1994
56	block wide	Layer	native soil
57	527 I	Layer	almost sterile flood deposit
58	527 I	Layer	layer above Layer 5
59	527 I	Layer	layer in Pit 16
60	527 I	Layer	layer in Pit 16
61	527 I	Post hole	post is Context 31
62	527 I	Layer	Fill of post Hole 61
63	527 I	Layer	18" deep, silt with sand
64	525-527 I	Layer	black silty sand layer
65	525-527 I	septic tank	capped by Context 22, not excavated
66	820 6th	septic tank	not excavated
67	818 6th	septic tank	not excavated
68	525-527 I	Layer	refuse lens
69	525-527 I	Pit	
70	525-527 I	Post	
71	525-527 I	Post	
72	525-527 I	Layer	layer in Pit 69
73	525-527 I	Post hole	post is Context 70, cuts Pit 79
74	525-527 I	Layer	fill of post hole Context 78
75	527 I	Layer	fill of post hole Context 73
76	525-527 I	Layer	layer in Pit 79
77	not used		
78	525-527 I	Post hole	post cut for Post 71,
79	525-527 I	Pit	16" deep, not many artifacts
80	525-527 I	Layer	layer in Pit 69, burned, charcoal
81	525-527 I	Layer	layer in Pit 69
82	525 I	Layer	possibly same as Context 6
83	525-527 I	Pit	22" deep refuse pit
84	525-527 I	Layer	layer in Pit 83
85	525-527 I	Layer	layer in Pit 83
86	525-527 I	Layer	layer in Pit 16, soil screened at lab
87	527 I	Trench	possible drainage trench

Number	Address	Type	Description
88	527 I	Layer	layer in Pit 16, evidence of burning, wood lining
89	527 I	Fill	fill in Trench 87
90	527 I	Layer	native soil, same as Context 56
91	527 I	Trench	possible pipe trench
92	527 I	Layer	layer in Trench 91
93	527 I		possible wood-lined basement
94	527 I	Layer	possible fill of basement
95	527 I	Trench	test trench excavated in 1994
96	527 I	Layer	same as 1101
97	527 I	Fill	fill of builders' trench for basement 93
98	527 I	Wood	wood-lining of Context 93
99	527 I	Layer	possibly the same as 1100
100			same as Context 68
101	527 I	Layer	same as 1100
102	527 I	Layer	plaster lens, possible demolition
103	527 I	Layer	same as Context 104
104	527 I	Layer	layer in Basement 93
105	527 I	Layer	
106	527 I	Layer	probably 1855 burn layer, same as Context 5
107	527 I	Layer	same as Context 6
108	527 I	Layer	fill of Basement 93
109			same as Context 61
110	527 I	Layer	probably the same as Context 107
1100	822 6th	Layer	probably the same as Contexts, 99, 101, 49, 53, 4, 25, and 10
1101	822 6th	Layer	burn layer
1102	822 6th	Layer	
1103	822 6th	Layer	
500	818 6th	Privy	
501	818 6th	Pit	cuts Privy 500
502	818 6th	Ell	outbuilding attached to main house
503	818 6th	Layer	layer in Pit 501
504	818 6th		3'x3' test unit in Ell 502
505	818 6th		3'x3' text unit in Ell 502
506	818 6th	Layer	layer in Privy 500
507	818 6th	Layer	layer in Privy 500
508	818 6th	Layer	layer in Pit 501
509	818 6th	Wood	wood lining of Pit 501
510	818 6th	Layer	layer in Ell 502
511	818 6th	Wood	wood lining of Privy 500
512	818 6th	Layer	layer in Pit 501
513	818 6th	Layer	layer in Privy 500
514	818 6th	Layer	layer in Privy 500

Number	Address	Type	Description
515	818 6th	Layer	layer in Privy 500, sample processed at lab
516	818 6th	Layer	upcast from the excavation of Pit 501 into Privy 500
517	818 6th	Layer	layer in Privy 500, no artifacts
518	818 6th	Layer	layer in Privy 500, no artifacts
519	818 6th	Layer	layer in Privy 500, sample
520	818 6th	Layer	equivalent to Context 6 at 525-527 I

Area 2 Context Numbers

Number	Address	Type	Description
900	513-515 I	Layer	probable demolition layer
901	513-515 I	Layer	thin layer
902	513-515 I	Layer	layer of alluvium, flood layer
903	513-515 I	Layer	1855 burn layer
904	513-515 I	Wall	brick foundation
905	513-515 I	Trench	foundation trench for Wall 904
906	513-515 I	Fill	fill of foundation trench for Wall 904
907	513-515 I	Pit	pit cuts Layer 902
908	513-515 I	Layer	layer in Pit 908, lots of brick
909	513-515 I	Layer	thin layer of mortar over Layer 903
910	513-515 I	Layer	brick pavement
911	513-515 I	Layer	sand bedding for brick pavement 910
912	513-515 I	Trench	builders' Trench for Pier 916
913	513-515 I	Fill	fill of builders' trench, Trench 912
914	513-515 I	Cut	cut for sand bedding 911
915	513-515 I	Wall	brick wall, substantial
916	513-515 I	Pier	brick pier, set in Trench 912
917	513-515 I	Trench	builders' trench
918	513-515 I	Fill	fill of builders' trench, Trench 917
919	513-515 I	Pit	shallow pit, truncated
920	513-515 I	Layer	layer in Pit 919, cuts Layer 903
921	513-515 I	Pier	brick pier, same construction as 916
922	513-515 I	Pier	brick pier, same construction as 916
923	513-515 I	Pier	brick pier
924	513-515 I	Pier	brick pier, same construction as 923
925	513-515 I	Pier	brick pier, same construction as 923
926	513-515 I	Pier	brick pier, same construction as 923
927	513-515 I	Pier	brick pier, same construction as 923
928	513-515 I	Pier	brick pier, same construction as 923
929	513-515 I	Pier	brick pier, same construction as 923
930	513-515 I	Pier	brick pier, same construction as 923
931	513-515 I	Pier	brick pier, same construction as 923
932	513-515 I	Pier	brick pier, same construction as 923
933	513-515 I	Trench	builders' trench for Wall 915
934	513-515 I	Fill	fill of construction trench, Trench 933
935	513-515 I	Pier	brick pier, same construction as 923
936	513-515 I	Trench	builders' trench for Pier 922
937	513-515 I	Trench	builders' trench for Pier 921
938	513-515 I	Trench	builders' trench
939	513-515 I	Fill	fill of builders' trench, Trench 937
940	513-515 I	Fill	fill of builders' trench, Trench 936
941	513-515 I	Fill	fill of builders' trench, Trench 938

Number	Address	Type	Description
942	513-515 I	Trench	builders' trench for Pier 923
943	513-515 I	Fill	fill of builders' trench, Trench 942
944	513-515 I	Trench	builders' trench for Pier 927
945	513-515 I	Trench	builders' trench for Pier 926
946	513-515 I	Trench	builders' trench for Pier 925
947	513-515 I	Trench	builders' trench for Pier 930
948	513-515 I	Trench	builders' trench for Pier 929
949	513-515 I	Trench	builders' trench for Pier 928
950	513-515 I	Trench	builders' trench for Pier 931
951	513-515 I	Trench	builders' trench for Pier 932
952	513-515 I	Trench	builders' trench for Pier 935
953	513-515 I	Pit	pit cut by Walls 915 and 904
954	513-515 I	Layer	A horizon beneath 1855 burn 903
955	513-515 I	Layer	overburden, fill, demolition debris
956	513-515 I	Layer	sand layer, possibly late flood deposit
957	513-515 I	Layer	brick concentration, possibly demolition
958	513-515 I	Layer	layer in Pit 953, sample wet-screened
959	513-515 I	Layer	layer in Pit 953
960	513-515 I	Layer	layer in Pit 953, wet-screened
961	513-515 I	Layer	layer in Pit 953, wet-screened
962	513-515 I	Pit	highly disturbed pit
963	513-515 I	Layer	layer in Pit 962
964	513-515 I	Pit	small pit under Layer 903
965	513-515 I	Pit	small pit
966	513-515 I	Layer	layer in Pit 965
967	513-515 I	Layer	layer in Pit 964
968	513-515 I	Layer	Native soil
969	513-515 I	Trench	construction trench for pipe 970
970	513-515 I	Pipe	lead pipe in Trench 969
971	513-515 I	Pit	small pit with mortar lining
972	513-515 I	Layer	fill of Pit 971, many bricks
973	513-515 I	Layer	layer in Trench 969
974	513-515 I	Box	sheet metal box
975	513-515 I	Fill	fill of Box 974
976	513-515 I	Layer	demolition layer
977	513-515 I	Layer	alluviation prior to demolition of building
978	513-515 I	Layer	isolated burn layer
979	513-515 I	Pit	pit for metal Box 974, beneath Burn 903
980	513-515 I	Fill	fill of Pit 979

Area 3 Context Numbers

Number	Address	Type	Description
700	507 I	Layer	possible flood deposit
701	507 I	Layer	brick basement
702	507 I	Layer	1855 burn layer
703	507 I	Trench	pipe trench
704	507 I	Fill	fill in Trench 703
705	507 I	Pipe	lead pipe in Trench 703
706	507 I	Layer	
707	507 I	Wall	brick foundation
708	507 I	Layer	native soil
709	507 I	Wall	W and N wall of building with Floor 701
710	507 I	Wall	brick wall, cuts Floor 701 and Wall 709
711	507 I	Layer	demolition of brick building
712	507 I	Layer	concrete floor, associated with Walls 710 and 714
713	507 I	Layer	demolition debris
714	507 I	Wall	brick wall
715	507 I	Layer	possible flood deposit
716	507 I	Trench	builders' trench for Wall 710
717	507 I	Fill	fill of builders' Trench 716
718	507 I	Layer	wood floor
719	507 I	Pit	large pit
720	507 I	Layer	layer in Pit 719
721	507 I	Trench	builders' trench for Wall 723
722	507 I	Fill	fill of builders' Trench 721
723	507 I	Wall	brick wall
724	507 I	Layer	burn layer
725	507 I	Layer	burn layer
726	507 I	Layer	sand bedding for Floor 701
727	507 I	Pit	under Floor 701
728	507 I	Pit	under Floor 702
729	507 I	Layer	layer in Pit 728
730	507 I	Layer	layer in Pit 728
731	507 I	Layer	layer in Pit 727
732	507 I	Layer	layer in Pit 719
733	507 I	Layer	
734	507 I	Drain	brick drain
735	507 I	Fill	fill of brick Drain 734
736	507 I	Layer	layer in Pit 719
737	507 I	Layer	layer in Pit 719
738	507 I	Layer	layer in Pit 719