

# Cultural Resources Impact Mitigation Program

Los Angeles Metro Red Line Segment One  
(Chinatown)



Prepared for:



Metropolitan Transportation Authority  
Greenwood and Associates  
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CULTURAL RESOURCES IMPACT MITIGATION PROGRAM

LOS ANGELES METRO RAIL RED LINE SEGMENT 1

Submitted to:

Los Angeles County Metropolitan Transportation Authority  
818 West Seventh Street  
Los Angeles, California 90017

Submitted by:

Roberta S. Greenwood

October 1993

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## EXECUTIVE SUMMARY

Cultural resource services provided in support of the construction of the Metro Rail Red Line, MOS-1, have included background research; monitoring in areas where there was a potential that construction might affect subsurface resources; surface collection; controlled archaeological excavation of significant features or deposits; analysis of the recovered cultural materials, including many technical studies; HABS recordation of portions of Union Passenger Terminal and MacArthur Park; installation of both temporary and permanent artifact exhibits; and presentations of the project and its results to many public and professional audiences through speeches, articles, television, and the press.

The most important archaeological field work occurred in the setting of Old Chinatown at Union Passenger Terminal, during construction of the slurry wall (1989), at Emergency Exit No. 10 (1991), and the West Entrance (1991). Within the small area accessible for excavation, 59 distinct features were identified and sampled. Many contained unprecedented numbers and densities of artifacts; in Feature 29 alone, for example, there were 1171 pounds of stoneware shipping jars, along with 456 porcelain vessels. 207 gambling counters, 17 Asian coins, 25 items related to opium smoking, 10 ceremonial candlesticks or incense burners, fragments of 5 Chinese porcelain spittoons, a carved ink stone, pieces of at least 2 clay stoves, 113 medicinal vials, 10 toothbrushes, 321 buttons, 17 toy marbles, 3 dolls, and an equivalent abundance of food remains and other materials. Together, each such assemblage reflects the import, preparation, and service of food; recreation; health practices; presence of women and children; rubbish disposal practices; and degree of participation in local retail networks.

The quantity of items is not redundant: adequate numbers are needed for statistical validation of the conclusions drawn; and the rare or unique items are more apt to be recovered in proportion to the volume of the sample. One example of a class of items not previously found or identified is the group of portable clay stoves. Other artifacts for which new information is developed include the spittoons, toothbrushes, small porcelain oil lamps, herbal steamer, bulb planter, porcelain pillow, and works of representational and symbolic art in clay and stone.

Special studies include many translations from the Chinese on ceramics, glass, and newsprint; elemental analysis of stoneware and porcelain; identification of 90 seeds; faunal study of two features and selected fish; and interpretation of 322 Asian coins. Each approach has yielded new information. The coins, for example, were minted in Vietnam (280 examples), China (41), and Japan (single occurrence). Although their dates span a possible 335 years, from 1573 to 1908, the relative proportion of Vietnamese to Chinese coinage is more significant in dating the site and its individual

features than the actual age of the coins. The research demonstrated that Vietnamese coins were imported into the Los Angeles area between 1885 and the late 1890s as part of the currency then circulating in China. This will help to date other Chinese sites since most contain both types of coins. Of low intrinsic value, both were used predominantly in gambling and less often, as decorations or talismans, and for coin-rubbing, a form of healing.

The historical research has compiled a comprehensive overview of events, structures, persons, and cultures within the Union Station context, before and during the years of Chinatown. Together with the artifacts and structural remains, the synthesis illuminates aspects of lifeways not previously reported. Acculturation was limited, right up to the demolition of Chinatown; evidence includes containers for the same imported foods and herbal remedies, diagnostic selection of food animals and butchering patterns, persistence of Chinese names and burial practices, Old World leisure activities, and settlement patterns as revealed in traditional architecture and land use. Euroamerican businesses were never able to penetrate the internal economic organization, as Chinatown responded to hostility and prejudice by drawing ever closer to maintain its ethnic boundaries and cultural traditions. Social interactions with the host city were limited, but included eclectic patronage of local pharmacies, and the children's attendance at public and mission schools. The closest organization ties were with Chinese groups based or originated in San Francisco.

One of the most important results of the work conducted was to prove that the site retains its integrity, buried beneath some 14 feet of fill which was imported to build the station and trackbed. The upper limit of the site in some areas is marked by a layer of brick, pavement, and other rubble which remained after demolition. Below this are the early streets and sidewalks, floors, privy pits, refuse deposits, structural remains, and sheet trash. These are pristine, as they were created, abandoned, and covered. Such features are invaluable to scientific inquiry because each has a context which can be related to a specific household, occupation, or function; they have not been disturbed. The site itself is unique among other Chinatowns since it was created on previously unoccupied ground, and continued to exist until it was destroyed; thus, its constituents are unmixed with the remains of either earlier or later occupations.

Only a very small fraction of a single block within Chinatown could be examined during this investigation. Union Station itself is already listed on the National Register of Historic Places (NRHP) for its architectural and historical values. The entire block is now recognized as significant under NRHP Criterion A (association with a pattern of events significant to the cultural traditions of a community); and Criterion D, as an historic archaeological property that has been partially excavated, has yielded important



data, and still retains substantial and intact deposits. It also meets the CEQA definition of an "important" site by its age, associations, and potential to provide answers to regional research questions of interest to a substantial public at large and to a very concerned ethnic population.

#### ACKNOWLEDGMENTS

Many people have contributed to this endeavor, either by facilitating the contract and field work, or providing special information and insight about the history and archaeological remains. We wish to acknowledge the assistance of John Adams, Vice President, Construction, Rail Construction Corporation; James L. Sowell, Nadeem Tahir, and Lynn Struthers in administrative support; and to the many Inspectors and Resident Engineers for cooperation in the field work.

In addition to those who have authored parts of this report, many other specialists have contributed to the interpretation of the cultural remains. Lester Ross and Roderick Sprague examined the glass beads; Robert Kibler advised on the manufacture of Chinese stoneware; Dr. Donald Corbett identified dental items; and Alison Stenger tested the elemental constituents of Chinese ceramics. Mr. David Kamansky, Asia Pacific Museum, and Dr. Michael Engh, Loyola University, provided information on art objects and the early missions, respectively.

We are greatly indebted to those who have translated Chinese characters on newsprint, glass, and ceramics. From the Chinese Historical Society of Southern California, Paul and Emma Louie, Wai Kin Tam, Don Toy, and Suellen Cheng were ever patient and helpful. Professor Hung-hsiang Chou, UCLA, provided assistance throughout the project. Others who contributed were Prof. Enzheng Tong, Cheng Du University, and Eric Chau, Hong Kong Television Services.

Those who added so much to the documentary and photographic record are named in Chapter 2; we were particularly fortunate in the participation of the Apablaza and Cleary families.

We do not wish to take the professional services for granted, either. R. Paul Hampson was the consultant in technology for all classifications of glass, metals, and hardware, and entered the data for the tables of marks on ceramics and glass. The lead archaeological monitor from inception through 1990 was Gregg Richie; John M. Foster served as project manager, and Gwendolyn Romani, as field director for the 1991 field work. Helle Girey directed all laboratory services and prepared the original drawings for this report. The overlay maps were digitized by Dr. David Hornbeck, Area Location Systems.

R. S. G.



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## 1. INTRODUCTION

### Regulatory Context

This report is provided to summarize the research, field work, laboratory analysis, and all studies undertaken in support of the construction of Los Angeles Rail Rapid Transit Project, Minimum Operable Segment 1 (MOS-1), from 1987 through 1992. The undertaking known as Metro Rail was developed in a series of systematic planning steps which included the *Alternatives Analysis/First Tier EIS/EIR* completed in 1980, draft and final *Environmental Impact Statement* (1983), and the Memorandum of Agreement signed in 1983. The *Subsequent Environmental Impact Report* of 1987 reflected proposed changes in alignment and connections to the next proposed segment (MOS-2). Construction began in 1987, and MOS-1 passenger service became operational in 1993. Administratively, the contracts entered into by Southern California Rapid Transit District (RTD) were transferred to the Los Angeles County Transportation Commission (LACTC) in July 1990.

The studies of cultural resources were conducted in compliance with the regulatory context of Section 102(2)(c) of the National Environmental Policy Act of 1969; Sections 3(d) and 14 of the Urban Mass Transportation Act of 1964, as amended; Section 106 of the National Historic Preservation Act of 1966; and Section 4(f) of the Department of Transportation Act of 1966. The Memorandum of Agreement (MOA) between the California State Historic Preservation Officer, Urban Mass Transit Administration, Southern California Rapid Transit District, and the Advisory Council on Historic Preservation specifically recognized the sensitivity for paleontological resources at station locations, architectural values at Union Station and Pershing Square, and archaeological values at Union Station and Campo de Cahuenga (the latter, not affected by MOS-1). Recommendations and implementation for architectural compatibility were not addressed under this contract. The methods and results of the paleontology program have been reported separately by E. Bruce Lander (1987a, 1987b, 1987c, 1990a, 1990b, 1990c, 1992a, and 1992b).

For archaeology, the MOA stipulated an identification study, treatment plan, testing, a peer review board to provide oversight guidance, and consideration of indirect effects (SCRTD 1983:27-30).

### Location and Nature of the Project

The first segment of Metro Rail (Red Line) to enter construction and the subject of this report is a 4.4 mile alignment extending from the Union Passenger Terminal (UPT), which is to become a hub

for integrated intra-urban and inter-urban transportation services, to the intersection of Wilshire Boulevard and Alvarado Street, at MacArthur Park. The second segment, now in construction, will carry the line to Hollywood Boulevard and Vine Street by 1998, and ultimately, to the San Fernando Valley.

The MOS-1 segment incorporates five stations: Union Passenger Terminal, Civic Center, 5th and Hill, 7th and Flower, and Wilshire at Alvarado (Figure 1.1). The stations were constructed by the cut-and-cover method which involves excavation from ground level followed by construction of a concrete box with appropriate entrances and facilities. These areas were the targets of concern, together with other activities conducted from the surface, e.g., utility relocations. The tunnels between the stations were built by underground horizontal boring, at an average depth of 65 feet. Because of the nature of the machinery used and the depth of the tunnels, there was no opportunity to observe the soils, and the probability for encountering cultural resources - other than paleontological - was regarded as low to absent.

#### **Previous Studies**

In the *Alternatives Analysis and Environmental Impact Statement/Report* (1978), Appendix II.J Part 2 listed resources of archaeological, historical, and paleontological importance potentially subject to impact (Singer 1978). Identified archaeological resources within the footprint of MOS-1 included the Gabrielino village of *Yangna*, location unknown; and archaeological site CA-LAN-7, recorded in 1951 as a deposit of historical materials, including Chinese, "across the street from Union Station" and originally regarded as disturbed or buried by freeway construction. The Union Passenger Terminal had been designated as a City Historic-Cultural Monument in 1972; listed on the National Register of Historic Places (NRHP) in 1980; and portions of it documented according to the standards of the Historic American Buildings Record (HABS).

Pursuant to the MOA, a technical report with further description of known and potential archaeological resources was prepared (WESTEC 1983). This was followed by the Treatment Plan which set forth a program for monitoring, response to unanticipated discoveries, evaluations, data recovery, contingency for human burials, and preparation of a technical report (WESTEC/Carrico 1985). In 1987, a contract was awarded to Greenwood and Associates to provide all services related to cultural resources.

#### **Summary of Services**

Administrative and operational procedures were developed prior to construction for monitoring, collection, data recovery, response to contingencies, lines of communication, agency and contractor responsibilities, and reporting (Greenwood 1987a).

The monitoring for paleontological resources began at the 7th and Flower Street station area in April 1987, was extended to the other station locations as construction continued, and data recovery was accomplished with the collection and analysis of fossiliferous matrix. These studies have been reported separately (Lander 1987a, 1987b, 1987c, 1990a, 1990b, 1990c, 1992a, and 1992b).

Monitoring for archaeological resources began at the same time. More intensive efforts followed in 1988 as construction extended to South Santa Fe, the wastewater treatment area at Macy and Vignes Streets, and initial borings for ramps at the southeast corner of Alameda and Macy. During monitoring, isolated or displaced historical artifacts were collected, structural remains were recorded, and professional personnel responded on call in early 1989 to unanticipated discoveries, e.g., during extension of elevator shaft No. 12 inside the terminal building. The exposure of an intact Chinese deposit below the floor of the station, and another within the baggage handling area, confirmed the predictions that significant remains of Chinatown would be affected. In the baggage handling area, the deposit began 36 inches below the floor and continued to a depth of 6 feet.

Preparation was made for encountering the anticipated resources at Union Station by compiling historical maps and data, and generating digitized maps which illustrated the Sisters of Charity buildings and the structures of Chinatown with reference to modern streets, the railroad terminal, and the projected Metro Rail alignment (Figure 1.2). An archaeological site record was developed, and the Union Station block was designated as CA-LAN-1575-H.

Coordination meetings were held with each of the Resident Engineers at all of the project locations. Administrative and operational procedures were developed and submitted to the Rapid Transit District. Active field work began with monitoring in May 1987 at 7th and Flower.

June 1987 - At 4th and Hill Streets, archaeological monitoring revealed brick and mortar fragments and clay pipe in an old utility trench, but the remains had no integrity, occurred in fill related to the older, underlying storm drain, and were not regarded as significant.

July 1987 - Monitoring at 7th and Bonnie Brae revealed a sparse deposit of cultural materials from 1.7 to 4.7 m depth. The soil appeared to be original and highly stratified. Several historical artifacts were recovered and included ceramic tile, fired brick, the neck and finish of a glass bottle, and several other nondiagnostic artifacts.



**Figure 1.2**

**Vicinity, Past and Present**

**Rear Pocket**

August 1987 - Mechanical trenching at 7th and Hill revealed isolated, nonsignificant cultural materials. No evidence of the zanja was observed, but remains of a brick foundation and relatively modern refuse were noted at the construction of a drop shaft.

October 1987 - During the excavation of a Wastewater Treatment Facility at Macy and Vignes, monitors recorded episodes of fill and dumping, an oiled gravel surface, and concentrations of domestic cultural remains at approximately 30 cm. Some of the materials are turn-of-century (ceramic ale bottle, glass bottle of "Paine's Celery Compound") while others appear to date ca 1920s-1930s.

December 1987 - On Hill Street, north of First, two hand dug tunnels were revealed at a depth of 12 feet. One trended west 20 feet under Hill Street until it terminated in a cave-in caused by previous excavation for a sewer line. The other tunnel heads north about eight feet. Both tunnels are about 2 feet wide, and 3-4 feet high, and show the scars created by attacking the bedrock with picks. Limited research in the historical map files at the Bureau of Engineering and consultation with Bernice Kimball (City Engineers Office) failed to elicit any information about the date, function, or builder(s) of the tunnels. They might be related to early water transport (although no erosion of the sidewalls or sedimentary fill was observed), or they could be extensions of the Chinese tunnels which are known only blocks to the south, around the Plaza area. No associated artifacts, which might have provided some clues to origin or function, were observed.

Monitoring, data recovery, and processing of cultural materials were also conducted at Macy and Vignes and 300 S. Santa Fe. Artifacts dating back to the middle of the nineteenth century were collected at both locations. The deposit at Macy/Vignes had already been somewhat disturbed; the materials occurred at an average depth of three feet below visible fill.

In the trench at Santa Fe, brick, concrete, and asphalt building debris occur in the upper 4 feet; the soil from 4-8 feet is composed of sand. Oyster shell (an introduced species, not native to California), animal bone, ceramic and glass fragments were collected in the spoil pile. Identifiable artifacts predate the old Santa Fe Railroad station. A mortared brick foundation toward the south end of the track area is the approximate location of the old roundhouse.

Controlled archaeological excavations in Chinatown were limited to the right-of-way and further constrained by the existing passenger tunnels, facilities (Figure 1.3), operation of the trains and prior impacts. The field work was planned to accommodate the construction schedule; in effect, the investigations were conditioned in both time and space by "windows of opportunity." Major phases of excavation occurred on October 24-November 4, 1989

during construction of the slurry wall; at Emergency Exit No. 10 from February 8-13, 1991; and at the West Entrance from February 25-March 15, 1991. Most of the materials described in this report were recovered during these efforts.

Other services provided include an addition to the HABS documentation of the Union Passenger Terminal to record elements in the baggage and express unit which would be affected by Metro Rail (PHR Associates 1988), and recording to HABS standards the landscape features at MacArthur Park prior to the temporary draining of the lake (PHR Associates 1991). Temporary public displays of artifacts and interpretive graphics were installed in 1991 at the City Hall Bridge Art Gallery and at the Fine Arts Building, and permanent exhibits were provided for the Rapid Transit District office and the Los Angeles County Transportation Commission. Public relations cooperation was extended to Channel KCET in the production of a Los Angeles History Series program on Chinatown, and to numerous television and journalism features, including a Chinese-language broadcast which was carried locally and in Hong Kong.

A cooperative agreement between the LACTC, RTD, and Catellus Corporation has been concluded for curation of the artifacts, field notes and catalogue, and descriptive materials far beyond the scope of this report to itemize in detail. All faunal and floral remains have been accepted by the Zooarchaeology Laboratory, Institute of Archaeology, at the University of California at Los Angeles. All other cultural materials will be curated by the Chinese Historical Society of Southern California. Both collections have unprecedented value for continuing research, as well as public displays and interpretation.

In three seasons of field work the following personnel were involved: 1989 Laboratory Staff - Helle Girey, Laboratory Director (to date); Diane Adams, Ana Mariella Bacigalupo, Glen Brown, Linda Girey, and Charlene Singleton; 1989 Field Staff - Gregg Richie, Senior Monitor; Bryan Cross, Laura Gillin, Lorin Jacobson, Rickelle



Figure 1.3. I've Been Working Under the Railroad (Locus 1)

Johnson, Neal Kaptain, Donna McDevitt, Lois La Rue, Gerard Milani, James Orenstein, John Romani, Maria Schuette, Skia (sic), Jerrel Sorenson, Leif Syrdahl, Bruno Texier, Lois Webb, and James Yutronich; 1991 Field Staff - Gwendolyn R. Romani, Field Director, Genevieve Head, Lisa Le Count, Judith Rasson, Philip Fulton, Terri Schuette, Bruno Texier, James Harmon, Leta Franklin, James Schmidt, June Schmidt, and Neal Kaptain.

All field personnel attended safety sessions to familiarize themselves with the work environment, hazards, and procedures in the event of an emergency. Selected personnel also attended mine safety classes for work in the tunnels and the Amtrak training for safety in the rail yards.

The signed chapters are the work of the designated authors, e.g., the historical background was researched and written by Lynn Kronzek, and the features were described by John M. Foster and Gwendolyn Romani, who directed the field work. The Asian coins were cleaned, identified, and analyzed by Margie Akin; the fish bone identified by Mark Roeder; seeds by Elizabeth Honeysett; and other faunal remains by Dr. Elsie Sandefur and staff at the Zooarchaeology Laboratory, UCLA. All other material not credited was prepared by Roberta Greenwood, with the assistance of Helle Girey, laboratory director for the entire effort, and an able, dedicated staff. Original drawings were prepared by Helle Girey.

#### **Organization of the Report**

The manner of presentation of very large archaeological collections has taken many approaches: by materials (e.g., all glass items or all ceramics); by function, such as food preparation or recreation; or even by place of origin (Chinese or Euroamerican manufactures). All of these may be professionally defensible, yet each fails in one regard or another to illuminate the full picture of life as it was lived, by a certain group of people, in a particular locality, at a given period in time. The latter was the ultimate objective of this research - to recover data needed to contribute meaningfully to an understanding of the Chinese Americans who lived on the Union Station property from ca 1880s-1934.

For this reason, the division of data into chapters is eclectic. For example, Chinese porcelains and stonewares are grouped for description and tabulation since many researchers may wish ready access to this information. At the same time, the section on health and hygiene is more broad-based, since the excavations demonstrated that the residents cleaned their teeth with brushes made in both China and Europe, with European and American dentifrices, and when ill, utilized both traditional, imported Chinese remedies and the prescriptions of local pharmacies. The organization is basically functional, but departs from rigidity when the objectives of interpretation or comparison are better served. It should be emphasized that not every artifact is



included in this report; the full catalogue, all working papers and tabulations, including inventories and identifications of discarded materials, are available for reference at the curating institutions.

### **Field Methods**

The scope of services directed the contractor to gather data concerning the location, size, depth, integrity, nature, and research potential of the existing resources, and mitigate the impact by means of a rapid data recovery program.

The objectives were accomplished by a combination of shovel test pits, controlled excavation units, backhoe trenches, the removal of overburden by mechanical and hand tools, the hand excavation of refuse deposits, and comprehensive instrument mapping of the site area, including elevations. All archaeological work was monitored by PDCD Inspectors and coordinated with the Resident Engineers.

The field work included subsurface testing by both hand and mechanically excavated means, collection of diagnostic historical materials by general provenience, controlled excavation of defined intact refuse deposits, and mapping to record all procedures and locations of cultural resources.

The field program encountered 59 cultural features within the area accessible for investigation. Four loci were excavated and are described as follows: Locus 1 consisted of Features 1-15 located under the temporary passenger bridge (Figure 1.4); Locus 2, Features 16-38, was located at the intersect of the UPT main passenger tunnel and the Metro Rail station; Locus 3 contained Features 39-42 found during the excavation of Emergency Exit 10; and Locus 4, West Entrance, contained 16 features (43-59). These deposits were sampled or removed in full in accordance with archaeological procedures regarding historical features and their relative significance as measured by integrity and scientific research potential.

### **Surface Collection**

During the phases of removing overburden by mechanical and hand excavated means, diagnostic artifacts were collected from the disturbed upper soils, bagged, and labelled according to provenience: CA-LAN-1575-H and appropriate locational data.

An archaeological vicinity map was prepared for each area investigated. The maps depicted accurately the location of a site datum, cultural features, major topographic and structural elements which figure prominently on the site, excavation units, surface collection points, and auger borings. A transit and stadia rod were used to determine bearings of cultural and natural features



and other points to be recorded, in conjunction with 100 m metric tapes.

### **Shovel Test Pits (STPs)**

Shovel test pits (STPs) were utilized to determine the presence of subsurface features, evaluate the density and contents of subsurface deposits, and examine other conditions of potential interest. Such units were a secondary method of testing the site and were used to provide preliminary parameters of the deposits. STPs were also used to determine locus boundaries. The shovel tests were subjectively placed adjacent to areas where cultural materials were anticipated or encountered. The STPs were approximately 0.5 meter in diameter, and extended to depths of 0.7-1.2 meters, supplemented by auger borings for an additional 0.5-1.0 meter in depth. All soils were not screened; however, all observed cultural materials were collected and bagged according to STP location, and forms were completed to record cultural provenience, depth, associations, and soil changes.



Figure 1.4. Excavation Under the Passenger Bridge (Locus 1)

### **Controlled Excavation**

Controlled units by hand methods were the primary means of excavation. The hand excavated units provided the primary evidence of chronology, site complexity, stratigraphy, deposition, and integrity. The following procedures were observed during the excavation of test units:

- Test unit size was 1 X 1 m, except where features or architectural elements prompted a change from arbitrary to cultural boundaries. Excavation was conducted in 10 cm incremental levels, except when natural or cultural strata were defined.

- Detailed recordation included Unit Level Records with maps of all features and artifacts, and other forms as deemed appropriate.

- All soil was dry screened through one-quarter inch mesh.
- All artifacts, animal bone, and ecofacts were collected in marked level bags.
- All fire affected rock and various types of bulk architectural materials were counted and weighed in the field, recorded on the Unit Level Record, and then reburied in the unit.
- Soil profiles, with Munsell color determinations, were drawn of the wall that most clearly represented the unit. One person was designated to record all soil profiles and Munsell determinations in order to maintain consistency.
- All phases of excavation, including features and visible stratigraphy were photographed, with use of Photo log records.

Residue remaining in the screens and unscreened soil samples were returned to the laboratory in marked bags identified by site number, unit number, depth, date, excavator, and any additional relevant comments, e.g., contextual associations. Fragile or perishable material was removed from the gross sample in the field, packed separately, labeled with full provenience, and then placed within the larger sample bag.

#### **Backhoe Trenches and Overburden Removal**

Two types of backhoes were utilized: 220 B - a large machine with a six foot bucket and the smaller 555 Ford backhoe with two and three foot wide buckets. D-9 tractors and front loaders were also utilized in the upper levels of compacted fill to allow the various sized backhoes access to the cultural layers. In Locus 2, where the area available for investigation was very restricted, the backhoe had to be lowered into the site with a crane.

The backhoe was used to clear away overburden, and when cultural materials were found, the mechanical equipment use was discontinued. Further clearing of the overburden and mixed soil lenses at the interface of the fill and original ground surface was conducted manually to reveal potentially intact cultural deposits.

#### **Features**

The general profile revealed an overburden of 14-16 feet of fill imported to establish the railroad track bed. The top of the cultural strata was marked by the layer of brick rubble attributed to the demolition of Chinatown. During the field investigation, 59 refuse deposits and architectural elements were encountered and designated sequentially. The features contained Chinese, and to a lesser extent, Euroamerican, ceramics and glass containers,

architectural remains, faunal and floral food remains, personal artifacts related to clothing and recreation, and other discards of the period from the 1880s through 1930s.

### **Laboratory Methods**

All residue from the screens and all surface collections were first scanned to isolate perishables and items which might have paper labels or inscriptions in ink, grease pencil, cinnabar, or other media. The large number of glass and ceramic artifacts which can be interpreted or identified owes much to this precaution. All other material was then washed and air dried prior to sorting in the laboratory. Preliminary sorting followed standard procedures, grouping faunal elements, ceramics, glass, metals, etc., except where functional categories were more meaningful. Thus, all buttons were grouped whether made of glass, ceramic, bone, or metal, and marbles would be classed under the rubric of toys, whether made of glass or clay.

All whole, nearly whole, marked, or otherwise diagnostic artifacts were catalogued. Like items from a single provenience were batched under a single catalogue number. Small fragments with little or no continuing research potential beyond their presence, location, and quantity were recorded with all pertinent detail, and then discarded. These records are part of the total data compendium curated with the collection.

### **Analytical Approach - Ceramics**

Neither weights nor counts of sherds are totally satisfactory in reflecting the quantities of ceramics, or the distribution of forms and patterns within a subgroup. Other reports have given "numbers" of vessels, without specifying what such totals reflect, i.e., fragments, estimates, only whole items, etc. The tabulations in this report, therefore, are based upon calculation of minimum numbers as described below. Although such figures do not begin to suggest the volume of the deposit, full records of all fragments and discards are on file for additional reference and research.

Bases were used for most of the Chinese ceramics to determine minimum numbers, exceptions including porcelain spoons and specific stonewares. Since there is variation in the breakage patterns of various ceramics and the design elements are useful in certain cases in reconstructing a vessel, not all ceramic types were treated identically.

Bamboo pattern rice bowls are made of thick porcelaneous stoneware, so that many bases were intact, although the bowl walls had been broken. If possible, fragmentary bases were inspected for a matching fit, and the remainder were grouped to produce a base diameter equivalent to one whole base. Therefore four quarters



were equivalent to one base; one half and two quarters made up one base, etc.

This, therefore, is truly a minimum number and the actual number may be four or more times greater. The rationale of this method is that there is a certain amount of mixing between the features and it was impossible to inspect all the features simultaneously. If one half of a bowl was in one feature and the other half in another, counting each half as a minimum number would result in inflated error. With this method, if all pieces were present, but scattered between various features, the total would be represented by reconstructing base diameters. Conversely, it is recognized that the four quarters may in fact represent four individual vessels; these estimates must be regarded as a minimum number.

Four Seasons serving bowls and plates were handled slightly differently. In this group, the walls are thinner, the porcelain body more fragile, and the vessels are larger; therefore there was more breakage. All bowls and plates contain a peach in the center of the interior and a red basemark. The number of peaches was counted, as were the base stamps. As control, reconstruction of the bases was also performed; all three methods produced very similar minimum numbers.

Celadon rice bowls are more fragile than Bamboo, but their bases have a relatively small diameter and are therefore more likely to be found intact. All bowls have a hand drawn blue mark under glaze on the bottom. It was therefore possible to produce minimum numbers by counting the blue marks or by reconstructing the bases.

Hand-painted fine porcelain rice bowls were counted as minimum numbers by their design elements. If there was one quarter of a bowl present with orange glaze and Chinese characters in white, it was counted as one, since it was easy to determine that there was no matching piece in other features.

Chinese stonewares were used to evaluate the validity of minimum numbers by reconstructing base diameters and comparing the total to that derived from reconstructing another diagnostic trait of the vessel. Feature 29 contained a very large number of broken stoneware vessels, and this assemblage was used to test the method.

Wine bottle bases are very distinctive with a dry footring and a glazed bottom. By reconstruction of bases, the minimum number was determined to be 411. A count of the wine bottle finishes, also very distinctive with narrow neck and flared lip, yielded a total of 362. This is a 12 percent variation between the two methods.

The bases of both the medium size food jars and the soy sauce jars are unglazed and of comparable diameter, so they could not be distinguished from one another from fragments alone. The food jars, however, have a wide mouth with rolled rim finish; the

minimum number by reconstruction was 122 vessels. The distinctive trait of the soy sauce jars is the applied spouts, and these numbered 202. The total of the two types of vessels using spouts and finishes was 324. The total number of bases representing both shapes was 341, a variation of only 5 percent.

Minimum numbers in spoons were determined by counting the number of spoon handles in the more common types. If the design element was unique, then any part of the spoon was counted as one.

### **Analytical Approach - Glass**

The sheer volume of recovered glass shards, partial, and whole bottles precluded conducting a detailed analysis of the entire collection. To reduce the curation load, only whole and embossed or diagnostic partial bottles were catalogued. The catalogued glass collection was subjectively compared to the remainder of the collection and found to be representative of the entire assemblage. This is in contrast to experience at other, disturbed archaeological sites, where collectors have removed a substantial portion of the diagnostic whole bottles prior to systematic excavation. The difference can be attributed to the early sealing and excellent preservation of the deposits addressed by this report. Attributes and quantities of miscellaneous shards and non-diagnostic bottle fragments were recorded on forms prior to discard of those materials. The following observations are based on the catalogued collection and a record of redundant and discarded partial examples (e.g., although 70 examples of Dr. Hostetter's Stomach Bitters bottles were catalogued, many more fragments were recognized, recorded, and discarded).

Catalogued bottles (and portions thereof) were identified by product and maker, the bottle manufacturer, and manufacturing technology, to the extent possible for each example. Beginning and ending dates were recorded for each of the identified categories; these dates frequently overlap to some degree, providing a shorter interval during which production must have occurred. This information was entered in a computer data base to allow easy grouping by provenience and type of product. A fourth dating category was created to ease temporal comparisons within and between proveniences. This is the composite date which appears in tables in the report. The composite date is computed by consolidating product, bottle manufacturer, and technology dates. For example: a product mark for Horlick's Malted Milk was identified as occurring after 1883, the bottle which contained the mark was made by Ihmsen Glass Company between 1870 and 1895, and the bottle exhibits mold marks identifying (semi)automatic bottle machine manufacture which began in 1881; the composite date for this bottle is 1883-1895.

Most bottle technology dates represent approximate or relative periods of use. Hand-applied [HA] bottle finishes, for example,



generally preceded hand-tooled finishes, but there is no clear distinction between the periods of their use, and some hand-applied finishes can be found in collections dating to ca 1900. Because the relatively large sample of bottle glass includes a high percentage of product and bottle manufacturer marks which provide absolute dates, only three of the manufacturing technology date periods have been used with this collection. Clear sun-colored amethyst glass is generally considered to have been introduced ca 1880, and to have fallen out of use by 1916, when the manganese supply was interrupted by World War I. This is a readily recognizable attribute and useful for dating purposes although some caution must be used as many examples have been recorded in collections dating to the early 1930s.

The automatic bottle machine provides a clear beginning date which is well documented by patents and Owens Bottle Company records. Some disagreement exists, however, and beginning dates used by archaeologists vary from 1903 to 1906; this report uses 1906 as the beginning date of production for the automatic bottle machine [ABM]. There is also some confusion in identifying bottles manufactured by automatic bottle machines. A commonly used attribute is the presence of mold marks extending to, and over the top of, the bottle, since no mold marks are obscured by hand finishing processes. The problem with this is that semi-automatic bottle machines were used in production beginning in 1881. These machines also produce a finish with intact mold marks that extend to and over the top of the bottle. Therefore, when the bottle base is absent or provides no distinct automatic bottle machine indications (such as a cut-off scar), and the manufacturing technology identification is limited to the bottle finish, the term (semi)automatic bottle machine [(S)ABM] is used and the beginning date is given as 1881. Although the beginning and ending dates for hand-tooled [HT] finishes are approximate, this technology is used here in order to determine whether or not product marks which have been used until recently, or remain in use, represent the intrusion of modern components in the deposits addressed by this report, or possibly the presence of recent deposits. The dates used for hand-tooling techniques are 1870-1920; although approximate, these dates are generally inclusive.

Several of the olive colored ale type bottles exhibit manufacturing scars that suggest a different method of manufacturing than is usually described. The profile of the bottles suggests that they were blown in a three-piece dip mold. A specific specimen (UPT-6651) measures 6.55 cm diameter at the base, and 6.90 cm just below the shoulder. These measurements result from a slight taper, as would be expected from a dip mold. There is a slight bulge at the base of the shoulder where the mold pieces would have joined. The shoulder and neck of the bottle do not exhibit any mold marks, however. The two vertical seams expected if the bottle were blown in a three-piece dip mold have been obliterated, as the bottle was turned in the mold. This is supported by light concentric marks

which appear on the full height of the bottle, and a slight twist in the upper portion of the bottle neck. The bottle finish was applied by hand. These bottles are uniformly well made. The bases range from a shallow dished shape to a moderate conical pushup.

A number of the bottles in the collection exhibit the attributes of turn-mold production, a process introduced ca 1870 and popular during the 1880s and later, continuing in use to about 1920. This process involved applying a lubricant to the mold which allowed the bottle to be rotated inside the mold and thus obliterate seam marks and produce a smooth surface. Concentric rings similar to the marks left during hand-tooling of bottle finishes can frequently be discerned on bottles which have been manufactured in this manner. The process cannot be used when embossing is desired and is therefore usually confined to wine or similar bottle types.

#### Time Line

The following outline was compiled to suggest the setting, atmosphere, and specific events which contributed to the history of Los Angeles and Chinatown. Some are intended to recreate the developments on and around this specific parcel, and others may help to establish the human context which conditioned the Chinese settlement and the host community's response to it. Among the many sources for these nuggets are Thompson and West (1880), Newmark (1930), and the Steve Harvey columns "Only in LA" in *The Los Angeles Times*.

Year	Event
1850s	The <i>zanjero</i> (ditchtender) was the highest paid Los Angeles official, earning \$1200 per year.
1851	First Los Angeles newspaper, <i>The Star</i> , two pages in English and two pages in Spanish.
1852	First brickyard in Los Angeles founded by Capt. Jesse D. Hunter; Joseph Mullally founded the second one in 1854.
1854	Two Frenchmen open the first tannery, on the corner of Aliso and Alameda.
1855	First large land sale in the city: Jean Louis Sansevaine purchases the vineyard, cellars, and enterprise of his uncle, Louis Vignes, for \$42,000; first shipment of wine from the county to New York in 1856.
1856	Sisters of Charity opened a school, orphan asylum, and later a seminary at the southeast corner of Alameda and Macy, in an imported frame house.

# MTA LIBRARY

- 1864 Earliest known Los Angeles embossed bottle: "M. Keller California Wine Bitters."
- 1865 W. H. Perry awarded a franchise for lighting the city streets by gas.
- 1866 Pershing Square first declared an official city park, surrounded by picket fence to keep out cattle and horses.
- 1868 First two banks in Los Angeles.
- 1868 Los Angeles City Water Company received franchise; began to replace old zanjias and horse-cart deliveries with wooden pipes and reservoirs.
- 1869 Railroad depot built at southwest corner of Alameda and Commercial Streets, to serve the line between Los Angeles and Wilmington.
- 1869 Pico House and Merced Theater built in El Pueblo.
- 1870 There were 110 saloons in the pueblo, one for every 50 residents. (Today, one bar per 800 residents.)
- 1870 Houses in Los Angeles numbered by City Council.
- 1871 Machine-manufactured ice first went on sale in the city.
- 1871 19 Chinese killed in night of rioting at El Pueblo.
- 1872 First Los Angeles City Directory.
- 1872 First fire engine brought to Los Angeles, a 2nd class steamer.
- 1873 High school and Los Angeles Public Library constructed.
- 1874 First street railway, 2.5 miles long.
- 1874 Exploratory boring for oil began in the mountains around San Fernando.
- 1875 Joss House in the Pueblo demolished.
- 1876 Southern Pacific Railroad reaches Los Angeles.
- 1877 First kindergarten established, by Caroline Severance.
- 1877 Evergreen Cemetery laid out.
- 1880 University of Southern California founded.

- 1881 *Los Angeles Times* begins publication.
- 1882 Chinese Exclusion Act passed.
- 1882 *Los Angeles Times* publishes first illustration in a news story.
- 1882 First seven electric street lights turned on, Dec. 30; 36 masts installed by 1886.
- 1882 First Los Angeles telephone directory, with 90 assigned numbers. Evergreen Cemetery was No. 69.
- 1882 The gas street lights were replaced by electricity.
- 1883 Worried pedestrians requested City Council to enact a law requiring bells on speeding bicycles. Ralphs Grocery founded.
- 1884 Southern Pacific operates out of River Station; at Arcade Station 1888-1914; and Central Station, 1914-1939.
- 1885 Santa Fe Railroad enters Los Angeles.
- 1885- Chinese boycott promoted by Los Angeles Trades & Labor  
1886 Council, Anti-Chinese Union, and Knights of Labor.
- 1887 Chinese United Methodist Church at 204 Marchessault (until 1893).
- 1888 Eastside Water Company laid 20 miles of pipes, serving Boyle Heights and area north of Aliso Street.
- 1888 First Sears, Roebuck catalogue distributed.
- 1888 Stone monument to deceased Chinese erected in Evergreen Cemetery.
- 1889 First Tournament of Roses parade in Pasadena.
- 1890 Sisters of Charity moved from Macy/Alameda to Boyle Heights.
- 1890 27 women doctors in Los Angeles; no female lawyers. Total of 40 Japanese in the city.
- 1891 First elevator in Los Angeles, in 4-story Nadeau Hotel. Bekins Moving and Storage Company established.
- 1893 Santa Fe Railroad dedicates La Grande Station on Santa Fe Avenue between First and Second Streets.
- 1894 Approximate date of Juan Street Mission School.



- 1894 Bradbury Building completed at 3rd Street and Broadway/Labor Day becomes a national holiday.
- 1895 Fossils discovered at La Brea Tar Pits.
- 1896 Broadway Department Store opened at 4th and Broadway. American premiere of *La Boheme* staged at Los Angeles Theater, 227 S. Spring Street.
- 1897 *Guide to Los Angeles Brothels* distributed during the City's annual fiesta.
- 1897 First golf course in Los Angeles, Pico and Alvarado. First known automobile on Los Angeles streets.
- 1898 Fire destroys 14 Chinese dwellings on Apablaza Street.
- 1901 Angel's Flight inclined railway installed at 3rd and Hill Streets (removed in 1969).
- 1902 Chinese Gospel Mission at 425 Apablaza Street.
- 1905 Chinese soldiers training with the U. S. Army in Los Angeles; marched in Tournament of Roses parade.
- 1906 First motion picture studio in Los Angeles.
- 1907 Bullock's opened at Broadway and 7th Street. First observance of Mother's Day.
- 1908 Philippe's opened on Alameda Street. First taxicab in Los Angeles; fare 30 cents first half-mile, 20 cents each additional 1/4 mile.
- 1909 City reform administration eliminated brothels.
- 1909 First motion picture filmed entirely in Los Angeles; at the rear of Sing Loo Laundry, on Olive Street between 7th and 8th Streets.
- 1910 Los Angeles appoints first policewoman, Alice S. Wells.
- 1912 First gas station in city, at Grand Avenue and Washington Blvd.; gas at 8 cents per gallon. First cafeteria in Los Angeles, Boos Brothers.
- 1913 Automobile Club of Southern California reports that California leads all states in number of autos owned, 1 car per 28 people.
- 1913 Owens Aqueduct opened by William Mulholland.



- 1916 First power pole for overhead lines, in Highland Park area.
- 1920 Female suffrage passes.
- 1923 First neon display in U.S., by auto dealer Earle C. Anthony, at corner of Wilshire and La Brea.
- 1927 Charles Lindbergh flew non-stop from New York to Paris.
- 1928 Los Angeles City Hall completed.
- 1933 Demolition of Chinatown begins on Dec. 23.
- 1937 First MacDonaldis opened, near Pasadena.
- 1938 New Chinatown opened on June 26, built on a vacant Santa Fe railroad yard. The main square was one of the first pedestrian malls in southern California.
- 1939 First train into the new Los Angeles Union Passenger Terminal, May 7.

## 2. HISTORICAL BACKGROUND

by Lynn C. Kronzek

### Citrus Growers turned Vintners: From Aliso to Macy in 1850

The area northeast of San Francisco has become synonymous with American viticulture, but during the nineteenth century, when the industry was in its infancy, southern California promised to be the major center of grape-growing and wine-making. In fact, when 80 residents of San Francisco gathered in their City Hall in 1847 to celebrate their first Thanksgiving in California, the beverage was "Don Luis" wine made in Los Angeles. This city has a viticultural heritage of its own, particularly in the tract of land hedged by Alameda Street on the west, and what became Macy and Aliso to the north and south, respectively.

As early as 1831, there were vineyards on the east side of Alameda Street; Ballesteros had 4 acres in grapes, Luis Vignes, 5 acres, and Maximo Alanis, 5 acres. Juan Ramirez had 5 acres, Apablasa had 2 acres, and other growers in the area "northwest of Aliso Street" were such familiar names as Abila, Sepulveda, and Carillo (Thompson and West 1880:64). Shipping from San Pedro to San Francisco, New York, and on to Europe had begun in the 1850s, and in 1867, Los Angeles had 15 of the 36 distilleries in the county (Ibid.:66).

The growth of the young industry owed much to one man. A Cork County, Ireland, native, Matthew Keller came to Los Angeles in 1850. He opened a small store on the southwest corner of Commercial and Los Angeles Streets, which soon led him to another pursuit: packing and shipping grapes. He then decided to grow his own (*Los Angeles Express*, April 11, 1881) and purchased between 10 and 20 acres of city-owned land bordering on Aliso and Alameda Streets. His empire later spread to present-day Malibu.

Keller's circa 1860 home, located at 726 Alameda, was reputed to be Los Angeles' first brick residential structure (Figure 2.1). Yet, landowning had its price, even then. In 1862, Keller divided the Aliso-facing property into lots, supposedly to insulate his vines from pilferers (Gordon 1933:11).

Matthew Keller was more than only a viticulturalist. The first Californian to raise cotton, he creatively pursued agronomy, buying Central American and Hawaiian orange seeds for southern California cultivation. Keller nevertheless devoted his lands bordering Alameda Street to vines -- approximately 100,000 of them (Salvator 1929:63, 69). He also had long-range plans. The Irish-born entrepreneur sent his son, Henry William Workman Keller, to New York to study German and other formal subjects. The nine-year-old lad then headed for France because his father wanted him to be



**Figure 2.1. Home of Matthew Keller**

(Courtesy of Marian Francis)

fluent in both languages of viticulture (Marian Francis, personal communication 1991).

When Austrian Archduke Ludwig Louis Salvator toured the United States in the 1870s, he noted that Matthew Keller "largely controlled" the vineyards in and around Los Angeles. The "garden ... on Alameda Street...merits mention," wrote the Archduke. Here, Keller's vines yielded "claret, port, white wine, madeira, sherry, and angelica."

To prepare them, he has purchased a complete equipment of presses, distilleries, and miscellaneous equipment. His wines are exported in large quantities and his products have an enviable reputation on the market [Salvator 1929:139].

Keller apparently ordered the first embossed glass beverage bottles used in Los Angeles (Loakes, personal communication 1991). In 1863, and only in that year, he bottled "California Wine Bitters" in a light olive bottle with a push-up base (Wilson and Wilson 1969:18). His use of the name was challenged as a patent infringement, and he discontinued this bottle but continued to sell brandy bitters. His sherry earned special distinction, capturing the silver medal at the Centennial in Philadelphia. Accordingly, his California-based operations brimmed with activity:

The wine and brandy manufactory and cellars are located on the home place, Alameda Street. The machinery has a capacity for crushing fifty tons of grapes in a day, and turns out during the season, 200 gallons of brandy and 1,000 of wine daily....The wine cellars, of which there are two--one 60x60 and the other 50x300--are located on the home place adjoining the works. With all the old stock sold and only the vinegar of 1879 on hand, he still had one hundred thousand gallons of wine in the store [Los Angeles Express 1881].

A civic-minded individual who became fluent in Spanish, Keller briefly served as a Los Angeles City Councilman, "Public Administrator" for the county (1854-1857), and County Supervisor (1864-1865). He was also on the boards of the Pioneer Oil Company and Farmers and Merchants Bank, and vice president of the "Los Angeles Grape-growers' and Wine-makers' Society" in 1866. Keller's death in 1881 prompted an outpouring of tributes:

His robust frame and blond hair, in which scarcely a streak of gray could be detected, gave him the appearance of a man of not over fifty years of age. His friends were frequently in the habit of rallying him on his healthy and youthful appearance, and most of them thought the old gentleman, although past seventy, was good for ten years of life. Universally known in Southern

California, and a favorite with great numbers of our people, the death of this useful citizen and worthy man will cast a pall over a larger circle [Los Angeles Express 1881].

Keller's property was subdivided among heirs, who owned the land until the early 1900s, when the railroad companies battled each other over it.

Directly to the south of Macy Street, lived Benjamin D. (B. D.) Wilson. Another notable pioneer whose name lives on in Mt. Wilson, he shared with Matthew Keller certain ideas about land use: an 1855 map shows Wilson's 7.5 acres to be covered with vineyards. Like Keller, he was a leading agronomist. Wilson demonstrated, for example, that seeding--rather than grafting--was the most effective way of growing orange trees. His Macy-Alameda property was dwarfed by his other holdings, including as many as 200,000 vines in San Gabriel (Salvator 1929:63,69).

Wilson had civic interests, too, being one of the earliest and most vocal advocates for urban development and railway expansion. Speaking to a group of 400 citizens at the county courthouse in 1872, he warned that, "the Southern Pacific has the line of survey... laid down through our city, but being 50 miles shorter direct to San Bernardino (via Cajon Pass), it may prefer to leave us without calling" (Michael Jarel, personal communication 1991). City and county subsidies subsequently enticed the Southern Pacific and, ironically, the company later purchased what had been Wilson's Macy Street property.

Local viticulture continued even during the era of railway acquisition. East of Wilson's property and what was called the Avila estate, Ballesteros Vineyards flourished. A February, 1939 photograph captured the Padre Vineyard Company, across the Alameda-Macy intersection from the new Union Station.

Wilson's attachment to the neighborhood appeared less enduring than that of other local vintners, however; he left shortly after the 1855 map was rendered, selling the parcel to the Sisters of Charity for \$8000 about 1856 (Gordon 1922:18). It is not clear whether it was Wilson or the Sisters who caused a large wood frame house to be shipped around Cape Horn to Los Angeles (Figure 2.2). A caption on Photo #1-78 in the collection of the Seaver Center attributes the structure to Wilson, but Newmark reported that the Sisters sent to New York for the house. He added the detail that once it arrived, nobody could assemble the structure, even though the parts were numbered, and the nuns had to send back to the East for a carpenter to complete the job (1930:203).

According to the early Los Angeles historian Spaulding, this Catholic religious order established its first Los Angeles hospital in an old adobe on upper Main Street during 1853. Three years





**Figure 2.2. Home of the Sisters of Charity in 1856**

(Drawing, Courtesy of Seaver Center for American History Research, #10)

later, the Sisters held a public fundraiser so that they might start a school and orphanage. They moved to the Wilson property in February 1856 (Michael E. Engh, S.J., personal communications 1991).

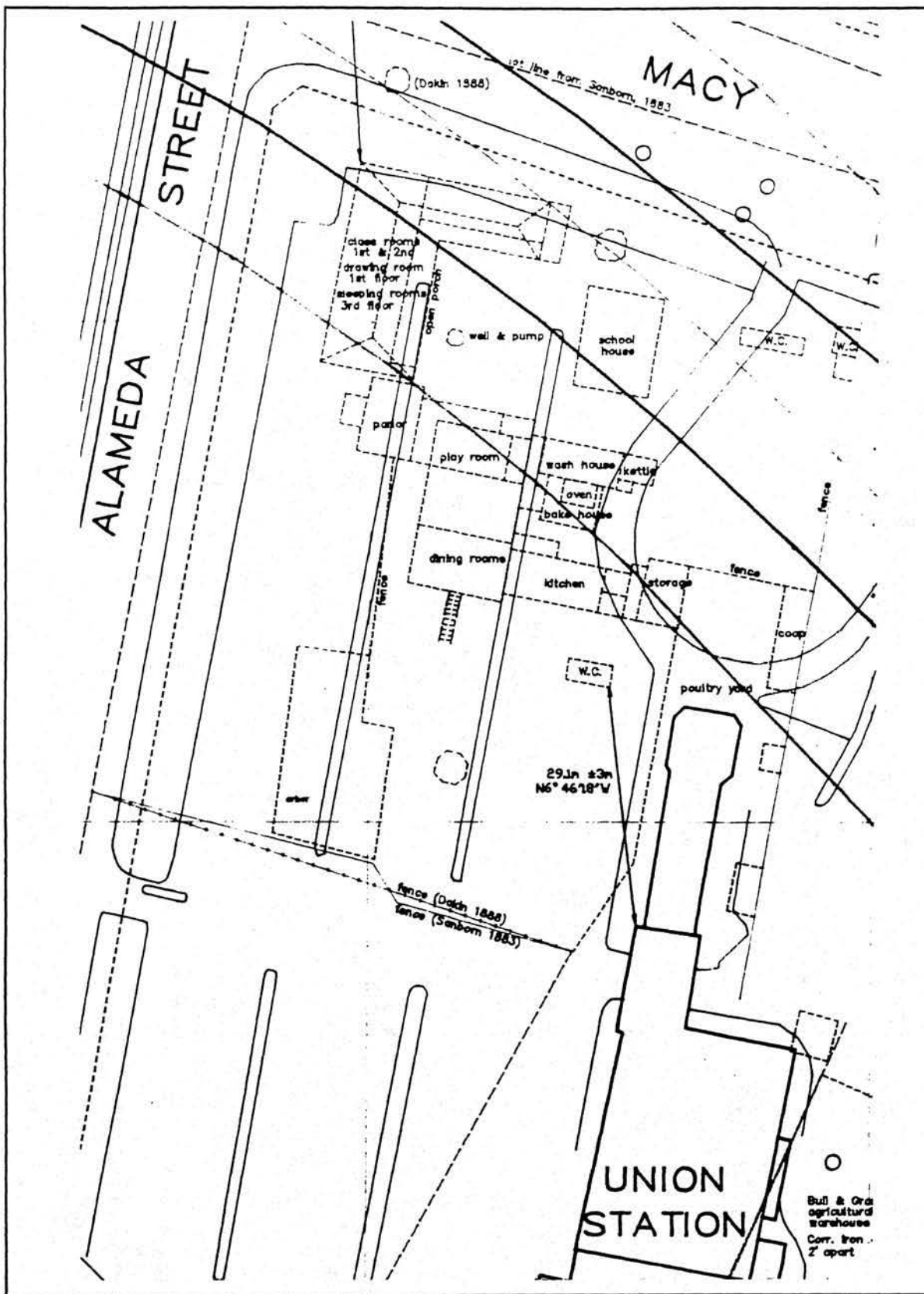
The nuns added to their local holdings by purchasing adjoining lots. A delinquent tax list published in a May, 1861 issue of the *Los Angeles Star* notes that the land contained "a college, two wooden houses, a hospital, 6,000 vines, and 300 fruit trees," the latter undoubtedly remnants from the Wilson era. The Alameda site (Figure 2.3) and the Sisters' infirmary also housed the County hospital from 1858 to 1869 (Michael E. Engh, S.J., personal communications 1991). Other sources mention a seminary for nuns, although it might have been the same institution as the "college." In 1872, the Sisters operated both boarding and day schools for girls offering French, Spanish, and German; tapestry and embroidery; art and music; piano and guitar; "etc." Room, board, and tuition cost \$200 per term of 10 months, with laundry an extra of \$30 (King and Waite 1872:32).

The Southern Pacific found boosters in Benjamin D. Wilson and other pioneers who advocated trains as a catalyst for Los Angeles' growth; public subsidies were forthcoming. In 1873, the railroad extended its tracks along Alameda from the Commercial Street terminus past Macy, to what became known as "Naud Junction" at the intersection with N. Main. Operations commenced early in 1874, as trains chugged 22 miles farther north to San Fernando. Sacramento would be the final destination for the "San Joaquin Route," which continues to serve Los Angeles today (Michael Jarel, personal communications 1991).

Train lines of various sorts also proliferated on the east-west axis. Team tracks were installed sometime after the Southern Pacific purchased its land, probably around 1890-1894. Hedged by loading docks, these lines facilitated the transfer of freight from trains to individual vehicles. The brief route started at Alameda, and ran east along Macy for a few hundred feet, curving through what had been the Sisters of Charity estate. The term "team tracks" hearkens to the time when wagons, pulled by teams of horses, eagerly awaited the arrival of railroad cars--and the tradeworthy merchandise aboard them (Jarel, personal communication 1991).

Narrow gauges also were added to the Macy streetscape, as Henry Huntington's Los Angeles Railway Company laid track for streetcars in 1899. About 11 years after, under the Pacific Electric Company, this became the "Brooklyn Avenue Route" and, later on, the "B Line" (Kielty, personal communication 1991).

Indeed, the Sisters of Charity had lost enthusiasm for the location because railroads and commercialism generally were threatening a tranquil, rustic environment. Their presence came to an end in 1890 when the order moved the orphanage to Boyle Heights. The



**Figure 2.3. Sisters of Charity Structures, 1888**  
(Detail, Figure 1.2, rear pocket)

Sisters sold the property to J. M. Griffith for his lumberyard, and the Southern Pacific Railroad ultimately purchased the estate, affirming an already strong local presence. Another factor may have precipitated the move. As Sister Mary Scholastica Logsdon lamented, growing numbers of Chinese posed a "more objectionable feature" (Michael E. Engh, S.J., personal communications 1991). A thriving Chinatown came to dominate the community, specifically the land of Juan Apablasa. Both the archeological excavation and this historical analysis focus on the evolution and culture of what was soon called Apablasa Street.

Little is known about the motivations of Juan Apablasa--when he first came to Los Angeles and why. The 1850 census confirms that he was born in "Chili" (Chile). Apablasa's great-great-grandson, Carlos, cites family legend: the patriarch was supposed to have gone to San Francisco, but a lay-over in Los Angeles convinced him of this area's merits (personal communication 1991).

Juan Apablasa probably leased land prior to purchasing it, and like the Sisters of Charity, added to his original holdings. The former owner, Rosalia Dalton, possessed a "garden" bounded by the properties of Encarcion Sepulveda, Juan Ramirez, and Maria Antonia Pogerion. Ramirez and his descendants retained their parcel for years (an existing street was named after this pioneering family), yet there are no clues about the other owners.

The 1855 map shows Juan Apablasa directly south of B. D. Wilson; perhaps the Chilean had consolidated his holdings quickly. A more solid line of demarcation existed on the opposite end of the parcel, as Matthew Keller laid fence around his vineyards (Superior Court of the State of California No. B15709 1914).

There is evidence that Apablasa, too, cultivated the grape. The 1848 deed to his property reads:

She (Dalton) delivers the place to Juan Apablasa at the rent of half the products and expenses, and when she dies, if it happens after the year 1849, Apablasa will give as the value of the vineyard and appurtenances, \$250, and it will remain his property; but if she wishes payment before to conclude the sale, Apablasa will give to the said Senora one barrel of grape brandy each year during her life [*Los Angeles Express*, ca 1915].

According to 1850 census, "Juana Pablasa" then was a 50-year old farmer married to a California-born woman, Maria, 20 years his junior; they had five children. The "Joaquim Feliz" family also resided on the property. Judging from their ages and places of birth, the adults might have been Maria's siblings.

The 1860 census subsequently reveals that Maria and some of the children had died; another daughter had entered the world; and



head-counters could not be trusted to spell names correctly or know young girls from young boys. At this time, however, the Feliz family no longer appeared to be dwelling on Apablasa land. The Chilean's estate was now valued at \$3950, with personal property amounting to \$200 (considerably more than the initial investment of \$250 or the annual barrel of grape brandy). Apablasa rectified the official spelling of his name; he also apparently held the secret to eternal youth, remaining 50 years old, the same age as on the 1850 census.

A later source indicates that Apablasa may also have been the "village blacksmith" (Gordon 1933:18). Juan Apablasa died in 1863. Son Cayetano, then 16, inherited the land. His two surviving siblings were both younger and female. Estafa probably died, as no further mention is made of her. Candelaria married and, in any event, did not claim the family property.

Cayetano (Figure 2.4) wed Concepcion Carrasco, daughter of Francisco and Concepcion Avila de Carrasco. Avila is an historic Los Angeles name. The city's oldest surviving house, an adobe dating to 1810, was first inhabited by cattle rancher Francisco Avila. Another branch of the family purchased land to the immediate east of B. D. Wilson; a city street still bears testimony to this legacy. Given the close proximity and conditions which impeded long distance romances during the 1860s and 1870s, it is probable that Concepcion Apablasa indeed descended from the historic Avilas.

Cayetano died in approximately 1889 at the age of 42. He nevertheless gave Apablasa Street much of the physical character that it would retain. First, there was the family homestead. One article credits the unassuming house as being Los Angeles' oldest wooden structure (Figure 2.5). It was said to have been built by the patriarch, Juan; and located "ten feet from the spot where the [Union Station] terminal's main entrance will be" (*Los Angeles Times*, December 23, 1933 [I]: 1). Another clipping is more specific, placing the residence on Juan Street (Carlos Apablasa collection, 1933 article, not dated).

Although these descriptions imply an "east of Alameda" location, several historic maps suggest instead that Juan Apablasa built his home to the west, near the Plaza. Other doubts exist about the date of construction. Descendant Carlos Apablasa is reasonably sure that the building was erected on the Apablasa tract during Cayetano's lifetime--perhaps before young Cayetano, Juan (John), Maria (Mary), Conchita, Lara, Candelaria, and Benjamin were born.

The names of the youngsters were perpetuated until Union Station was superimposed on the old streets. An 1889 Dakin map reveals the main thoroughfare, Apablasa, intersected by Cayetano Alley and John and Benjamin Streets. Ten years later, Los Angeles City Ordinance 5834 officially set boundaries for what had actually been little



**Figure 2.4. Cayetano Apablaza, Sr.**

(Courtesy, Seaver Center for Western History Research, #3866)



**Figure 2.5. Home of Juan Apablasa, Chinatown, 1930s**  
(Courtesy, Regional History Center, University of Southern California)



more than private footpaths; the County assessor's map of 1904 shows the entire tract owned by Concepcion A. de Sepulveda, and subdivided into parcels along the lines of Mary, Cayetano, Juan, Apablasa, Benjamin, and Concha Streets. The street name is given as "Apple Blossom" on one historical map, either accidentally or in an attempt at Anglicization.

Upon Cayetano Senior's death, Concepcion married Ildefonse Sepulveda, scion of another family whose name is intertwined with Los Angeles history. The Apablasa children joined their mother at her new home at 537 S. Grand, where the Checkers (previously Mayflower) Hotel now stands. The family's departure may have accelerated the expansion of Chinatown to the east side of Alameda Street.

### **Toward An Expanded Chinatown**

Like the other Argonauts, the Chinese were drawn to California by Gold Rush opportunities, an incentive reinforced by the prevailing political and economic conditions in China (McDannold 1973:22). Then, too, the federal government became eager to develop its vast, unexploited Western acreage. A larger labor pool was needed, and in 1868, the United States and China signed the Burlingame Treaty, encouraging the flow of immigrants.

Some of these newcomers sought to unearth their share of the wealth; others realized that they could make a living by providing services. Chinese cooks and launderers entered their respective fields because they could capitalize on a shortage: there were relatively few women to perform domestic duties in unsettled California. Especially after the readily accessible deposits of placer gold became depleted, and pressure to exclude them from the mines increased, the Chinese sought other livelihoods. Wage work in agriculture or railroad construction was one avenue; another was offered by laundries or small shops which required little capital.

Los Angeles claimed few Chinese residents until about 1870 (Table 2.1). The 1850 census counted only two men, both house servants living in what was then "center city," the area immediately surrounding the Plaza. Within the next 10 years several more entered Los Angeles; all were laborers, mostly laundry workers. The first Chinese businessman, an herbalist, opened his shop in 1861. Soon the newcomers established a presence here. In the late 1860s, laborers were brought in to build a wagon road near Newhall, and others arrived as employment in railroad construction came to an end. By 1880, more than half dwelled in a narrow street south of the Plaza. The former neighborhood of Mexican-Americans, Calle de Negros, was then called Negro (or "Nigger") Alley, a name that was both a misnomer and derogatory.



The Chinese influx to Los Angeles owes to several occurrences. The end of the Gold Rush and changing economic conditions had caused a certain amount of displacement, and immigrants scattered to find other living situations. Fraternal organizations within San Francisco's well-established and overcrowded Chinatown even recommended that some of their countrymen relocate to Los Angeles; a small delegation arrived in 1866 (MacDannold 1973:32). Many of the Chinese had worked on the railroad. When the Central Pacific transcontinental railroad was completed in 1869 and the Southern Pacific in 1876, Los Angeles was linked to the rest of the country, leading to the boomtown era beginning in the 1880s; at the same time, however, thousands of Chinese lost their employment and flocked to the cities.

Boom-town Los Angeles would have been an attractive destination. Some of the immigrants conveyed economic promise to their poverty-stricken relatives in China, and more came here. Still, Los Angeles might have been considered a temporary residence. Burial practices, for example, included shipment of the bones to China, where decedents often wished to return.

Table 2.1

Chinese Population in the City of Los Angeles  
As a Percentage of the Total (1880-1940)

<u>YEAR</u>	<u>Chinese Pop.</u> <u>L.A. City</u>	<u>Total Pop.</u> <u>L.A. City</u>	<u>Percentage</u> <u>Chinese</u>
1860	14	4,385	0.3
1870	172	5,728	3.0
1880	605	11,183	5.4
1890	1,871	50,395	3.7
1900	2,111	102,479	2.1
1910	1,967	319,198	0.6
1920	2,062	576,673	0.4
1930	3,009	1,238,048	0.2
1940	4,736	1,504,277	0.3

Source: Chinese population statistics from McDannold (1973:21); general population data from U. S. Department of Commerce, Bureau of the Census, eighth through sixteenth censuses, 1860-1940.

Longing for the homeland quite possibly was spurred by the anti-Chinese sentiment prevalent throughout California and, indeed, the

nation. A well-known local episode took place on October 24, 1871; because the story has been interpreted many times before, the details need not be repeated. Briefly, two Chinese men were battling over their "rights" to a woman. The dispute attracted armed supporters on both sides and violence erupted. Seeking to intervene, an Anglo officer got caught in the crossfire and died. Shortly thereafter, a mob entered the battleground. The ensuing massacre took 19 Chinese lives and left the community singed and looted.

A number of historians claim that once this bloody melee ended, racial tensions subsided and everyday life in Los Angeles resumed a calm pace. Several events proved this theory to be untrue. Indeed, friction between the Chinese and American working class populations had been building statewide. Some Anglos resented perceived job or commercial competition. Others simply feared what they did not understand: a different culture.

Various municipalities throughout the state attempted to enact poll taxes, commercial license fees, and other methods of limiting Chinese trade and social mobility. This occurred in Los Angeles during 1878, when local officials imposed licensing and regulatory requirements on vegetable peddlers, a trade group overwhelmingly dominated by Chinese. With the support of the Chinese truck farmers, the vendors went on strike and the city soon felt deprived of its fresh produce (Bingham 1942:26).

The efforts to harass, tax, or otherwise regulate the Chinese largely failed at the local level, but they did not end there. As California interests lobbied the federal government for further controls (Bingham 1942:16-20), the first Chinese Exclusion Act was passed in 1882. It suspended most immigration for 10 years and for the first time in U. S. history, defined which classes of immigrants would be admitted. The law was renewed and reinforced in 1892, with the added proviso that the Chinese already residing here must register or face deportation. Ten years later, the act again met with Congressional approval.

Some argue that subsequent racial relations were much more tense in other parts of the state--particularly San Francisco--than in Los Angeles. This may be correct, but it should not minimize the indignities which Chinese Angelenos suffered. Independent Labor Union No. 1 was formed in 1885; its real intentions crystallized when it became known as the Anti-Chinese Union. Collecting 1271 signatures during Los Angeles' Fourth of July parade, it petitioned City Council to expel all Chinese residents. The attempt failed and the group dissolved, but not without imparting its mission to the larger, more powerful Los Angeles Trades and Labor Council (Hager, Kinney, and Kroll 1982:1-6).

This organization subsequently conceived the notion of a Chinese boycott. Even the Knights of Labor, which in other parts of the

country solidified minority and ethnic workers (Evans and Boyte 1986:127), joined the movement.

The Los Angeles Trades and Labor Council organized its grassroots forces into "anti-Chinese ward clubs." By May 1, 1886--the May Day holiday established to honor the working class--4000 people had committed themselves to the boycott. Basically, supporters vowed to discontinue all forms of Chinese patronage; fire and replace these immigrant laborers; encourage others to engage in the produce and laundry businesses; and boycott any individual or business conducting commerce with, employing, or renting property to the Chinese. This movement faltered, partially because its demands were excessive and partially--as witnessed through the vegetable peddlers' strike--because the Chinese already may have filled too vital a role in the local economy. Racial hostility was hardly limited to the working class: even civic leaders harbored these attitudes. In November 1901, the Los Angeles City Council received a petition from the San Francisco-based Chinese Exclusion Society. "Members of municipal legislative bodies," it was explained, "are ex-officio members of the Society"; therefore, five additional persons could be appointed as delegates to an upcoming meeting (Los Angeles City Council Minutes 1901). The underlying motivation was to exert pressure for the renewal of the Chinese Exclusion Act, due to expire in 1902. The discussion was referred to a special committee consisting of the City Council president and two other members. Less than a week after the formal issuance of this "invitation," the ad hoc group did indeed appoint delegates to the Chinese Exclusion Society meeting.

The same hostile racial attitudes help to explain how the Apablasa tract became Chinatown. A blaze consumed the better part of Negro Alley in 1887; at around the same time, a new Chinatown was born to the east of Alameda. Mason (1967:16) suggests that arson may have been involved in the Negro Alley incident, thereby causing dislocation. This is plausible; although displaced railroad workers or gold miners still found their way to Los Angeles seeking employment, immigration from China had tapered off after the Exclusion Act. It is not likely that the rapid growth of Apablasa Street can be attributed solely to demographics and population pressures at the Pueblo.

The removal of Chinatown from its present quarters on "Nigger" alley and on the east side of the Plaza to a section more remote and less obtrusive, is a good fortune which has literally been forced upon Los Angeles. Nobody thought seriously of undertaking such a beneficent work until Col. Bee, the Chinese Consul, came here and set about accomplishing it. Col. Bee is a man of affairs. If he is not over-sanguine as to the results of his negotiations, Chinatown will be removed very shortly. It is "a consummation devoutly to be wished." Undoubtedly the late incendiary fires and the withdrawal of insurance



from the Chinese quarters by the insurance companies have been the most potent influences in securing this quick result. THE TIMES denounced the lawlessness which sought to burn the Chinamen out, but the good results which have unwittingly sprung from evil causes cannot be gainsayed or deprecated. Now Los Angeles street, which has so long been held in suspense, can be put through to a juncture with Alameda street, and an unsightly and noisome quarter of town can be revolutionized. The change cannot come too quickly [*Los Angeles Times* 1887b].

Los Angeles' Chinese community had more than trebled, from 605 in 1880 to 1871 in 1890, while the city's total population grew by even greater proportions. While most of Los Angeles remained unsettled, the density around the Plaza--with its cramped living conditions--fueled already existing tensions. Setting aside the displacement caused by the Negro Alley fire, newcomers of all ethnic origins needed to spread out beyond the city's "settled" borders. And Macy Street had recently been converted from a dirt road to a wide, paved street.

Other factors influenced the growth of this new Chinatown. Although some of the Chinese elected to move southward along San Pedro Street in what became the produce district, this area was relatively open and recently vacated by the Keller, Wilson, and Apablaza families. Adjacent to the railroad tracks and gas works, and bordered by the Los Angeles River, the land had low value and was not attractive to others. In 1884, the river swept away orchards, vineyards, and homes, and "all below Alameda Street" was under water up to several feet deep, depositing mud and debris as far as Main and Spring Streets. The river overflowed its banks again in 1886 (Baxter 1893:77), and in another flood, even washed out the first dam and flutter wheel constructed by the City Water Company (Gordon 1933:18). Furthermore, the hostility discussed above not only imposed barriers to Chinese mobility, but would have encouraged the community to remain cohesive for both physical safety and the maintenance of cultural traditions.

The undeveloped Apablaza tract and environs thus presented an alternative to the crowded Plaza area. There is evidence that the Chinese were no strangers to this land. An undated picture, for example, shows a group of immigrant laborers tending grapes. The photo caption indicates a Los Angeles location, and while impossible to pinpoint, it may have been the tract east of Alameda which was historically a viticultural hub.

A television special about the Chinese in Los Angeles hints at continuing agricultural involvements. Discussing the Apablaza tract under Cayetano's stewardship (1863-1889), the script reads:

Since most of it was used for agriculture, farmers were needed. The Chinese were good with the earth and eager



to get back to it. In Apablasa's fields, they raised beans and other vegetables, winnowed, cut and sacked them. But they were a little more than the mere coolies they would have been in the old country. What they grew here, they also sold. The Chinese vegetable gardener with his shoulder-slung baskets, peddling vegetables door to door was one of the more familiar sites in old Los Angeles [Story 1966].

The Chinese connection to the produce business has been a fact of local history. By 1880, Los Angeles registered 60 vegetable peddlers; 50 were Chinese. By 1894, there were 103 licensed Chinese wagons. It was the congestion of wagons, horses, and stables around Chinatown that led to the creation of a more remote produce market, where the Chinese continued to dominate both the production and distribution of market crops (Yee and Yee 1968:5-7).

One account suggests that at least some Chinese were east of Alameda well before 1887. Marian Francis, granddaughter of Matthew Keller, recalls that her father, William Henry Workman Keller, who died in 1881, made reference to Chinese cooks in his youth. Francis is not certain whether they actually lived on the estate; she believes they may have "commuted" from a relatively short distance.

Matthew Keller's estate was also divided and subdivided. Marian Francis tells the story: her aunts, Carolyn and Alice, attended a convent school in San Jose. Two local boys, the Shaffer brothers, were "just waiting until they (the Keller sisters) graduated." Marriage ensued, and the young men agreed without hesitation to move south and "manage" their brides' "affairs." Francis says that whenever money was needed, the Shaffers just sold more and more of the Keller land. The northern half of the erstwhile estate developed into Marchessault Street which--with Apablasa--became the heart of the new portion of Chinatown (personal communication 1991).

These testimonies indicate that for purposes of either work or residence, the Chinese had crossed Alameda Street from the Plaza prior to the late 1880s. Their presence, however, was limited. Marian Francis, for example, states that the bulk of labor for her grandfather's estate had been provided by Mexican-Americans.

Several factors contributed to the conversion of the Apablasa tract to Chinatown. Primarily, local property owners vacated their land and sold or leased it to more commercially-inclined interests. The Southern Pacific Railway Company dominated the northern third of the Macy-Aliso parcel east of Alameda, and upon Cayetano Apablasa's death and his wife's remarriage, the pioneer family moved to a different area. The centers of population were moving west; commercial enterprises were shifting north, west, and south; the value of the property was depressed by the railroad and gas works;

it was regularly subject to flooding; and the resettlement would help to remove persons and conditions found objectionable around the Plaza. Alameda Street was already an historic and important route of travel which provided a physical, as well as cultural, boundary.

The story of Chinese life in Los Angeles cannot be confined to limited geographic borders. However, this study focuses on Apablasa Street, where the archaeological excavations occurred. To gain true insight into the community, it would be necessary to explore adjacent tracts, the entire parcel east of Alameda Street between Macy and Aliso. This area is henceforth referred to as "Chinatown." Because this neighborhood evolved from the Plaza settlement, Chinese quarters on both sides of Alameda--when viewed together--will be called "Greater Chinatown."

### **The Physical Environment and Infrastructure**

The Los Angeles City Archives contain voluminous records of municipal land acquisitions, ordinances, and various infrastructural developments that require approval from the City Council. Yet, a scan of pre-1930 documents reveals hardly any activities pertaining to Apablasa Street or Chinatown; the implication is that the area generally endured a dearth of municipal services. Nor do Department of Building and Safety records offer insights into Chinatown's early years. Regulations proved virtually non-existent before 1905, and while permits were mandatory afterward, none has been found for Chinatown.

The land was owned by the Apablasa-Sepulveda family into the second decade of the twentieth century and leased to Chinese tenants; the particular terms cannot be readily documented. Although some characteristics of the old Apablasa neighborhood may be reconstructed, a number of issues are open to speculation.

Pinpointing dates of construction remains a complex task. Some Chinese-occupied structures appear to the east of Alameda on an 1883-1888 Dakin map; these might have been built for other purposes or to house earlier farm laborers. A few manufacturing companies and a Chinese theater were scattered in their midst. Sanborn and Dakin maps indicate, however, that much of Chinatown was built during 1888 and 1889 (Figure 2.6).

*Feng shui*, or geomancy, is an influence on Chinese construction and other aspects of life that borrows from the I-Ching and astrology; the practice considers environmental factors (orientation to water sources, etc.) as well as superstitions (designs inviting/foreboding to the spirits). Nora Sterry, principal of the local Macy Street School and a contemporary observer stated that the community was "laid out and the houses...constructed by the Chinese according to their old world ideas" (Sterry 1922:73). In recent interviews, several members of the Chinese Historical Society of

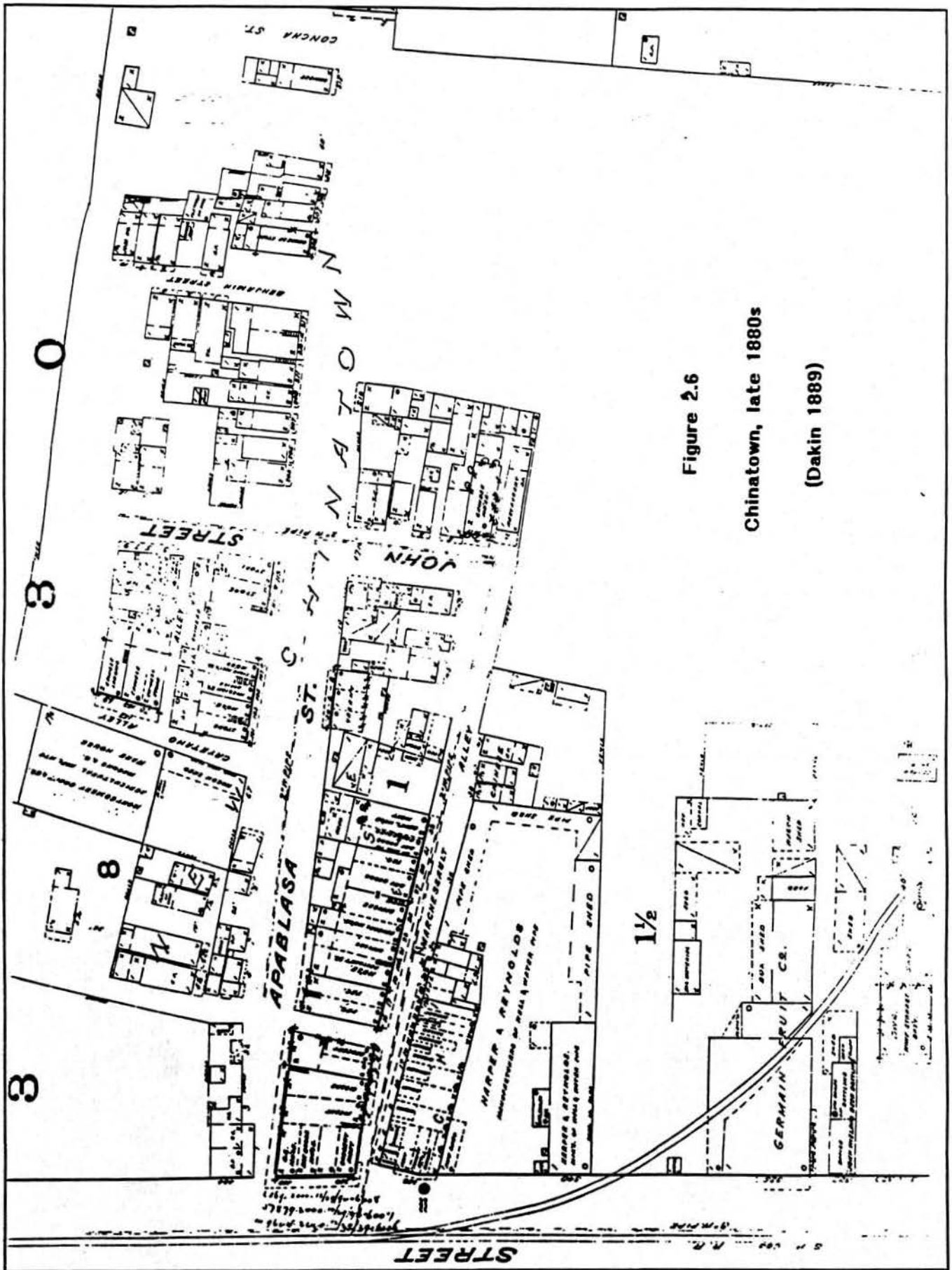


Figure 2.6

Chinatown, late 1880s

(Dakin 1889)



Southern California debated Sterry's assertion, emphasizing that the dwellings may have been constructed for the Chinese, but probably not by them.

The question probably never will be resolved. On a very basic level, *feng shui* encourages "retrofitting," largely through furnishings and special features. If a dwelling is not in harmony with spiritual and environmental elements in its original construction, it can be realigned with ritual or talismans. Then, too, the astrological context of *feng shui* implies that personal characteristics--residents' birthdates, for example--must figure into the equation (Loh 1991). Certain aspects of *feng shui* were certainly not observed; some of the traditions maintain that buildings should face the south, town plans and dwellings should be square, and blocks should be aligned on a north-south axis. Without historical and chronological context, it would be difficult to measure the influence of these traditions. At the Plaza, for example, the Chinese moved into the adobes vacated by others; east of Alameda Street, the structures were built on vacant land, but by non-Chinese owners.

Nor can one view Chinatown as a homogeneous, planned community; it rose in stages. Several older units were already present when the Chinese crossed Alameda Street from the Plaza. A series of fires during the 1890s destroyed some buildings and prompted new construction. In addition, Louis (1931:15) asserts that, "residents leased the land and rebuilt the houses with better materials." And while restrictive laws prevented Chinese property ownership, at least one exception was found. The County Assessor's office contains a deed, dated January 8, 1902, to a lot on 317-319 Apablasa Street (see below): Concepcion and Ildefonso Sepulveda purchased the property from a Chinese man, Ching Wing, for one dollar.

Despite the difficulties of dating construction, some generalizations can be made. The earlier dwellings, for example, were small, wooden hovels, jammed closely together and lacking proper ventilation (Figure 2.7). If the Chinatown of more recent memory was brick, it at least partially owed to conflagration. Sterry emphasizes that cooking took place in cramped quarters, with ovens often wedged in between wooden sleeping bunks. Furthermore:

Many of the building have flimsy wooden porches in the rear and wooden sheds, built in some instances of nothing more substantial than packing boxes. On such insecure additions are often located open brick fire places, which ensure a perpetual fire menace [Sterry 1922:71-73].

A report of the Board of Fire Commissioners for the period December 1, 1898-November 30, 1899 noted alarms at 15 Apablasa Street structures. One brick building was destroyed because of its proximity to a row of 13 blazing frame shacks. There is also a record





Figure 2.7. Wooden Dwellings  
(Courtesy, Chinese Historical Society  
of Southern California, 7S-02/35)

of a fire consuming two other properties. Whatever the case, the wooden hovels eventually fell to more durable construction, and Chinatown acquired its distinctive look (Figure 2.8):

One of the most striking points in viewing Chinatown is its bright color. The houses are for the most part of red brick, built flush with the street, two stories in height and offering a surface unbroken by any apparent division between properties. The windows are small and are usually barred or covered with solid wooden shutters. Here and there are wooden balconies ornamented profusely in brilliant hues, yellow, red, and green. Occasionally are window boxes filled with bright flowers. On holidays variegated lanterns are hung on all porches and doorways and gay pennants flutter thick in the air [Sterry 1922:71].

Chinatown's reputation for squalor was due at least partially to municipal neglect. While other local communities enjoyed modern conveniences, residents of Apablaza Street continued to live in the nineteenth century.



**Figure 2.8. 802-806 Juan Street**

(Courtesy, California Historical Society, Los Angeles History Center, #35173 CH)

(Note: photo is mislabeled as Apablaza Street)

Contrasts between the two worlds abound. Los Angeles became the first U.S. city to abandon gas lamps for electric lighting; the new lights were turned on in 1882. A promotional brochure printed by the World's Fair Association, *The Land of Sunshine: Southern California*, boasted about other urban amenities. Circa 1880 Los Angeles stretched roughly 30 square miles, with 100 miles graded and graveled, 11 miles paved, and 90 miles of sidewalks set in cement (Brook 1893:63).

Chinatown waited for these improvements. Testimony from a 1913 court case hinted that street lights, sidewalks, and curbs had been installed just recently. And while the "common council" in 1875 resolved to grade the section of Aliso Street running from Alameda to the Los Angeles River (*Los Angeles Herald* 1875b), contemporary photographs show paved roads only starting to appear in Chinatown during the 1920s. Previously, the community's thoroughfares were deeply rutted and dusty.

In a relative way, the neighborhood was more developed before the Chinese arrived. *Zanjas* had been the first "utility" to benefit the Apablaza tract. Remnants of the Californio era, these irrigation ditches--several miles in length--spread water via a "crude system of wooden and iron pipes" (Board of Water Commissioners 1902:4). One channel, the Zanja Madre, meandered along the west side of Alameda Street; another, Zanja 2, flowed between latter-day Chinatown and the Los Angeles River (Los Angeles Bureau of Engineering 1884:map #5535). The city's earliest ice factory, situated at the corner of Apablaza and Alameda, capitalized on its location by extracting power from Zanja 2 (Gordon 1933:18). More importantly, however, it was through this rather primitive, though obviously viable, irrigation system that the Wilson, Apablaza, and Keller lands bore harvest.

The Los Angeles City Water Company, predecessor to today's Department of Water and Power, was formed in 1868, its goal to convert the zanja system into modern "water works." The company soon purchased land and established its first service center at the corner of Alameda and Marchessault. Later designated as the "Old Office" (Board of Water Commissioners 1906:47), this building may have been abandoned by 1906.

The central part of the city, including Chinese quarters, claimed a very dense population and, consequently, the need for diverse utilities. A gas plant stood two blocks to the east of Chinatown. Along with the railroads, it was to "pollute the air with soot" (Sterry 1922:70). Indeed, some utility companies might have been drawn to Chinatown more for the industrial setting than for any desire to provide community service. Two mains supplied gas to the neighborhood, one running through what appears to have been the central section of Apablaza or Marchessault Street (Bureau of Engineering n.d.:map #5551).



Water and drainage facilities were less abundant. As late as 1914, the area from Macy to Aliso and Alameda to the Ramirez-Lyon triangle had a single drainage "district." A far more common contemporary practice was one per square block (Bureau of Engineering 1914:map #5025).

Similarly, the City of Los Angeles had constructed 2086 flushtanks by 1909. Chinatown possessed none, the closest being located near the Plaza and at Ramirez and Commercial Streets (Bureau of Engineering 1909:map #5625). A water line did run through the community, however; in 1907, 604 feet of six-inch piping were installed on Apablasa from Alameda to east of Juan Street (Board of Water Commissioners 1907:14).

Utility maps, including those cited above, lend insight into why the community may have been underserved: the entire area from Macy to Aliso and Alameda to the Ramirez-Lyon triangle is almost always shown as one huge block. Furthermore, the Apablasa "street history card" housed at the Bureau of Engineering indicates that the main thoroughfare was "private, not dedicated."

Apablasa Street actually was a very crowded, densely settled, urban place. An 1888 map, for example, revealed that the tract had been subdivided into 62 parcels (Bureau of Engineering 1888:map #2182), and the area brimmed with activity.

There are only two streets in Chinatown; they are the only streets with any sort of paving. There are, however, thirteen thoroughfares which are commonly recognized as streets, both by the Chinese and by the postal authorities [Sterry 1922:70].

The "private property" designation probably limited Chinatown's access to city services. Furthermore, Los Angeles cared little about enforcing code violations that pervaded the community. A 1914 report to California Governor Hiram Johnson by the state's Commission of Immigration and Housing studied 252 greater Chinatown apartments, including those on Apablasa and Marchessault Streets. In 133 of these units (53 percent), the toilets were located directly in the kitchens (Commission of Immigration and Housing 1914:264). This layout was undoubtedly cost-effective, with plumbing being directed to only one part of the house; little concern was given to sanitation. Other design elements also posed health problems:

Of the 1,572 rooms investigated, kitchens included, 878 were found totally dark and windowless, lighted only by a dim candle...or gas jet which seemed to enhance the blackness. These rooms, partitioned off from the store in front, are often hidden away behind heavy bolted invisible doors.



The built-in mezzanine-like floors found in almost every house are also dark and even more stuffy than the rooms below. They are reached by steep, narrow, ladder-like stairs, or by ladders which hang on the wall when not in use. The ceilings are sometimes less than four feet high and usually only six feet. Dust, dirt, and filth accumulate here in the darkness and provide breeding places for disease ... As shown by the health records, the deaths from tuberculosis were more numerous than in other sections of this [the Macy Street School] district [Commission of Immigration and Housing 1914:262-263].

Additional problems resulted from the combination of lack of code enforcement and inadequate municipal services or utilities. Apablasa Street was situated in the flat lands, close to the Los Angeles River. With only one drainage district and no flushtanks in the larger area, health hazards were manifold:

In spite of the general cleaning up on account of the Chinese New Year season, the houses were, as a rule, in a bad state of repair, in a filthy condition. The wall paper was generally torn and dirty, sometimes eight layers thick; plaster was broken and falling off in many places from leakage in plumbing; the rough flooring broken and rat eaten.

Cellars were found full of standing water and rubbish. In the rear of one restaurant there was a large, deep hole near the cellar door, filled with several feet of water, and, at the time of investigation, a dead chicken and rotting garbage floating in the water polluted the air throughout the neighborhood....

Little attention seems to be paid by the city officials to the insanitary plumbing conditions that were found. Five instances were noted where the sink was not connected with the sewer at all, and other cases where it was improperly connected. In one case the water from the sink drained into a tin bucket; in another, it drained into a Chinese basket, and the floor underneath was a slimy mass of wet, rotten refuse and vermin; a third sink emptied into a deep hole worn under the flooring. Leaking drain pipes were numerous in both sinks and toilets, making the floors wet and causing them to rot [Commission of Immigration and Housing 1914:263-264].

Housing codes had not been created when Chinatown's wooden hovels rose during the late 1880s or even when brick structures began to replace them at the turn of the century. Some low-cost construction elements were at fault, yet they could have been rectified through enforcement of newly imposed municipal regulations. Inadequate drainage and sewage systems throughout the

community compounded the host of health problems cited above. Why was nothing done to ameliorate the situation? Again, the Commission of Immigration and Housing report lends the most poignant insight:

There seems to be a separate housing standard for the Chinese. Comment on their bad living quarters usually brings forth a remark such as, "yes, conditions are bad, but they are Chinese" [1914:22].

Living under adverse conditions on a tract of land deemed "private property" and practicing a unique culture, the residents of Chinatown continued to remain apart from their fellow Angelenos.

### **The Social and Economic Texture of Chinatown**

Chinatown primarily attracted recent immigrants and laborers, who referred to their new hometown as "Lo Sang"-- , pronounced with a hard "g" at the end. Aggregated census data give a fuller dimension to the long-gone residents of Apablasa, Benjamin, Juan, and Marchessault Streets, and adjacent areas.

The 1900 figures, reflecting the neighborhood at its peak, tallied 602 persons. Of that number, 545 (89 percent) were born in China. Men accounted for 90 percent of the community's population, and their median age hovered at 42 years. The 58 women (10 percent) were considerably younger. Nine were from 0-19 years old, 26 fell into the 20-29 age bracket, and another 13 were between 30-39-- for a median of 26.5 years. An imbalance between men and women was not unusual for a recent immigrant group, nor was it unique even for the American-born population in the early west.

Similarly, many Apablasa residents lacked family ties. Many had wives in China, and only 181 (30 percent) could be identified as household heads, and another 48 (8 percent) were relatives. Some 295 lodgers and 73 boarders, together totalling 61 percent, accounted for the majority.

A few non-Chinese families dwelled in the community in the later years. The 1900 census shows that Apabalasa Street was home to one German, an Irish immigrant, and a Japanese couple (Franklin 1991:5-8). By 1914, greater Chinatown counted 11 Japanese and three Mexican families, and one each Korean, Cuban, Armenian, and "Chinese and American" household (Commission of Immigration and Housing 1914:265).

A long-term Euroamerican resident was so imbued with community (and it with him) that he became unofficial "mayor" during the 1920s and 1930s. Ah Fong, first known as Tom Gubbins, supposedly was the Shanghai-reared scion of a German-Irish marriage. As Chinatown emerged from its relative isolation in the late 1920s, he served as

a conduit to the outside community; Fong/Gubbins even brokered small acting roles for local residents (Henstell 1984:91-92).

Yet, interracial relations generally were few, and not always so positive. A long-forgotten dispute had caused a rift between the Chinese and nearby Mexicans; although many issues were cited, this may have been the primary reason why the Chinese did not send their children to the Macy Street School (Commission of Immigration and Housing 1914:264).

Otherwise, few non-Chinese conducted their lives or businesses from the Apablasa neighborhood. One notable exception was the prostitutes who plied their trade in single-story cubicles along Alameda Street, between the two loci of Chinatown, until about 1910. Although of various extractions, these women primarily were Americans and Europeans (Mason 1967:16). A physician, F.D. Bullard, briefly practiced at 421 Apablasa Street; his name appears only once, in the 1904 *Los Angeles City Directory*.

Thus, non-Chinese added very little to community culture. The residents themselves came from Canton province exclusively, and ancestry had much to do with the social structure. At the top of the organizational hierarchy were the "district" societies, consisting of individuals born in the same region of China. Family associations, however, engaged the local emigre community to a greater extent, with the Wong and Louie societies being among the largest and most influential. Multifamily groupings also existed, arising from the need of the smaller clans to unite in order to influence local events; their ties were based on associations, sometimes mythical, to common ancestors. Some of these groupings were forged in San Francisco through intermarriage, community ties, or close political affiliations.

Los Angeles boasted numerous family and multifamily association "chapters," but the structure was geographically broader and more complex; national headquarters tended to be in San Francisco. Wherever a Chinese community flourished, however, family societies integrated the poor and newcomers into local life, crossing social and class lines. Kim Fong Tom described the way things were in Los Angeles' Chinatown:

In time of emergency and distress, the members can go to their family association for help. They may get a loan directly or indirectly from it. In case of unemployment, the Kung Saw can give a recommendation to its members and sometimes provide them with room and board. In the past, the family association paid the fare for the poor, aged members to go back to China [Tom 1944:34].

The societies proved versatile, hosting social functions and offering insurance, burial arrangements, and other human services.



Often, involvement was greater; bachelors were granted permission to sleep in some of the local headquarters (Tom 1944:34).

A connection also existed between family societies and what might be called trade associations or guilds. McDannold points out that the Louies, for example, focused their commercial energies on agriculture and related pursuits. "Through nepotism there was a tendency for people of the same name to be engaged in the same job" (1973:51). With or without the family ties, trade groups endured, including the Chinese Laundry Alliance, Chinese Restaurant Association, and Chinese Produce Merchants Association; the latter continues today.

Of less benign reputation than the family or multifamily associations were the tongs. In fact, their existence and activities frequently cast aspersion on the entire community. The Chinese word "tong" actually means "hall," or lineage. It implies cousinhood, and even the family associations used the term in their formal nomenclature. The Chew Poy Kuo Tong, for example, embraced members of the Chu clan (McDannold 1973: 52). Associations like these enjoyed a strong, but benign, community presence:

The Wo Kong Tong has one of the most interesting clubhouses on Apablasa street. Great wooden panels swing before the windows, and a small tree casts its interesting tracery upon the ivory white of the old brick walls. One must be a good hunter to get photographs of the wily old men who live there [L'Allemand 1933:13].

The more pejorative generalizations resulted from relatively recent historic circumstances. Because Chinese emigres typically organized their communities very tightly, the tong was a way for small clans to limit the powers of large family societies. The Kwong Duck Tong, founded on the Barbary Coast circa 1870, appears to have been the very first of its type (Tom 1944:35).

Chinatown's tongs were a distinctly American rendition of the original theme:

Unlike the district organizations which restrict membership to persons of certain particular districts, the tongs are opened to any one without drawing a district line. Unlike the family associations, the tongs do not limit membership to those who have the same surname. Unlike the trade organizations, the tongs receive membership from various trades [Tom 1944:35].

They often became associations for those who had lacked old-world status or who would otherwise be disenfranchised from Chinatown's prevailing power structure.



Los Angeles was home to two large tongs: the Apablaza Street-based Bing Kongs and the Hop Sings, who maintained offices near the Plaza. Relations between the two never had been cordial. Stemming from the Chee Kung Tong, a secret political group established in San Francisco in 1853 which called itself a freemason's society for the sake of respectability, the Bing Kongs originated in Los Angeles. They vacated the city for San Francisco early on, and soon became extremely powerful. The organization decided to re-establish a southern California presence during the 1880s. By that time, however, the Hop Sings had gained influence in Los Angeles' Chinatown and did not welcome the intrusion (Bingham 1942:90). Chee Kung would later be raising money in Los Angeles (Figure 2.9), San Francisco, and elsewhere, to support the revolutionary activities of Sun Yat-sen.

So interrelated was the broader Chinese-American community that Los Angeles' strife actually began in San Francisco. There, a Hop Sing sold the beautiful Chinese slave "Queen Helen" to a prominent Bing Kong. The young woman was found to have tuberculosis a short time afterward; meanwhile, half of her original "cost" was outstanding and hotly disputed.

Both societies entered into negotiations, but failure to reach a settlement soon sparked bloodshed. The inter-tong warfare initially hit San Francisco, then Portland and Chicago, later Los Angeles. The first major episode here occurred at the corner of Juan and Apablaza Streets, where America's only Chinese blacksmith kept shop. Two Hop Sing gunmen hid in the store and opened fire on an equal number of Bing Kongs. Thus an era of violent, but sporadic, streetfighting commenced.

Another incident occurred during 1910, with the murder of Chinatown's "mayor," Wong Fong, in San Francisco. This Bing Kong luminary earned his title through mercantile sophistication, accumulated wealth, and community involvement. He had gone north to testify against a Hop Sing hatchetman when slain.

Animosity between the tongs continued to plague Chinatown, although at different, often less violent levels. In 1925, another San Francisco episode rocked Chinese communities throughout the west. Los Angeles Police Chief James E. Davis was determined to intervene. A *Times* article quoted him on his reasons and intentions:

...But the lack of evidence in prosecuting Chinese gunmen was traditional. In most cases it has been impossible to find anyone who would talk. To testify against a tong man means death to any Chinaman...While the tongs exist in this country their members will continue to spread terror and murder through Chinatown. Therefore, the tongs must go. Those who are not American citizens will be deported as undesirable aliens, and those who are



**Figure 2.9. Home of Chee Kong Tong, built 1900, 315½ Apablasa Street**  
(Courtesy, Huntington Library, Pierce 9896, Album 217/125)

captured breaking the laws will pay the penalty by long terms in the penitentiary [Pallen 1925].

Davis's efforts succeeded in part because he devoted resources--patrol officers and undercover agents--to the task, but also because Chinatown wanted to be rid of tong activity (Bingham 1942:96-97). The fraternal tong had a violent history due to fights over the control of anti-social activities, i.e., prostitution, narcotics, and gambling. In fact, the violent sectors probably constituted only a small minority of the community. It is also important to emphasize that Davis' intervention was quite rare.

Most community matters were settled "in-house" by a super organization known as the Chinese Consolidated Benevolent Association which embraced the fraternal tongs, district and family associations, and other societies. The CCBA, as a national organization, was founded in San Francisco prior to 1880 and called the Chung Wah Kung Saw, "meeting hall of the middle kingdom." Membership ideally included every Chinese male, with all associations sending representatives to what became a community governing body. The Los Angeles branch of the CCBA was located in greater Chinatown, on North Los Angeles Street. It boasted spacious and well appointed quarters that were used for many different functions, much like a civic center.

The CCBA's roles were numerous. The association mediated disputes between various organizations or individuals; served as a liaison with the Chinese government, when required by a local citizen; fought against unjust discrimination; and regulated and executed diverse legal/business transactions. The organization was also highly involved in the delivery of social services, running a Chinese language school, and purchasing burial grounds from the old Evergreen Cemetery. Further, if a family association lacked the financial or other resources to look after its members, the CCBA always could be counted on for assistance.

Whereas the CCBA fostered strong attachments to China, the Los Angeles chapter of the Chinese American Citizens' Alliance was organized in 1895 in San Francisco to focus on the political needs of the second generation. Most C. A. C. A. members were American born (or naturalized, after 1943), and English was the group's official language. For economic and cultural reasons, however, the Alliance wanted to make sure that it was considered a part of Chinatown; the organization thus engaged a "Chinese secretary" to communicate with other organizations (Tom 1944:38).

Politically, the C. A. C. A. took a different posture, seeking the advancement of American civil rights and involving itself with electoral affairs. A few of its members served in the U. S. armed forces during World War I, possibly among the first Chinese to do



so. Strangely enough, the group also was known for its musical proclivities:

The band which was organized under the auspices of the Chinese-American Citizens' Alliance practices every Sunday evening from half-past eight to half-past ten o'clock. There are about twenty-five...The director is a Chinese. They play for the churches, funerals, and for the different organizations as they are needed [Louis 1931:22-23].

Beside the C. A. C. A., Chinatown hosted other political groups. The previously-mentioned Chee Kung were associated with the Bing Kong Tong, but their presence is significant in other ways. Their building, located at 315 1/2 Apablasa Street, bore the date 1900, testimony to Chinatown's "revitalization," when brick structures replaced wooden ones. Legend also states that Dr. Sun Yat-sen, founder of the Republic of China, came here in 1908 to discuss his republican views with community dignitaries (Cheng, personal communication 1991).

As the revolution unfolded, Chinatown developed different organizations to support the political parties in the homeland. A hall at 346 Apablasa Street served as one secret meeting spot; there, a revolutionary flag replaced the five-colored banner of the Yan Shi Kai administration (Bingham 1942: 124). Chinese soldiers committed to overthrowing the Manchu Dynasty trained with the U. S. Army in the Los Angeles area in the early 1900s and marched in the Rose Parade of 1905 (*Los Angeles Times*, Oct. 30, 1991).

Despite their fervor, the political organizations had less influence over the community as a whole than the C. A. C. A and the Chinese Chamber of Commerce, both of which remain active. Chamber membership included most of the community's male merchants. Especially during the early days, its primary function was to ensure favorable monetary exchange rates between the U. S. and China (McDannold 1973:47). The organization later looked to Los Angeles for broader commercial activities. A 1924 decree served as the rallying cry (Bingham 1942:125):

Whereas, Chinatown has been made to suffer in the past because of the bad name generally applied to this district, the same being no fault of the Chinese residents; be it resolved:

First, that we, the merchants of Chinatown, use every opportunity to induce white people of the city and tourists to visit Chinatown; that we extend to visitors every courtesy on visiting our shops and places of interest.



Second, that we use every opportunity to spread the word that Chinatown is a safe place for women to come to, whether escorted or alone.

Third, that we use every opportunity to suppress rowdyism among the lower class of white people visiting Chinatown....

Fourth, that we extend to Los Angeles an invitation to visit Chinatown on the celebration of the New Year and see for themselves the conditions that prevail here.

Signed,  
Lew Sing Kai, president  
Lew Yeon, vice-president  
Wong Sun Ying, secretary

Beside its public relations value, this statement had another effect: it enabled the Chamber to become the voice of Chinatown during the 1930s, when Union Station threatened the community's existence.

The Chamber also grew less insular in outlook as more individuals graduated from wage employment to become proprietors. The 1900 and 1910 census rolls for Apablasa, Benjamin, Juan, and Marchessault Streets and two alleys bisecting Apablasa dramatically reveal the change in occupations within 10 years. Although the produce business remained Chinatown's primary industry, those residents identified as "farm laborers" declined from 19 to 10 percent during the 10-year period. At the same time, "vegetable peddlers" increased from 21 to 41 percent of the identifiable working population.

The vegetable peddlers were a cross between laborers and "jobbers," first-line businesspeople who conducted their commercial activities door-to-door. Their operations were based in 50 small sheds, jutting out of old, wooden buildings on the east end of Apablasa Street. Conditions were harsh:

The corrals or barns, accommodating from two to three hundred Chinamen, horses and wagons present a peculiar problem to the city. Horses, wagons, Chinamen, and the fruit and vegetables left over from the day's sales, are housed indiscriminately in long sheds and barns; the rooms in which the Chinese live are without windows, light, ventilation, and present the same appearance of filth and disorder as the rooms of the tenements. The flies from the horse stalls and the privies are an ever-present nuisance. In one of these sheds, the horses were

seen drinking out of the same trough in which a Chinaman had placed large bunches of celery to keep it fresh for the next day; a large pile of uncovered manure adjoined the trough. All the unsold vegetables and fruit brought in at the end of each day are kept in these corrals overnight. From these places comes the chief vegetable supply of the city [Commission of Immigration and Housing 1914:264].

The long hours and harsh conditions did, however, forge a communal existence among the vendors. Together, they shared hot meals over a large "community grill" in the center of the vegetable market at 810 Juan Street (*Los Angeles Times*, December 23, 1933:1).

If peddling was a difficult way to earn a living, it may have given rise to easier, more lucrative pursuits. The 1900 census reveals that seven out of a total of 561 people dwelling on or near Apablaza Street (1 percent) had become grocers. By 1910, 22 (8 percent) were so engaged. Since business and residence typically overlapped, many of these commercial establishments were located in the Apablaza neighborhood. The contents of the Yee Sing Chong market on Marchessault Street have been described:

A great brown and white striped awning keeps the direct rays of the sun from the sidewalk array of vegetables, terrapins, snails, Chinese cabbage, long stalks of sugar cane and stacks of rice. Inside, the numerous shelves are literally groaning under the weight of imported foodstuffs: green jars of candied lichee nuts, preserved in their own syrup; containers of the delectable amber plum sauce, without which no good Chinaman will eat roast meat; tinned bamboo shoots, mushrooms, pottery jars of preserved ginger, bean sauce or soeuy sauce - and a thousand and one other interesting delicacies.

About the floor are opened tins of duck preserved in peanut oil, duck eggs imported in chocolate-colored mud, barrels of dried shrimp and pans of the delicious peeled water chestnuts. Strings of flat, dried fish hang from the ceiling. Piles of shredded wood - in reality, seaweed - a choice soup ingredient. Shark fins and dried birds' nests - two of the finest of Chinese epicurean treats [L'Allemand 1933:12].

Wholesaling, too, became a commercial pursuit, although its practitioners were "semi-jobbers," who simultaneously conducted retail operations. Their line of business involved importation of almost 80 demand goods from China: antiques and curios; jewelry; bamboo, rattan, and ivory products; traditional silk, laces, and clothing; canned fish; preserved fruit; tea and coffee; various oils, drugs, spices, and herbs; and other items that were not or could not be manufactured here (Wu 1934:11-14, 35).

Although Los Angeles' Chinese population grew very slowly and remained small in proportion to that of the larger community (Table 2.1), the import figures reached a 1931 peak of \$4,433,800 (Wu 1934:20). This probably owes to several factors. First, during the period immediately before the Depression, some Chinese had attained enough wealth to afford the purchase of luxury goods--antiques, curios, jewelry, etc. Second, the majority of the population had not yet assimilated to the point that they would disregard their traditional food, clothing, and customs generally. Third, small numbers of Angelenos became intrigued with exotic Oriental items:

... you will find tea-pots, the apparent models of those first imported to Europe (such were used in the day of the interesting Mr. Pepys) that have proved very satisfactory to the Chinese tea-drinkers for hundreds of years. Why, pray, should a change be made? There are infinities of tea-cups, all handleless, saucerless; there are brandy-pots with their accompaniment of thimblebowls; there are bracelets and ear- and hair-ornaments and fans and vases and sandalwood-boxes; there are silks and embroideries [Percival 1899:51].

Partly in anticipation of the impending station construction, the Chinese community began to spread out during the 1930s. Yet, as Table 2.2 suggests, wholesalers who catered mostly to basic needs (general goods as opposed to curios and antiques) remained in the heart of Chinatown, on Marchessault Street. Those seeking a broader, perhaps more affluent, client base dispersed. Chinese mercantile goods did not find favor with American consumers until considerably later in the twentieth century, and the tourist industry contributed little until after 1910 (Chen 1940:20).

City and county directories and newspaper advertisements document that the Chinese merchants sold Japanese goods as well, not only to Chinese customers, but in "curio" shops as tourism increased. The Japanese were exporting substantial quantities of ceramics to the United States by 1876, and gradually, these included the less costly table and decorative wares available to all customers (Greenwood et al. 1980). The City Directory of 1886-1887 listed six shops offering both Chinese and Japanese goods; these were not in the Apablasa neighborhood, but around the Plaza. Several operated over the years in the old Lugo Adobe. Kan-Koo, opened ca. 1885, promoted itself as a free exhibition, "a place of resort where one can spend an hour among the beautiful articles made by the artful Jap, the strange Chinaman, and curios found in the blue Pacific" (City Directory 1886-1887:273).

While native-born Angelenos did not exactly perceive the Apablasa-Marchessault area to be an exotic shopping center, they gradually developed a taste for the foreign foods served there. Chop suey, a

Table 2.2

Location and Numbers of Chinese Wholesalers,  
By Type of Merchandise Sold

Location	<u>Artwork, Antiques</u>	<u>General</u>	<u>Herbs, Drugs</u>	<u>Total</u>
Marchessault St.		5	1	6
N. Los Angeles St.	1	1	1	3
N. Alameda St.		1		1
S. Flower St.	1			1
S. Main St.			1	1
S. Hill St.			1	1
S. Spring St.			1	1
W. Pico Ave.			1	1
W. Seventh Street	1			1
W. Tenth Street			1	1
<hr/>				
TOTAL	3	7	7	17

Source: Wu Shan (John S. Wu) 1934:33

California-Chinese creation, at first delighted American palates. Yet, the dining experience could become more diverse and sophisticated:

There are several Chinese cafes where you can get excellent dinners--if you know how to order. If you ask for chop suey, they know you for a tenderfoot and treat you accordingly. Real Chinese food is delicate and rare; supposed to be tasted rather than eaten, for the number of courses is stupendous. If really to the manner born, you reach into one general dish with your chop-sticks; it is a clean and delicate way to dine. Unless you go in for too much bird's nest soup and century-old eggs, the prices are reasonable. Bird's nest soup is delicious, but any one can have my share of the heirloom hen fruit [Carr 1935:239].



Some Chinese operated ornate, restaurant-lounges, while others leased tiny, dilapidated quarters and served simple fare to a racially-mixed crowd that was not accepted elsewhere. Marchessault Street was Chinatown's restaurant row. Dineries also appeared in non-Chinese neighborhoods by the 1930s (Tom 1944:19).

Despite the fact that Cantonese immigrants survived--and flourished--on hard work and skill, education was thought to be the passport to a better way of life. Learning for its own sake held an important role in the Chinese tradition. The approach to education was two-fold. Chinatown's scions learned English as a vehicle for success in the larger community while also attending Chinese language classes to maintain communications with their kin. The result of so much schooling was a discipline typically well beyond their youthful years:

Their great handicap is that they do not know how to play. This presents one of the hardest problems of the public schools in this section, for the Chinese children stand aloof from the social life of the school and are with the greatest difficulty induced to mingle with children of other races for anything but study.... Most of the Chinese children however attend the mission schools for the first few years or come direct from China at the age of twelve or more. The routine of their daily life outside the public school does not allow for play and they must actually be taught what seems instinctive in other children.

Every boy and nearly every little girl attends Chinese school in addition to regular day school. Within half an hour after the completion of the latter the child must report at Chinese school where he remains until seven or eight o'clock at night with only half an hour off for supper. On Saturday he goes from ten till four and sometimes he goes on Sunday for half a day. He continues to attend through the summer, with no vacation period. These schools teach reading and writing and, as the child progresses, the Classics.... There are at present five of them [mission schools] in Chinatown. One, which has recently opened, is in the nature of an innovation and prides itself on being modern. It recognizes the child's need for recreation and therefore runs from four-thirty to eight-thirty through the week and from ten to four-thirty on Saturday, and in addition a daily recess is allowed. In each school a monthly fee of four dollars is charged.

The mission schools, which are largely attended during the day by the younger children, have night classes for adults. These classes, which have been in existence for nearly half a century, have been of great civic value in

as much as they have taught English to many men [Sterry 1923:326-327].

Christian missions fulfilled a variety of educational needs, serving both adults and children, and treating all students to a dose of Anglo-Christian values. Particularly because the Chinese prized learning, evangelists used the schools as enticements to religion. Chinatown during its heyday boasted eight missions, and the goal of large-scale conversion to Christianity may have been a grand plan for, as Reverend Ng Poon Chew wrote:

Every Sunday afternoon there is a preaching service on a street in Chinatown where all the different missions cooperate. This meeting consists of singing, prayer and preaching, and, of course, the preaching is mostly in the Oriental tongue. The Chinese seem to listen well throughout the service, and seldom any bad feeling is aroused [Chew 1894:103].

Indeed, it was common practice among missionaries to "divide" non-Christian communities among themselves on a territorial basis. While there is no record of such practice in Chinatown, the heavy concentration of church schools and apparently cooperative spirit among them indicates a collective intent.

One of the first Christian institutions to enter the community was the Chinese Presbyterian Church, in 1876, under the leadership of Ira M. Condit. From a mission house near the Plaza, both English and Cantonese were taught. These efforts continued with the development of the Chinese Children's School, 766 Juan Street (near Apablasa), circa 1894. Twenty years later, enrollment figures listed 21 children in the "primary department" and 23 in the "grammar grades" (Commission on Immigration and Housing 1914:264). This government report emphasizes problems with the census enumerations, and perhaps provides a more accurate picture of the families that were present. The 1900 census, for example, listed only nine children between 0-19 years of age. One early account portrays the Chinese Children's School very favorably:

The most interesting and unique place in Chinatown is the kindergarten for Chinese children, maintained by the Presbyterian church. It is situated in a quiet nook, away from the bustling portion of Chinatown. It is tastefully furnished and arranged, and in every respect it is the most pleasant and healthy place. Here gather a dozen or more healthy and active urchins in their quaint dresses, daily [Chew 1894:103].

Poon Chew was not the most unbiased source, however. A tenant at 421 Apablasa Street before a fire consumed the building in 1898, he guided the Chinese Presbyterian Mission, 214 N. San Pedro, during

the late 1890s and early 1900s. The United Presbyterian Mission, possibly a kindred organization, was located at 336 Marchessault.

Poon Chew led a remarkably diverse life. Born in 1866, he emigrated from China at the age of 15 and moved with an uncle from San Francisco to San Jose. The young man worked as a houseboy by day and studied English at night. While showing an early preference toward Methodism, he ultimately became a Presbyterian minister.

Poon Chew arrived in Los Angeles in 1894. During his missionary tenure, he founded *Chung-Sai-Yat-Po*, a Chinese-language weekly that initially reflected Christian perspectives (Figure 2.10). Changes were about to take place, however, as both publisher and paper moved to San Francisco. The journal soon commenced daily operations, becoming the first of its type in the United States (Robinson 1902:33). Poon Chew also revised the contents, adopting more of a community/news orientation; Christian elements eventually disappeared. The editorial board grew more professional, too, with the addition of Professor John Fryer, Chair of Chinese Literature at the University of California, Berkeley.

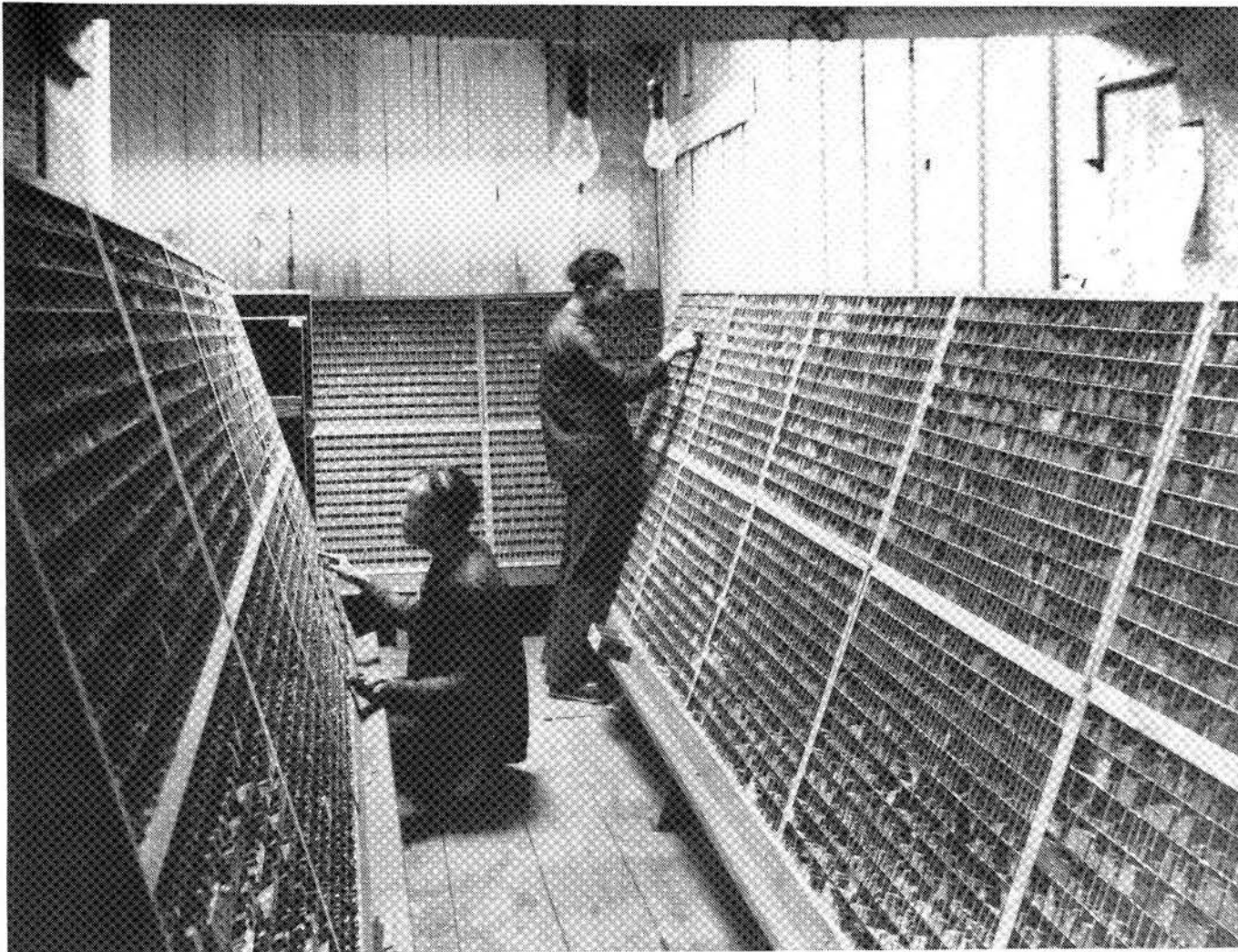
The *Chung-Sai-Yat-Po* outlived Poon Chew by 13 years. It published its last issue in 1946. Yet, the other institution with which Poon Chew was affiliated, the mission, survives to this day as the True Light Chinese Presbyterian Church.

The Methodists were also active. In 1887, an ex-missionary named Mrs. A. A. Birdsall organized local Chinese Christians into a "fellowship." The fledgling group met at 204 Marchessault Street. By 1890 the fellowship became a mission, choosing affiliation with the Methodist Episcopal Church. Several benchmarks occurred during 1893: a move to North Los Angeles Street, where the institution was to remain for more than 50 years, and appointment of a Chinese cleric, Chan Lok Shang. Today's Chinese United Methodist Church is the product of this fine tradition. Other church-schools existed where Union Station now stands. The Chinese Gospel Mission, housed at 425 Apablaza Street, provided an unusually nurturing, relaxed environment:

Classes in the mission vary. Grades disappear. Regulations are elastic as attendance in this factory of private coaching not unlike a country school...

One boy wrestles with fractions, another scratches his head over the complicated verbs of the English language which stick out their tongues at rules. The smaller girls learn to sew and sing psalms interchangeably in Chinese and American until they can do handsprings. Unfortunately, at the same time, they find "American" names more euphonious. Tea of the olive skin becomes Joan; Oi is Rose...





**Figure 2.10. Chinese Printing Office**

(Courtesy, Regional History Center, University of Southern California #7166)



The old gray frame house has two bedrooms in the rear which accommodate young men who are out of work, which happens virtually never. There is a kitchenette where they can prepare their meals, an office or rather a shabby sitting room for the teachers, and the large front room which gives on the rickety porch. Not an imposing structure! [Paule 1926:20].

Next door, at 427 Apablasa Street, the Nazarenes established their local operations. Catholic, Congregational (Figure 2.11), and unaffiliated "Christian" institutions selected sites in greater Chinatown, while the YWCA also made its presence known locally by starting a Chinese school.

Still, the dual functions of education and religion that were so much a part of Chinese mission life began to splinter during the 1920s. Missions, which generally received support from their mother institutions, were replaced by more self-sufficient churches, and more and more children, sometimes the offspring of English-speaking parents, attended the public schools. Further, the Exclusion Act had barred the entry of unskilled Chinese immigrants; newcomers to Los Angeles therefore tended to be either professionals or "refugees" from other American cities who were acculturated to some extent. The traditional purposes of the missions had been supplanted by new demographics and institutions:

Thirty years ago Los Angeles was not equipped as today to present foreign students with the key to the language. If classes were attended at all it was so much Greek in their ears. There was no organized attempt to teach them the rudiments of English speech. They floundered in an unfamiliar medium.

It was then that two women, one of whom, Mrs. Clara Swan, is at present head, founded the mission in Apablasa Street. Newcomers in Chinatown went there; they were helped with their first intelligible words in a language that was gibberish. They were taught, as they are still taught in the mission, by the good old system of ABCs. The city grew. More Chinese came into an already populous quarter, and later the public schools of Los Angeles recognized the need to care for the numbers that arrived if they were to be at all assimilated. Classes strictly for beginners were formed, and latterly have been instructed in the newer system, by sound.

Obviously, the time had come for the mission to slip into a new groove or find oblivion in the company of ghosts which included so many old Los Angeles undertakings [Paule 1926:20].



**Figure 2.11. Congregational Mission School, ca 1895**

(Courtesy, Regional History Center, University of Southern California #7166)

The Chinese Gospel Mission adapted through its tutoring and social service activities, but the same could not be said of other institutions. One survey proclaimed that more than two-thirds of Los Angeles' Chinese youth were enrolled in the public schools by 1929. Integrated into the system, these children enjoyed the same recreational activities as many of their peers: basketball, football, and volleyball. Public facilities soon became available to them, too. With the permission of the Board of Education, Chinese boys honed their athletic skills at the Sentous Junior High and Jefferson High School gymnasiums (Louis 1931:19, 22).

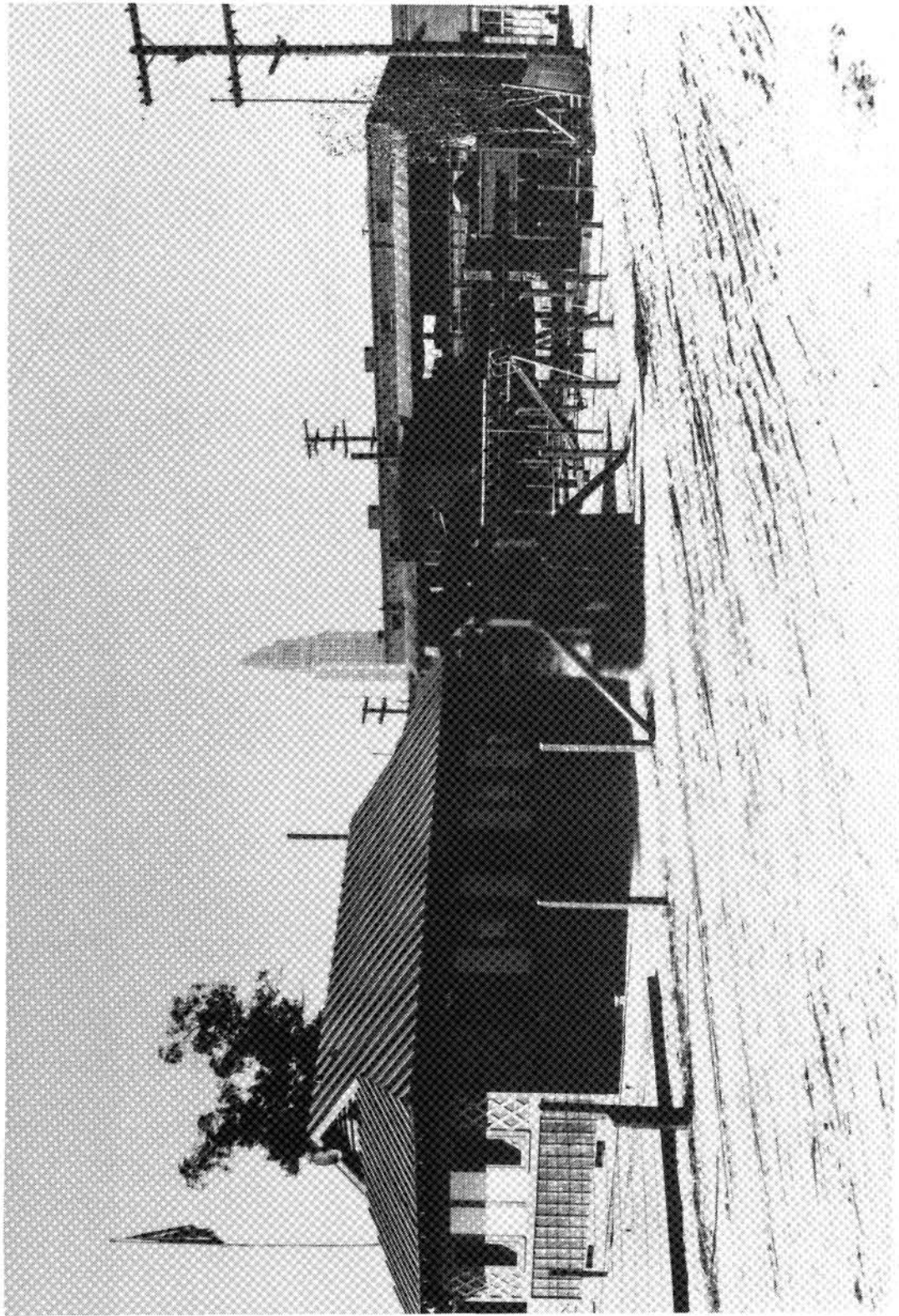
Chinatown also celebrated the creation of one of its own recreational facilities, when the Apablasa Street Playground opened in 1927. Carved out of what had previously been old stables on the south side of the street, the little park contained swings, a slide, and a small clubhouse with restrooms--enough to keep children actively occupied and off the streets. It also boasted a commanding view of Los Angeles' new City Hall (Figure 2.12). The Apablasa Street Playground represented one of the few efforts by the larger community to serve Chinatown. A Macy Street School teacher, Margaret Cope, was a prime initiator in its development; the land itself may have been donated by the Southern Pacific Railroad Company.

Just as educational and recreational functions were being transferred to public authorities, there was doubt about the missions' success at converting the Chinese to Christianity. One source states that First Presbyterian, Congregational, and Methodist churches together counted 800 members, and that an average of 20 percent attended Sunday services in any given week (Louis 1931:21). Writing more than a decade later, Tom indicated a downward shift; combined membership in the Catholic and Protestant churches did not exceed 300 (1944:50).

As many scholars have pointed out, the Chinese could simultaneously practice Taoism, Confucianism, and Buddhism. Ethical and philosophical elements were just as absorbing as purely spiritual considerations, and religious interpretations varied with social class and age. To the residents of Chinatown then, Christianity most likely was an additional, although not exclusive, aspect of life.

The same individual who listened to the Methodist minister's Sunday morning sermon also might have sought solace at a Chinese temple, or joss house. In contrast to the churches, this was an old-world institution. Writing for the *Los Angeles Times*, Agnes Pallen noted five of these structures, "one in the heart of Chinatown, others scattered throughout the city" (1925:II, 2.) The first had been located on Negro Alley and torn down in 1875 (*Los Angeles Herald*, 1875). Ferguson Alley soon boasted a more enduring structure, the Kong Chow Temple (1890), where the josses (deities) represented





**Figure 2.12. The Apablaza Street Playground, 1933**

(Courtesy, Regional History Center, University of Southern California #68)



long-gone Chinese historic figures, individuals who had led exemplary or heroic lives (Lui 1948:75). In the Apablasa neighborhood, a joss house was present on Benjamin Street by 1889. This elaborately decorated structure had a look of permanence, with twice life-size figures of the guardian deities flanking the door. The temple was electrified by 1895 (Engh 1992:Figure 18). The atmosphere of all would have been the same: quiet spots which provided worshippers a few moments of reflection.

Not all facets of Chinese cultural-religious life were so inner-focused. Chinese New Year evoked mass participation and the curiosity of the Anglo community.

In every home, restaurant, store and artshop windows you see the beautiful and fragrant Chinese water lilies which were imported from China for the New Year celebration...if you don't want a lean and unhappy New Year, you must nurse this flower so that it lives for two weeks until the holidays are over. Should the lily die, well, it is most unfortunate for you.

With the beginning of Chinese New Year, January 17 at midnight, the Chinese dragon with 100 feet, also an importation for the occasion, dances before the restaurants and homes of the Chinese, swallowing impure air and breathing good wishes to all. The dragon is the imperial emblem of China, the emblem of imperial power; its eyes glitter, its head sways and its long silk body of deep green hue swings back and forth with grace. Every night for two weeks you will see firecrackers shot off from the balconies of the restaurants in front of the stores. These, too, are believed to have a power to keep away evil spirits.

If you wish to begin the New Year properly, you must pay all your debts and make friends with your enemies. Such is the Chinese code and most religiously observed. Chinese family societies, of which there are a number, gather in restaurants and feast together [Pallen 1925:2].

Syncretism was evident in weddings, too, as early as 1887. When Yee Fong, "a celestial long enough from the Flowery Empire to understand American manners and customs," wished to marry Ah Yon, they dutifully applied for a marriage license at the County Clerk's office and were joined by Justice Tanner with constables as witnesses, but then celebrated the occasion with a daylong parade and traditional "various excesses" (*Los Angeles Times*, July 22, 1887).

This combination of religious/spiritual symbolism and public observance was manifest in life cycle events, especially weddings and funerals. "Earlier Days in Los Angeles," a *Herald Express*

column that reprinted 50-year-old articles for general historic enlightenment, captured an Apablasa Street scene ca. 1909:

Funeral services were held for Louie Chew, one of the most prominent merchants in Chinatown. The funeral, with full Chinese ceremonies, was one of the biggest held in Chinatown in several years, approximately 60 hacks containing friends and business acquaintances forming the funeral cortege. The body was placed beneath a large canopy in front of the Chew residence at 343 Apablasa Street. On another table was placed a large assortment of edibles which are supposed to furnish food for the deceased on his voyage to the "great unknown." Louie Chew, of the Louis Guan Produce Company, was a member of the Chinese Free Masons and their religious service was carried out at the grave. Between the dead man's lips an American 25-cent piece was placed and that with other Chinese coins was supposed to be needed for the expenses for the eternal journey [*Herald Express* 1959: clipping].

If these rituals sometimes proved awe-inspiring, they also were misunderstood and reviled by the general public:

Down on the eastern end of Apablasa Street there is a three-room shack inclosed (sic) with a high board fence. This building economically combines two enterprises. It is known as the Chinese hospital and "Dead House." In two of the miserable rooms the poor, decrepit old Chinese who are so diseased and unable to work that their end is considered near, are allowed to eke out their miserable existence...

In the third room of this building is the "Dead House." When the bones are taken from the graves at the cemetery they are sacked up and carted to the "Dead House." Here they are poured on tables and the old men scrape them clean... The bones are then placed in tin boxes, labeled, and stored away until enough have accumulated to make a shipment to the Flowery Kingdom [*Los Angeles Daily Times* 1902:1].

No other information has been found about the "hospital"; given Chinese attitudes toward ancestors, however, one might question whether families would have totally abandoned their elders to such an institution. Yet, the article quoted above is consistent with descriptions of burial practices elsewhere. Part of the immigration process included arrangements for the return to China of individuals who died abroad. Within the culture, disturbance and moving of skeletal remains was not an emotional problem, and it was not uncommon to do so in the homeland. The practice in California was described in 1861 as follows:

In about five months, little or nothing will be left of the body...There are four companies [in San Francisco]. Each have two or three men, whose business it is travel over the State, making proper calculations for decomposition, and gather up the relics of their late members. They take from the box...the longest bone, say the leg, get a box made of that length, and 18 inches or 2 feet wide and deep...Each bone is...dipped into a bucket of brandy and water. They are then polished with a stiff brush until they almost shine, and are then packed closely in the smaller receptacle. The polishers do not touch the bones with their hands, but handle them very dexterously with two sticks. They are very scrupulous in preserving every bone [Lister and Lister 1989:97-98].

Such transoceanic voyages would decrease as Chinese-born Americans developed stronger attachments to the United States and began to think of this country as their permanent home. By the 1880s, at least, Chinese were using the Evergreen Cemetery in Boyle Heights and observing the annual "feeding of the souls." They came early in the day bearing "all manner of Chinese delicacies, including roast pig, chicken, confectionery, tea, saki...and a great amount of prayer papers to be burned during the ceremonies" (*Los Angeles Times*, August 20, 1888). Two 12-foot high concrete urns and a stone altar had been built by 1888 as a shrine (Figure 2.13). The Chinese would burn incense, paper money, and clothing in the urns for use by the dead in another world, and leave food on the altar. The traditional customs of food offerings, distribution of coins, and burning of clothing and prayers, combined with Christian prayers at least as late as 1922 (*Los Angeles Express*, October 1, 1922).

The cemetery was originally owned by the city with a portion set aside for use by the county as an indigent graveyard. The Record of Interments provided monthly to the Board of Supervisors makes clear that while burial was free to others, each Chinese interment was being charged \$10.00 in 1918, and \$16.00 by 1923. The only exceptions were a few marked "Free," presumably indigents who had died in County Hospital. About 1000 Chinese were buried here, with no grave markers and in the early days, no plot plan other than the records of the Chinese Cemetery Association. Photocopies of the burial/disinterment records back to 1898 show that many individuals were "out" in 1900 and later, presumably for shipment of the remains to China. However, by 1923 the county portion of Evergreen was badly crowded, partly because of the flu epidemic in 1918, and the county approached the Chinese Chamber of Commerce with an offer to reimburse \$2.00 per individual if all bodies were relocated to the new Chinese cemetery on East First Street (Martin 1923). There is no indication that any mass removals resulted then, but in 1937, the Ning Young Chinese Society did disinter a number of individuals (Voss n.d.) between June and August. The area of the shrine was





**Figure 2.13. Chinese Shrine at Evergreen Cemetery, 1900**

(Courtesy, Regional History Center, University of Southern California #7166)



declared a Los Angeles Cultural-Historic monument in 1990, and the Chinese Historical Society of Southern California acquired the parcel in 1992 for preservation and restoration.

The reconstructed burial records for 1898-1902 and 1911-1922 were scanned for demographic data, cause of death, and reinterment information. It is emphasized that only six months were available for 1911 and 1922, and the cause of death was not noted until 1911. From these partial records and with all due concern for errors, a total of 698 names yielded some insight into the community. Of this total, 306 individuals had been removed in the early 1900s, and 226 were relocated in 1937. It seems that females, infants, and victims of homicide or suicide were not commonly disinterred, either for shipment to China or relocation in 1937. Of those moved to the new cemetery, most were the more recent burials; from the records, none of those who died in 1902 or before was relocated (no records presently available for 1903-1910).

In the 420 records after 1911, when the cause of death was cited, and when it can be correlated to modern medical terminology, the following causes precipitated the death:

Tuberculosis	139	Homicide	11
Heart disease	89	Suicide	9
Kidney disease	52	Railroad accident	5
Pneumonia	34	Auto accident	2
Cancer	27	Other accidents	18
Diabetes	9	Childbirth	2
Syphilis	7		
Misc. stomach disease	7		

Among infant or child deaths, there were 10 stillborn, two "inanition" (failure to thrive), and one each from typhoid, tetanus, diphtheria, and whooping cough. A few of the infants were given Euroamerican first names after 1913. Other observations include the presence of a female Chinese physician in 1920, Dr. Margaret Chung.

The causes of death, e. g., tuberculosis, are those commonly seen among overcrowded populations living under less than optimum sanitary conditions, and at a low economic level. Diseases of the gallbladder, liver, "apoplexy," peritonitis, cerebral hemorrhage, and other causes occurred at a lower level, and have not been included in the above tabulation. The suicides were about equally divided between hanging and gunshot. Some of the 18 accidental deaths were a result of fractured skull or other trauma which may have been caused by interpersonal violence. The ages at death (Table 2.3) reflect both the gradual aging of the population and the presence of children.

Table 2.3. Age at Death										
Years/Ages	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	Percent
1898	7.5		5.0	22.5	42.5	22.5				100.00
1899	3.0	3.0	6.0	30.3	27.3	21.2	9.1			99.90
1900	2.1		6.4	38.3	27.6	19.1	6.4			99.90
1901			5.4	18.9	43.2	24.3	5.4			97.20
1902			7.3	19.5	34.1	31.7	7.3			99.90
1911	3.8				30.8	38.5	19.2	7.7		100.00
1912	2.1		10.6	10.6	21.3	38.3	17.0			99.90
1913	8.0	2.0	6.0	12.0	16.0	28.0	26.0			98.00
1914	4.6			7.0	18.6	39.5	23.2	4.6		97.50
1915		3.0	6.0		15.1	33.3	27.3	12.1	3.0	99.80
1916	2.1	6.3		2.1	14.6	27.1	33.3	12.5		98.00
1917	12.5	4.2	2.1		6.3	37.5	31.2	2.1		95.90
1918	9.4	1.5	10.9	4.7	9.4	26.5	29.7	6.3		98.40
1919	4.6		7.0	4.6	11.6	37.2	30.2	7.0		102.20
1920	5.7	5.7		8.6		25.7	25.7	20.0	8.6	100.00
1921	9.1	2.3	9.1	9.1	6.8	22.7	29.5	11.4		100.00
1922	5.9		11.8	5.9	5.9	29.4	35.3	5.9		100.10

A human burial was discovered during construction on July 25, 1989. Damage by non-archaeological personnel inhibited a comprehensive analysis of the remains and any recognition of pathology (Suchey, Appendix III). It is more than likely that not all of the deceased were buried either temporarily or permanently in a dedicated cemetery. Another burial on the premises of Union Passenger Terminal - never examined - is rumored to have been disturbed and collected during operations of Catellus Corporation. It may be that these, and perhaps others, were buried near their homes in anticipation of shipment back to China.

The process and debris of the disinterments obviously offended the public (*Los Angeles Times*, December 11, 1902). The lead paragraphs note a complaint to the health department about a "noisome, death-laden air" wafting from the burial grounds (1902). No matter what the complaint, Chinatown would be blamed for anything that was alien or alienating. The old quarters were so packed with people and activities that observers failed to separate reality from preconceived notions arising out of prejudice. Soon the Chinese would regroup in a new community that proved more acceptable and inviting to the larger public. Yet, the decision to obliterate Apablaza Street, and Old Chinatown generally, was beyond the control of local residents.

## Old Chinatown, New Chinatowns: The End of an Era

The Macy-Alameda community had long been known as a transportation nexus, and this status was greatly elevated in 1913. From that time forward, development issues, planning, and controversies would revolve solely around the train and those with interests in it. It was then that Edgar B. Carrol, Vice President of the Industrial Terminal Railway Company, brought suit against Ildefonso and Concepcion Apablaza de Sepulveda, in an effort to wrest their holdings. The plaintiff claimed that one John Martin had recently purchased the Apablaza tract and given part of the money to five "unknown defendants." Carrol was simply fulfilling John Martin's offer.

In addition to disputes over purchase and acquisition agreements, one major stumbling block persisted: the City of Los Angeles (also named a defendant by Carrol) could have claimed "China Town" as public land. Yet, according to Ildefonso Sepulveda's testimony:

Not anytime...has there been an offer of dedication on the part of these defendants and their predecessor, nor has there been an acceptance of any offer of dedication of the same either by the public or the City of Los Angeles as an agency of the public [Superior Court Case No. 97,717: 1913].

Sepulveda further added that the city collected taxes on the land as though it were private property.

The verdict in Case No. 97,717 was handed down on June 25: Carrol became landowner and, as such, was required to pay Concepcion and Ildefonso Sepulveda the sum of money outstanding from the Martin deal. Concepcion immediately sought to expedite the process by submitting through her attorneys a request to the Los Angeles City Council:

The undersigned petitions you to authorize and direct the City Attorney to waive an appeal to the Supreme Court or the Appellate Court from said decision, so that the same may become final and the litigation be ended. The undersigned is satisfied that the Supreme Court would not in any event change the decision of the lower court and as the undersigned has now a sale on for the said property which cannot be closed without the right of appeal being disposed of, it would work a great hardship on the undersigned if the same be not waived [July 1, 1913].

The Sepulvedas thus wanted to end the dispute and collect their money, but the transaction could not occur unless the city relinquished all claims to the land. This issue proved a bit

muddier than expected. In response to the Sepulveda petition, the Public Works Commission reported:

....that street lights, sidewalks and curbs have been installed and to all appearances are public streets, and we suggest before any action is taken upon said petition, that the entire Council inspect the streets proposed to be vacated, and if...Council should find said streets were unnecessary for use of the public, that said petition be granted [July 29, 1913].

No record of such an inspection was found, and on November 20, 1913, the Los Angeles City Council waived its right to appeal *Carrol vs. Sepulveda*. The fact that the land was "to be vacated" surely meant Chinatown's demise. Yet, an apparent savior entered the picture in 1914, when Lewis F. Hanchett purchased the property for two million dollars, an incredible sum of money by the standards of the day.

At least in his statements to the press, Hanchett envisioned something of a planned community. Current residents and businesspeople could secure long-term leases, enjoying the benefits of a:

...new and greater Chinese colony, picturesque and interesting as was the old Chinatown in its palmiest days but cleaner, more sanitary and modern in every detail than any other Chinatown that has ever been [Bingham 1942:138].

The "Chinese colony" probably was no more than a public relations ploy. Hanchett actually established the Industrial Development and Land Company to rival Carrol's Industrial Terminal Railway Company. Both men vied for the same territory and, specifically, the right to build, own, and operate lucrative freight and railroad facilities. The erstwhile Apablaza and Keller estates, now known as the "Hanchett Tract," switched hands frequently.

Hanchett soon fell on hard times, however. When his true commercial intentions were discovered, the courts threw out his land condemnation suits, arguing that he had not been acting in good faith (Bingham 1942:138). The Industrial Terminal Railway Company reclaimed the Hanchett Tract in 1925. Two years later, county assessor's records show it to have been briefly owned by a different firm. Then, in 1928, the land entered into the possession of the Southern Pacific Rail Road Company. SPRR had obtained the old Sisters of Charity property long before. Now, it consolidated its holdings by acquiring the former Keller and Apablaza estates. With the Union Pacific Railroad Company, SPRR planned for the construction of a terminal on Alameda Street, near Macy.



Chinatown surely seemed doomed when John V. (Juan) and Cayetano, Jr., Apablasa reappeared. The two men were a study in contrasts. A University of Pennsylvania-trained dentist, Cayetano practiced his profession for 50 years, lived quietly on S. Manhattan Place, and died during the early 1960s at the age of 83.

John V. Cayetano, conversely, was a gossip columnist's delight. He married at least five times, depending on whose account one believes, and the inevitable divorces resulted from what a few of his wives described as abusive behavior. Each incident made local headlines. Still, John V. may have held a historic distinction: he claimed that his 1874 birth was the first formally recorded in Los Angeles County. This may have been truth or fiction, for John V. had a way of creating his own legends. While the scribes estimated his estate to be worth \$27 million, his last wife failed to uncover a penny when he died at the age of 75.

In 1924, John V. and Cayetano Apablasa joined in seeking what they believed was their birthright: the ancestral plot in Chinatown, a hotel on Normandie Avenue, property at Sixth and Grand, and other land, collectively worth six million dollars. They alleged that their father had left the property to their mother with the understanding that it be held in trust for them and their siblings. Interestingly, their four sisters did not join the suit and, in fact, were cited as defendants.

John V. and Cayetano seemed to have failed initially. The Superior Court sustained a demurrer without leave to amend, and the case was thrown out. An appeal to the state Supreme Court reversed the decision, however. The Apablasa case appeared on the docket again in 1928, with the defendants claiming that John V. had relinquished his property rights. Concepcion Sepulveda died the following year. The details of the case from that point forward remain sketchy. Whatever the volley of allegations, the Supreme Court approved construction of Union Station on May 19, 1931. Yet, about seven years later, the five surviving offspring of Cayetano, Sr. and Concepcion Apablasa were jointly awarded the returns from the sale of their parents' estate, estimated at \$750,000. This obviously excluded the Alameda-centered homestead, which by then no longer existed.

If 1931 is generally cited as the year for Chinatown's demise, the community had been atrophying for at least the 20 prior years. Old timers talked of a neighborhood that once stretched along both sides of Alameda and numbered--according to various newspaper interviews--anywhere from 5,000 to 15,000 inhabitants. Census data cast grave doubt on these figures, even though immigrant populations have never been tabulated with perfect accuracy. Regardless of the enumerators' counts, the withering of Chinatown certainly was apparent to one *Los Angeles Times* writer:

Today the quarter occupies but a scant block and a half on Apablasa, Marchessault, and Jeannette streets, with a few outlying dwellings and stores--a crumbling reminder of what once was America's second largest Chinese city [L'Allemand 1933:12].

Additionally, the formerly isolated ethnic enclave began to assume more the look of an integrated, innercity hub as the Chinese slowly vacated:

At North Alameda and Marchessault streets we are in the center of the quarter. Traffic roars by; now and then a long freight or passenger train rattles and booms over the intersection, and we find ourselves in that eternal undertone that marks every great city.

Crowds of Chinese and Mexicans, from infants to graybeards, line the benches along the walls. The effervescent chatter of alien tongues is heard on every hand, and how inscrutable are the faces that we look into.

Today, as yesterday, a polyglot mass of humanity flows along these streets--whole Mexican families from smallest ninos to black be-shawled grandmothers; Filipino dandies, negroes, tourists, school children and a few white residents [L'Allemand 1933:12].

The gradual Chinese exodus could be attributed to many, varied factors. First and most obvious, ever since *Carrol vs. Sepulveda*, a number of residents probably doubted the neighborhood's ability to withstand large-scale commercial development. Each ensuing land grab or court case underscored the ultimate verdict, as the railroad terminal began to look more and more inevitable.

To a far lesser extent, Chinatown might also have been the victim of some of its own communal practices. One example was *po-dai*, a real estate transaction ostensibly designed to protect small businesses from rent-gouging. Writing in 1944, Tom evaluated the system and its repercussions.

When a Chinese wants to rent a store which was once occupied by a Chinese, he must pay the former tenant a prohibitive sum...for the so-called "basic property right." If that demand is not met, no Chinese would dare to rent that store. This practice not only hampers the free movement of Chinese stores, but also infringes on the rights of the property owners. The recently remodelled buildings in Old Chinatown [east of Apablasa, near the Plaza] which were vacant for two years were not occupied for this very reason [Tom 1944:31].

While *po-dai* was not the major reason for Chinatown's demise, it certainly added to the process of deterioration. A *Los Angeles Times* writer observed: "Every other home in Chinatown seems a gambling concession; rents per square inch would give Hollywood a jolt" (Paule 1926:20). After operating in Chinatown for a number of years, the *po-dai* system might have rendered some leases so high that only purveyors of vice could readily afford them.

More directly, however, the community withered because it could not hold the second generation Chinese. Kit King Louis focused on this sub-population; after interviewing a number of subjects, he found that "toward 'Chinatown' they have various attitudes which are in general unfavorable" (Louis 1931:109). The intensity of the opinions varied. Those who were trying to secure "outside" jobs and housing sometimes blamed discrimination on the bad images emanating from Chinatown. Another emotional response was embarrassment:

I have not cared much about Chinatown. It seemed such a dingy, dirty place. I went there as little as possible and think I was rather ashamed of it.

Pensive types could view the situation in a historic perspective:

The Chinatown of Los Angeles [near the Plaza] was built more than one hundred years ago. The buildings are very old. It could not help getting dirty and wearing a decayed appearance. But considering everything, it is not so bad as most of the people think. Most of its inhabitants are the older folks with their old-fashioned inheritance which could not be changed in a short time. It is known that it takes two or three generations for a country to change its customs. So all in all the progress the Chinese people have made in Chinatown is very surprising [Louis 1931:109, 113].

It was these "older folks" who clung to their community even after the 1931 verdict had been handed down. In fact, one testimony hints that perhaps they confused the Union Station eviction with the deportation threats resulting from the recent police mandate against illegal tong activity:

But the Chinese are sure now that they are being driven from their homes. They cannot understand why; therefore, they view with suspicion and dark glances the stranger who appears in the quarter. If he has a camera, they quickly go indoors, for many of them fear that they are going to be sent back to China [L'Allemand 1933:13].

In the meantime, all civically-involved parties acknowledged that Chinatown had to be relocated. Building industry representatives submitted various designs to the City Planning Commission, as the



Chinese Chamber of Commerce dispatched an architect to China to conceptualize a new community that would satisfy both residential and commercial needs. Engineer Peter Soo Hoo, the organization's president, also mounted efforts to delay the demolition process.

By the latter part of 1933, everything became definite--with the exception of where the Chinese would go. The *Los Angeles Times* reported: "Formal and official notices had been sent to all inhabitants of the various buildings several weeks ago" (December 23, 1933:9). Some of the residents hesitated. They ignored the warning signs, refusing to move out when the utilities ceased to function or when the pavement was uprooted (Bingham 1942:133).

Demolition commenced at about 9:00 a.m. on December 22, 1933. Whiting-Mead won the contract and, somewhat ironically, placed operations under the direction of a superintendent named R. L. Joss. The first building to go was a children's school located at 401 Apablaza, at the intersection of Juan (Figure 2.14). Soon the remnants of the vegetable market yielded to sledge hammers and axes (*Los Angeles Times*, December 23, 1933:1). The residents, too, succumbed to reality:

Two...Chinese of advanced age, whose wrinkles and shuffle bespoke many years spent in the area, hurried to their small garden and began pulling the vegetables from the ground. All the time their chatter and apparent disgust at the disturbance could be heard near by above the roar of loaded trucks and the smashing blows. Others tossed their few belongings into a modern shopping bag and, with their favorite cooking utensils in hand, slowly plodded from the scene of a quickly wrecked home.

Not a soul stirred in the old vegetable market....All fifty stalls, in which they lived, were vacant. The stable, littered with hay and straw, where they cared for their weary animals after a day of slow driving throughout Los Angeles, was empty. The fire beneath the great grill, under the shed in the center of the inclosed (sic) square, was out; the ashes were cold.

One old, wrinkle-faced former resident, who came to look through faded eyes, explained they [the Chinese] had gone in all directions [*Los Angeles Times* 1933 (II):1, 9].

Quite ironically, the Chinatown that had been so isolated during its heyday departed amid great fanfare. A special parade and formal ceremony occurred on September 22, 1934, to commemorate its passing.

A white dove fluttered skyward from a child's hands. Soaring higher and higher, it dwindled to a tiny speck, and disappeared.





**Figure 2.14. Demolition Begins at 401-403 Apablasa Street**  
(Courtesy, Collection of Carlos Apablasa)

It symbolized the passing of Los Angeles' ancient Chinatown.

This ceremony climaxed an entertainment yesterday afternoon for children of what Countess Karin de Roaldes, mistress of ceremonies, termed "a treasure chest of nations." Boys and girls of twenty-one nationalities joined in the commemoration, held at the new union depot site at Marchessault and Apablasa (sic) streets.

Opening the entertainment at yesterday's commemoration, Countess Emma Leffler de Zaruba, operatic star, sang "The Star-Spangled Banner." Following this the children took part in a "Pageant of all Nations," under the direction of Mrs. Vina Haggerty, 1957 Rodney Drive, chairman of festivities.

Little Chinese girls clothed in delicately embroidered silk vied with Scandinavian and Spanish-American children dressed in the vivid-hued costumes of their native countries [*Los Angeles Times* 1934 (I):3].

Nostalgia prevailed--initially. Particular attention was paid to the old Apablasa home, situated "ten feet from where the terminal's main entrance" would stand. This four-room structure, often cited as the first frame dwelling in the city, was to be "preserved for posterity" by the three railroad companies. Helen A. Lawson, a district agent for the Southern Pacific, announced plans to move the Apablasa abode and turn it into a museum (*Los Angeles Times* 1933 (II):1, 9).

Yet, family members may have sensed that this would not come to fruition. Sometime in 1934, Charles Apablasa, (great-grandson of the patriarch Juan), his wife, and two young children made a final pilgrimage to their ancestral home (Figure 2.15). Indeed, the railroad companies' "museum" would go the way of the Matthew Keller manse, the "first" brick house in the city and another victim of the wrecking ball.

Other issues evaded resolution altogether. On January 9, 1934, two weeks after demolition began, the Los Angeles Municipal Housing Commission approved a plan to relocate Chinatown. George Eastman, a consulting engineer and former Los Angeles Chamber of Commerce president, had submitted blueprints for a one-million dollar residential and commercial development bounded by Ord, Alameda, New High, and Alpine Streets that could become home to 2,500 Chinese. Ultimately deemed too expensive, the plan was scrapped.

Most residents of the Apablasa neighborhood scattered helter-skelter to smaller Chinese enclaves (McDannold 1973:64-65), while others lingered several years after the wrecking commenced, watching their community slowly crumble around them. Peter Soo Hoo

had successfully petitioned Union Terminal engineers for delays, but not a total halt, in the demolition process (Bingham 1942:147). Still, the actual relocation of the community was awaiting a creative solution.

Two competing plans subsequently emerged, and both materialized. China City opened in 1939, the brainchild of Olvera Street developer Christine Sterling. Like its sister Mexican quarter, this community was self-consciously ethnic in a somewhat exaggerated way, with rickshaws and even a "Great Wall" donated by Cecil B. DeMille. China City contained small rental lots and attracted about 50 small shops. It was located between Ord, N. Spring, Macy, and N. Main, and ultimately burned.

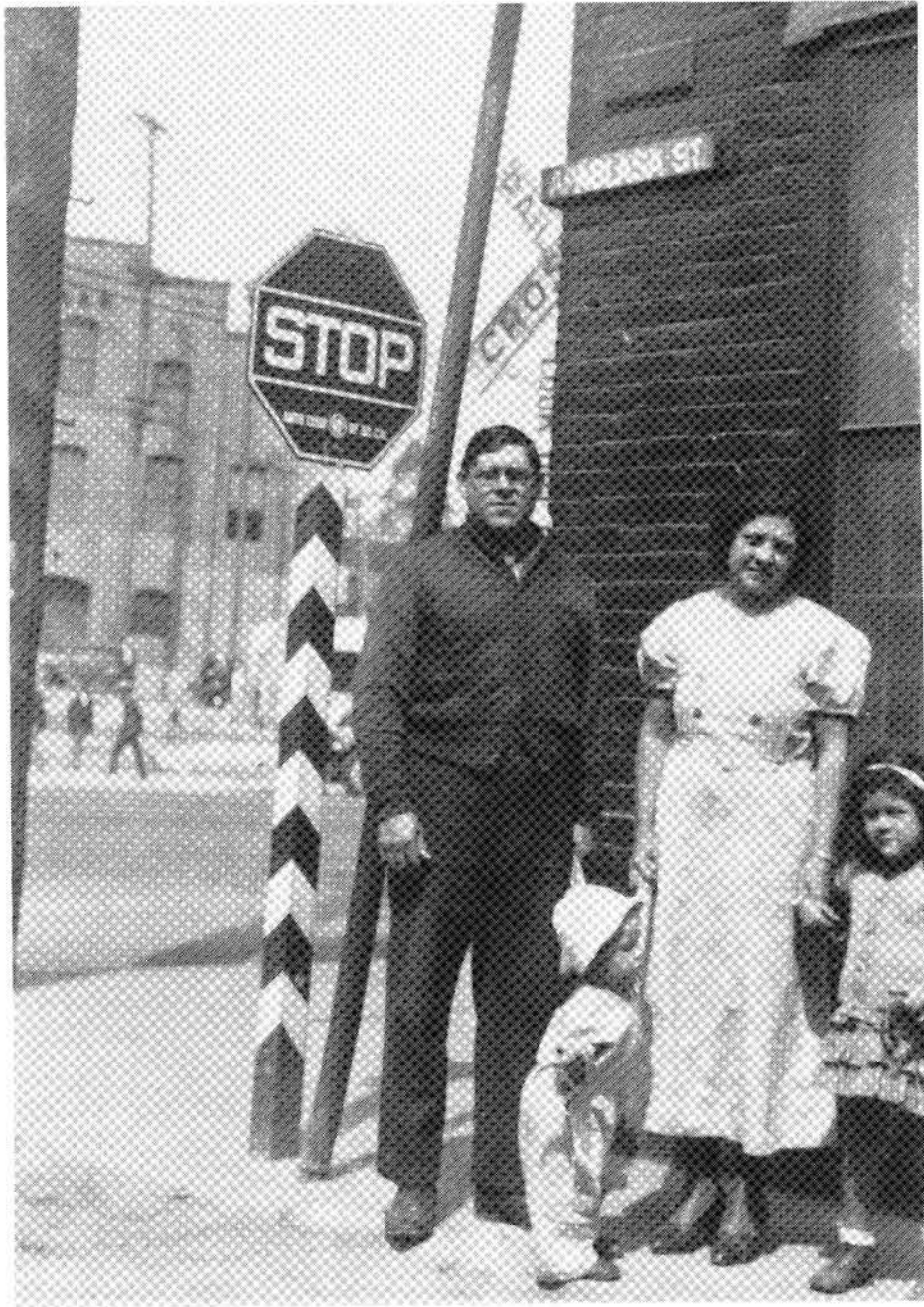
The other development, New Chinatown, had a different history, mission, and aura. It came into being when Peter Soo Hoo discovered that vacant Santa Fe railroad land west of Broadway and north of College Street was for sale. Having dealt with the railroad companies before, he had made valuable contacts and ultimately secured the property for 75 cents a square foot through the assistance of Santa Fe agent Herbert Lapham.

New Chinatown was an exclusively Chinese American development. Peter Soo Hoo, an engineer with the city's Department of Water and Power, and a group of some 28 men and women formed a corporation for its creation about a mile north of the original location. The original shares were \$500. What was one of the earliest pedestrian malls in southern California, and the only one in the country where the property was owned by Chinese Americans, opened on June 1935, with brightly colored buildings and tiled pagoda roofs. The first enterprises were 18 stores and a bean cake factory (*Los Angeles Times* 1988(II):1). The total investment hovered at approximately one million dollars by 1942. New Chinatown welcomed tourists, shoppers, and diners, but continued to serve the social and economic needs of the Chinese. Buildings assumed a clean, contemporary Chinese American appearance, representing the community's savvy founders (Bingham 1942:148-152).

Neither New Chinatown nor China City could be defined solely by business activities, however. Residential units surrounded both commercial districts and despite their disparate histories, the two developments merged into what is now commonly called "Chinatown" (McDannold 1973:107).

Union Station opened on May 7, 1939, with the rumble of Union Pacific, Southern Pacific, and Atchison, Topeka & Santa Fe trains. Hailed as the finest depot on the West Coast, the terminal cost 11 million dollars, 18 percent more than originally anticipated. It also required more than 500,000 cubic yards of land filling (*Railway Age* 1939:768). Seventeen feet below its surface lay the remnants of Apablaza Street.





**Figure 2.15. Final Visit to Apablasa Street**  
**(l. to r.: Charles C., Carlos B., Panchita, and Ernestine Apablasa)**  
(Courtesy, Collection of Carlos B. Apablasa)



Today, Union Station at 54 years of age is a national historic landmark, and Old Chinatown made a second appearance, as crews excavated the site for the Metro Rail rapid transit system. As evidence of the past, Apablasa Street and environs soon will be buried again, maybe forever.

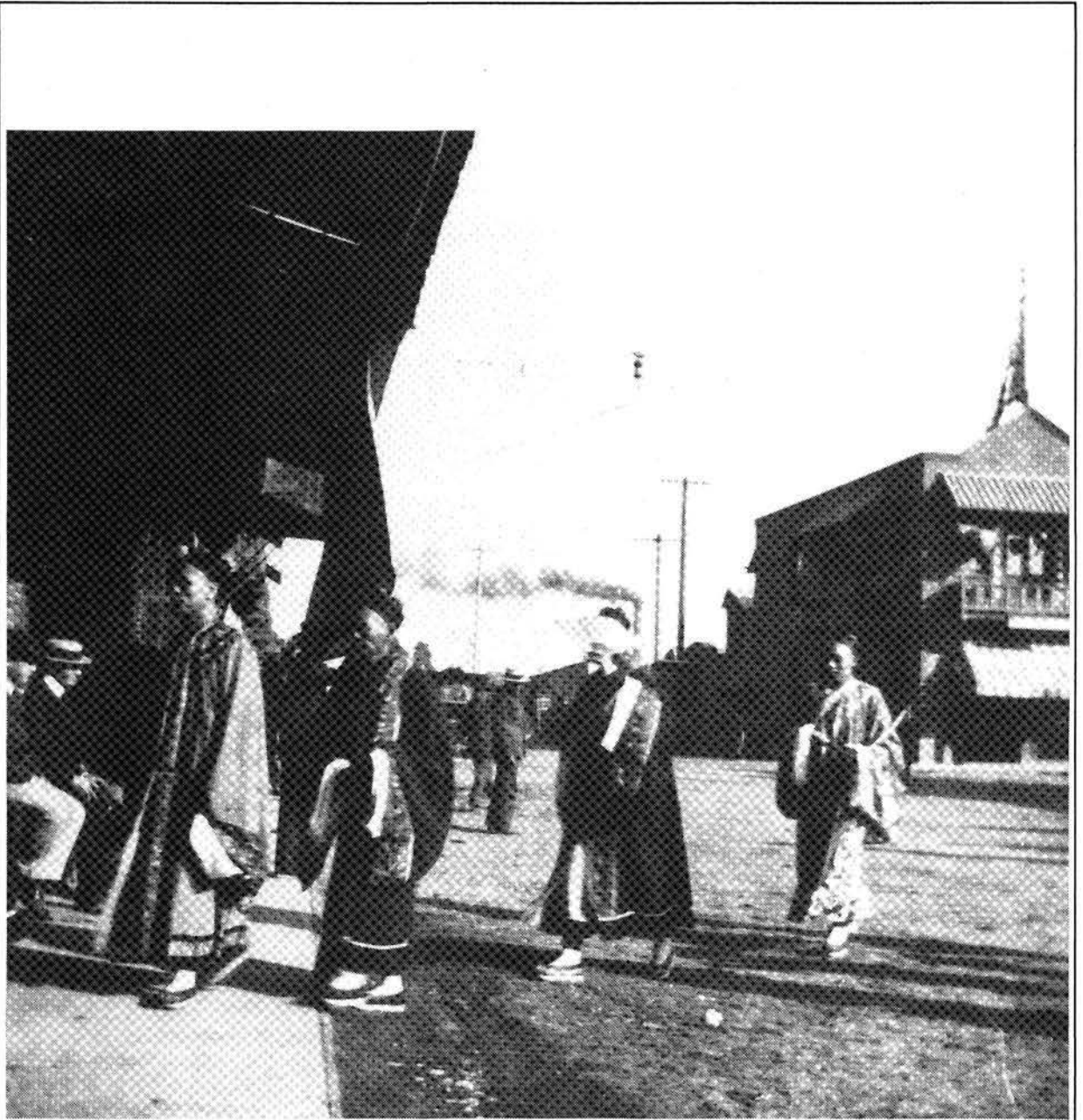
### **Acknowledgements**

I acknowledge my good fortune in meeting Carlos B. Apablasa, great-great-grandson of the pioneer Juan Apablasa. He graciously agreed to several interviews and shared treasured heirlooms and photos. Generous, too, were Marian Francis and Thomas Cleary, scions of Mathew Keller, who made 1870s Los Angeles synonymous with enology.

Suellen Cheng, director of the Chinese History Museum, was never too busy to answer my questions. A genealogist and longtime member of the Chinese Historical Society of Southern California, Emma Louie, enlightened me on cultural issues.

As director of the Southern Pacific Historical and Technical Society, Michael Jarel contributed data from his impressive information bank. Also helpful were Donald Duke, Golden West Press, and Jim Walker, Interurban Press. Ed Kielty, Troxel (train) Models, offered insight into the local streetcar system.

Gratitude for archival and photo research assistance is due to: Brita Mack, the Huntington Library; Bill Mason, Natural History Museum of Los Angeles County; and Dace Taube, Regional History Center, University of Southern California.



**Figure 2.16. Apablasa near Juan, ca 1900**

(Courtesy, Seaver Center for Western Research, #3980)

### 3. FEATURES

#### Introduction

The archaeological excavations at Union Passenger Terminal for the Metro Rail Station were conducted over a span of several years from 1988 through 1991. The intermittent nature of the investigation was necessitated by a complex set of variables, including up to 18 feet of track fill, the construction schedule, need to coordinate station work with maintaining the operating rail service, etc. Consequently the cultural resource work was carried out when all of the factors combined to allow a safe work environment, and in only those areas delimited by the impact zone of the right-of-way which were not previously disturbed by existing UPT facilities.

During the course of construction, numerous areas were found to contain cultural materials; in some cases these finds proved to be isolated occurrences, and in others, architectural features and cultural deposits were found. If a particular area revealed significant or widespread cultural remains, then a locus number was assigned; otherwise recovered materials were combined in analytical units defined by broad geographic area e.g., AU-1. A few of the features which were mixed or ambiguous were combined for certain analyses (e.g., 44, 45, 46, and 50) to minimize the number of proveniences which were not meaningful.

Four loci were defined within the Union Passenger Terminal complex (Figure 3.1) and six analytical units. Locus 1 was located near the main Passenger Tunnel and contained 15 features. The second locus (Features 16-38) was located southeast of Locus 1. Locus 3 was discovered during the construction of the Emergency Tunnel Exit on the north side of the slurry wall of the Metro Rail station (Features 39-42). The last locus was found in the area of the station West Entrance and consisted of Features 43-59. Covering each of the loci was a 18 ft cap of compacted fill deposited in the construction of the railroad track beds. Marking the top of the cultural deposits was a layer of demolition rubble - bricks, other architectural materials, and some artifacts.

Of the seven analytical units, AU-1 is the most general and broadly dispersed, including cultural materials that were found on the surface, in backhoe trenches, augering for the ramps, Augers 8K-9C, baggage handling excavation areas, guidewall trenches, units designated by N.../E..., observation wells, track area, drop shaft, retaining walls, Feature 17, and artifacts collected by construction crews. AU-2 contains Features 4, 6, 8, 10, and 15; AU-3, Features 26, 28, 34, 35, 36, and 37; AU-4, Features 19, 20, 21, 23, and 24; AU-5, Features 44, 45, 46, and 50; AU-6, Features 51 and 55; and AU-7, Features 2 and 7.

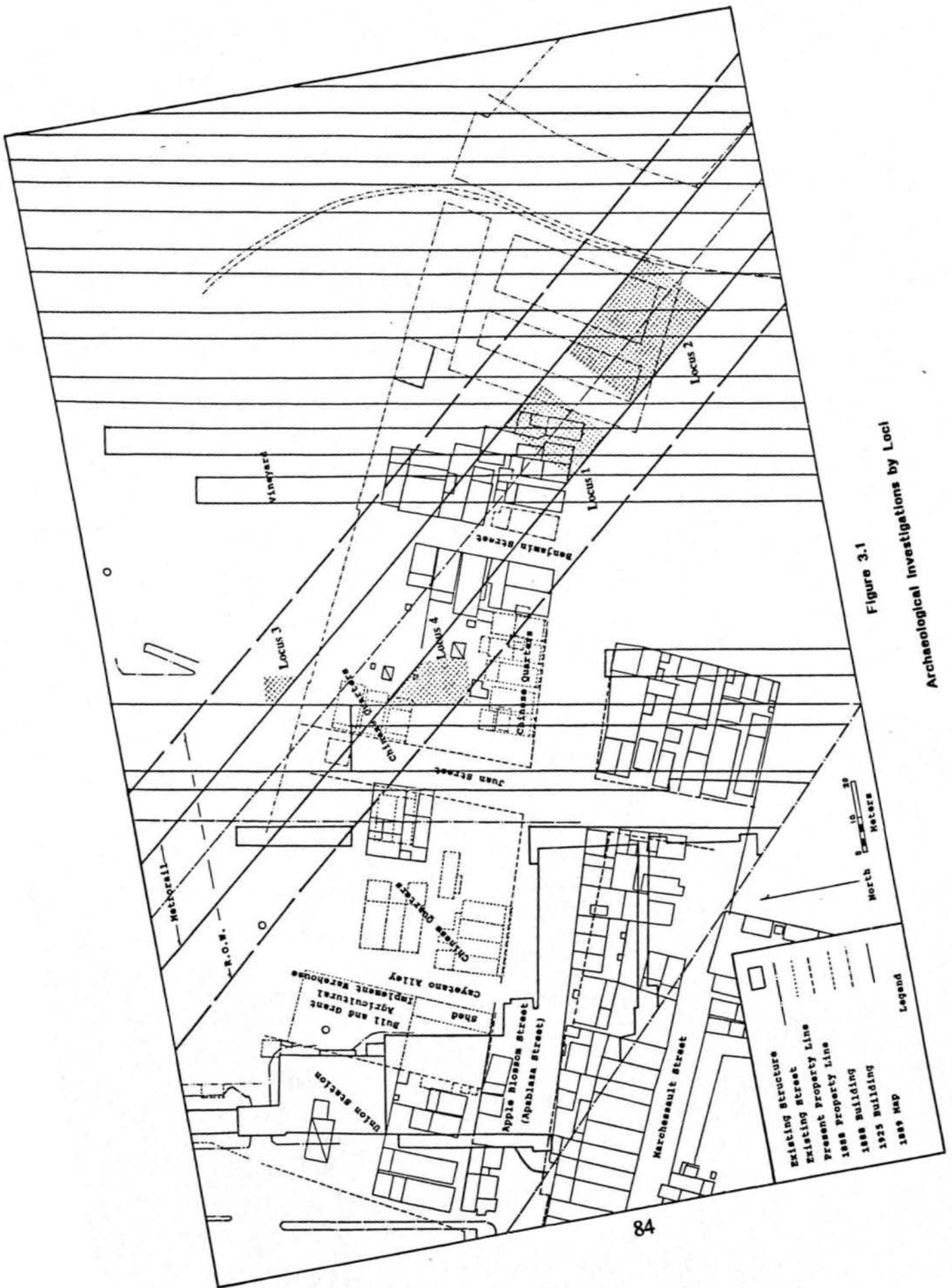


Figure 3.1  
Archaeological Investigations by Loci



A total of 59 cultural features was documented, ranging from a single brick pier to large and complex refuse deposits. Analysis indicated that some of the features initially designated separately were actually one larger deposit, and the contents were combined in the laboratory (Features 19, 20, 21, 23 and 24; Features 44, 45, 46, and 50).

#### LOCUS 1

Features 1 - 15 were discovered during the excavation of footings for a temporary passenger bridge (Figure 3.2). Eighteen feet of compacted fill were removed by the 220 B and smaller 555 Ford backhoes. Once the 274 foot elevation was reached, hand crews were utilized to remove Stratum A which consisted of a 30-40 cm layer of brick rubble and random artifacts. The second lower stratum (B) consisted of a sandy loam that was generally 30 cm thick and in which most of the features and architectural remains were found. Stratum C was the underlying light colored, culturally sterile sand layer that was a minimum of 1 m thick and may be flood alluvium.

#### Feature 1 - Trash Pit

##### Description

Located near the northwest corner of Locus 1, this feature consists of four separate strata designated as Features 1A, 1B, 1C, and 1D, within one well defined pit, covered by a layer of brick rubble. The overall deposit measures 168 x 54 x 110 cm deep. Feature 1A is approximately 15 cm thick and overlays Feature 1B which is 25 cm thick. Feature 1C is adjacent to the north end of Feature 1A. Feature 1D is intrusive into Feature 1A and measures 50 x 35 x 40 cm deep. Each of the strata was clearly discernible by layers of fine grained silts, making it possible to distinguish the different deposits.

The configuration of the various strata suggests that Feature 1D was deposited in a shallow pit with overflow extending outward from the center. The next higher stratum (1C) consists of a thin 2 cm layer within the center of the pit that becomes a berm on the edges of the pit. It appears that Feature 1C was dug out sometime after deposition to accommodate later refuse. Features 1A and 1B conform to more traditional trash depositions in that clear pits were observed without any overflow on the margins of the deposits. The last pit (Feature 1D) consists of a well defined accumulation of refuse that extends through Stratum B to the top of Feature 1A. This particular deposit differs from the others because it has vertical walls, is much smaller in diameter (150 cm), and extends through Stratum B, which overlays the other elements of the feature. The surrounding soils conform to the generalized descriptions given above. The deposit is a dark organic loam, intermixed with sand.

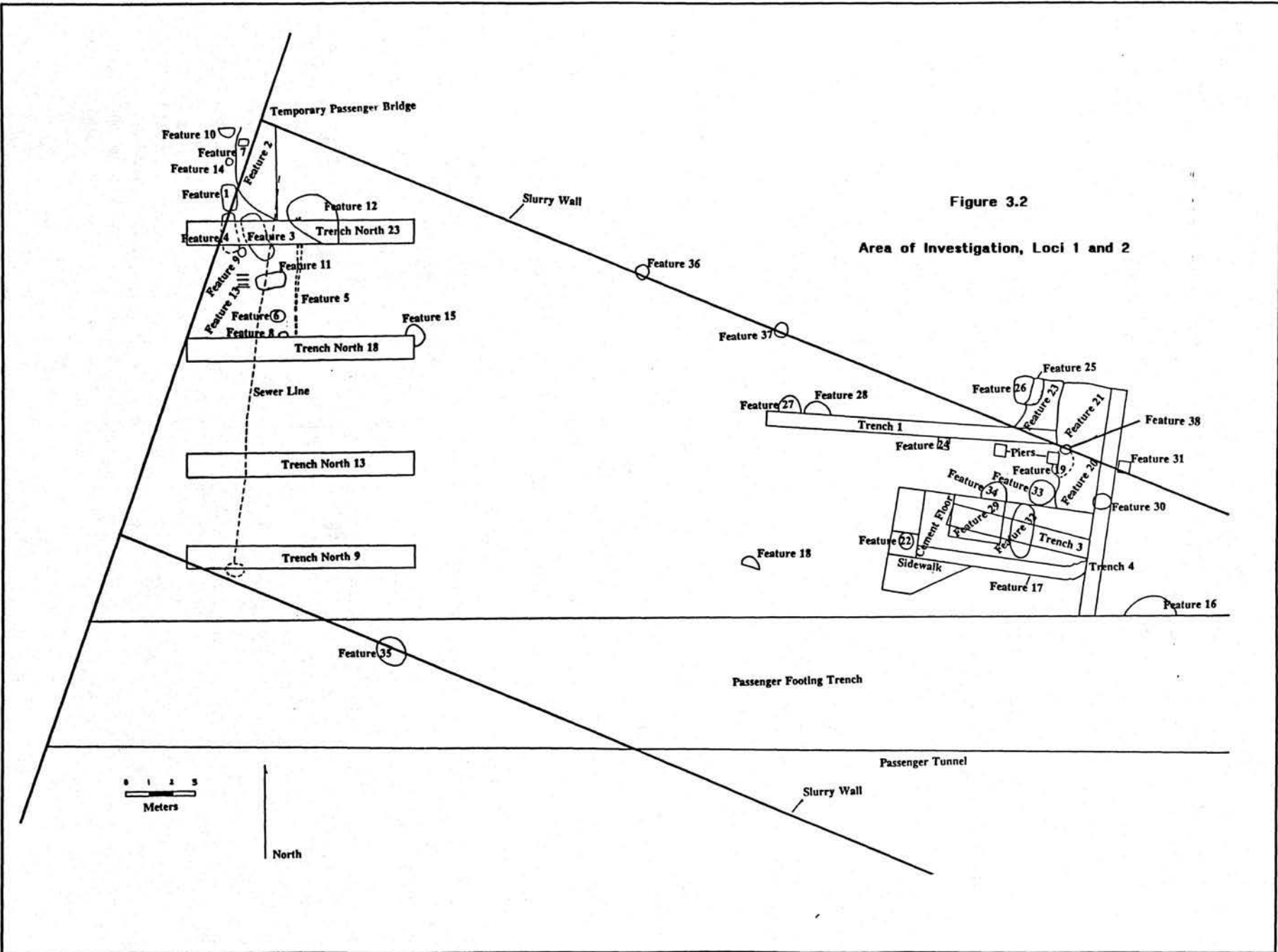


Figure 3.2

Area of Investigation, Loci 1 and 2

## **Constituents**

Feature 1A: Consists of a friable brown sand with numerous ceramics and glass and very few organic components.

Feature 1B: This element consists of a very dense mix of organic materials and extremely friable, organic loam-like soil. There were innumerable lenses of eggshell, ash, and charcoal, extensive amounts of fish and mammal bone, some Chione remains, and a wide assortment of ceramics and glass.

Feature 1C: A dark, grayish brown sand with numerous charcoal fragments and very few cultural materials.

Feature 1D: Very compact mottled clay, with numerous ceramics, glass, nails, and fine gravel lenses, and small rounded rocks and cobbles.

## **Interpretation**

The four elements of this feature are related to the deposition of refuse. The distinct differences in soil texture, constituents, and clearly defined strata, suggest successive periods of deposition. It is evident that the central portions of each feature element overlap each other, indicating that the pit was open over time, and was intentionally utilized. The apparent removal of the central portion of Feature 1C may have been an attempt to create more space.

## **Feature 2 - Trash Deposit**

### **Description**

Feature 2 is a thin, but concentrated, deposit (30 cm) of cultural materials spread out in a 4 x 2 m area. In profile the feature is characterized by sloping walls and in the center was a consistent thickness. The west edge of the pit is within 15 cm of the east edge of Feature 1.

There was no internal evidence of stratigraphy or layers of similar cultural materials. The north end of the feature extends into the north wall of the slurry wall, and the east side extended a short distance into the remaining area of the railroad fill.

### **Constituents**

The materials recovered include ceramics, glass, areas of amorphous metal, charcoal, and some organic material, e.g., eggshells, fish and mammal bone.

## Interpretation

Feature 2 is a refuse deposit situated in a natural depression or in a slightly excavated pit. The slope of the feature, while clearly delineated, did not show any obvious modification, and suggests that a natural depression was used. The lack of stratigraphy within the deposit indicates that it was probably limited to a relatively short period of deposition.

## Feature 3 - Trash Pit

### Description

Excavation of Trench N23 revealed three refuse deposits which were designated as Features 3, 4, and 12 (Figure 3.3). Removal of overburden indicated that Feature 3 was an elongated oval which measured 130 x 75 x 45 cm deep. Possible associations include Features 2 and 4.

### Constituents

The lowest 20 cm of the deposit contained dense concentrations of artifacts, while the upper 25 cm consisted of mammal bones and layers of eggshells, suggesting an interruption in deposition. The deposit contained porcelains, stoneware, earthenware, and sheets of pane glass.

### Interpretation

This feature appears to have been a purposefully dug refuse deposit with two episodes of dumping: the initial deposition relating to broken artifacts, mostly domestic, followed by a subsequent filling with eggshells and discarded mammal bone.

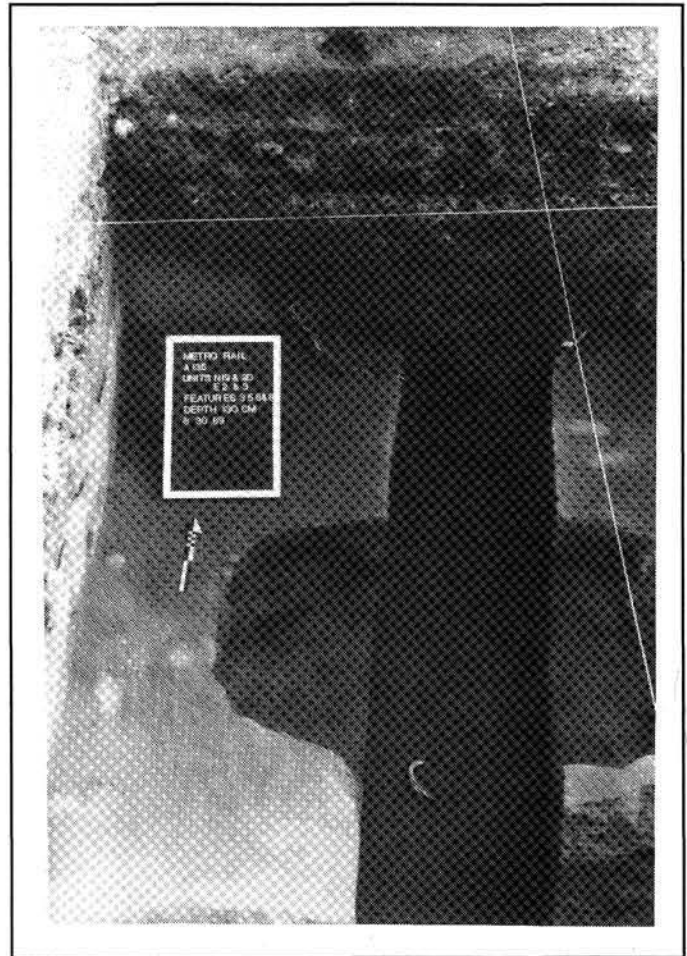


Figure 3.3. Feature 3



## **Feature 4 - Trash Deposit**

### **Description**

A small trash deposit was found to be 125 x 90 x 29 cm deep. The center was cut through by Trench N23, with the remainder exposed in the north and south walls of the trench. The overall configuration is an elongated oval, similar in appearance to Feature 3, which is located immediately to the east with a 15 cm balk between them. The sediment within the feature was a dark grayish brown sandy silt, with decayed organic material.

The walls of the pit are almost vertical and appear to have been purposefully dug to contain the discards.

### **Constituents**

The deposit contained a mixture of bird bone, mammal bone, eggshell, cuttle bone, amorphous metal, large can, ceramics, glass, charcoal, and shoe sole.

### **Interpretation**

The nature of the materials within this feature and the similarity of the pit configuration and close proximity to Feature 3, suggest that the two deposits may have been dug by the same individual(s) or household unit. The singular difference between Features 3 and 4 is the lack of stratification between the food remains and the artifacts in Feature 4. This would suggest uninterrupted use in contrast to Feature 3, which had a gap between the faunal remains and the deposit of artifacts.

## **Feature 5 - Brick Alignment**

### **Description**

Feature 5 is an alignment of bricks oriented north-south, end to end. It consists of two parallel rows of fired bricks, half of them fractured or simply fragments. There is no evidence that the bricks were mortared together. Toward the north end of the alignment, the fragments are jumbled and appear to be randomly placed, suggesting that they were dislocated from their original position during demolition. The overall length of the alignment is 5.1 m, with a width of approximately 0.5 m, including those jumbled. The overall thickness of the feature is 10 cm.

### **Constituents**

The bricks are machine made, probably dating to the late 1800s. Artifacts found in association include a brown glass bottle neck with applied brandy or wine finish, Celadon fragments, stoneware, earthenware fragments, tin sheeting, and an assortment of nails and

pane glass. Two of the bricks are marked with mold stamps of "J. Mullally/Los Angeles," the second oldest brick company in Los Angeles.

### **Interpretation**

The alignment of bricks indicates that they were purposefully placed. The lack of mortar and use of broken and fragmented elements suggest that the function was more symbolic than practical, perhaps a boundary or path. There was no evidence of any parallel or perpendicular alignment.

### **Feature 6 - Trash Deposit**

#### **Description**

Removal of the overburden between Base Lines N18 and N13 not only revealed Features 5 and 8, but also a shallow trash deposit, which was designated as Feature 6. A sewer trench was also found bisecting the feature. This oval pit measured 108 x 80 x 25 cm deep. Feature 6 has relatively straight sidewalls and a bowl-shaped bottom.

#### **Constituents**

Artifacts recovered included mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware. A semi-complete fish skeleton set in soft plaster was inside the base fragment of a stoneware jar. Associated with the skeleton were fragments of turtle shell.

#### **Interpretation**

The pit functioned as a refuse depression. The materials found within the feature appear to be primarily domestic in nature.

### **Feature 7 - Wooden Posts**

#### **Description**

This feature consists of two vertical wooden posts, within the northwest corner of Feature 2. The two posts are approximately 10 cm apart and oriented east-west. A small slat of wood, not unlike a fence board, is connected to both posts with wire nails. The westernmost post is 6 x 4 in, while the easternmost post is 4 x 4 in. The tops of the two posts have been burned and were in a state of advanced decay. The posts extended approximately 20 cm into Stratum C.

### **Constituents**

Artifacts in the immediate area of the feature include Chinese gaming pieces, dice, marbles, ceramics, amorphous metal, pieces of wood (unburned), and a fragment of brick. Since Feature 2 surrounds this feature, it is unclear if the artifacts are directly related to the posts.

### **Interpretation**

The feature may be related to a fenceline as opposed to the wall of a structure or some other substantial architectural element. The evidence is slight, but is based on the connecting board, the difference in size of the posts, post size, and the minimal depth of the base of the posts. This feature appears to be superimposed on Feature 2 and of a later deposition.

## **Feature 8 - Trash Deposit**

### **Description**

A small trash deposit was discovered during the excavation of Trench N18. It measures 53 x 37 x 25 cm deep. The walls were apparently crudely stepped, rather than sloped as in the other refuse pits. Approximately 75 percent of the feature was removed during the excavation of Trench N18.

### **Constituents**

Artifacts recovered included mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware. The artifacts are very similar to those found in Feature 6.

### **Interpretation**

The pit was prepared to receive refuse. The materials deposited are primarily domestic in nature.

## **Feature 9 - Wooden Post**

### **Description**

During excavation of Feature 4, a wooden post and posthole were found within the feature and designated as Feature 9. The post measured 5 x 5 in and was 3.3 ft long. Two wire nails were found in the south side of the post. The posthole measures 45 x 70 x 159 cm and has disturbed the eastern half of Feature 4. The wood post is not burned, except along a splintered edge of the top.

### **Constituents**

The soil of the posthole contained dense concentrations of ash and charcoal and has a high organic content characterized by fish scales, mammal bone, and eggshells. Cultural materials were encountered throughout the posthole pit. Numerous short nails with small heads were recovered from the base of the posthole. In addition, several corroded coins were found on the east side of the posts.

### **Interpretation**

There is insufficient information to speculate on the function of the post. It is possible that this feature is related to Feature 7, interpreted as part of a fence.

### **Feature 10 - Trash Pit**

#### **Description**

During the clearing of Stratum B, a shallow trash pit was discovered in Unit N27/W0-E1. The deposit, as found, measures 126 x 57 x 12 cm deep. The north end of the feature was destroyed during the construction of the slurry wall, while the west side was damaged by bulldozer activity during fill removal. Disturbance to this feature precluded accurate observations of the actual configuration. The pit appeared to be a shallow oval deposition. The deposit is a light organic loam, intermixed with sand.

#### **Constituents**

Artifacts ranged from ceramics, nails, mammal and fish bone, to some pieces of fabric.

#### **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a refuse depression. The materials found within the pit appear to be primarily domestic in nature.

### **Feature 11 - Trash Deposit**

#### **Description**

Continuing removal of the overburden between Baseline N18 and N23 revealed five features, one of which was designated as Feature 11, a refuse deposit. This pit measured 114 x 75 x 68 cm deep. The walls of the feature were straight and the bottom was flat, not bowl shaped as many of the others. In addition, the deposit was a crude rectangular shape. The sewer trench bisects this deposit and appears to have removed approximately 30 percent of the materials.



The sediment within the feature consisted of a dark grayish brown sandy silt, with decayed organic material.

#### **Constituents**

Artifacts included ceramics, nails, mammal and fish bone, coins, and figurines. One 1901 "Walking Liberty" five dollar gold piece and two fragments of opium pipe were found.

#### **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a refuse depression. The materials found within the pit appear to be primarily domestic in nature.

### **Feature 12 - Trash Deposit**

#### **Description**

This feature is a large trash deposit, 150 x 150 x 16 cm deep. The south half of the feature was cut through by Trench N23, with the remainder exposed in the north and east walls of the trench. The overall configuration is an oval, with walls that are almost vertical and appear to have been purposefully dug to contain the refuse. The deposit is a light organic loam, intermixed with sand and silt.

#### **Constituents**

Artifacts recovered included mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware.

#### **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a refuse depression. The materials within the pit appear to be primarily domestic in nature.

### **Feature 13 - Burned Wooden Planks**

#### **Description**

Feature 13 consists of traces of three burned wood planks oriented east-west. The overall size of the planks and associated area is 200 x 200 cm. The traces consist of charcoal, a charcoal smear, charred wood, and burned soil; each appears to form a rough rectangle, resembling a plank of wood, approximately 15 to 20 cm apart.

This feature overlays Stratum C. No other soils are related.

### **Constituents**

The northernmost remnant has four wire nails scattered along its length. The central element has two wire nails laying in a charcoal smear, while the southern trace has three wire nails near its eastern end.

### **Interpretation**

The configuration of the traces suggests that they were floor planks or fence boards. Fencing might seem more probable since there is an obvious gap of 15 to 20 cm between them, with no evidence of additional wood in between. Both Features 7 and 9 are in a rough alignment with Feature 13 and may represent related fence posts. This feature may be associated with Features 7 (wooden posts) and 9 (wood post) and possibly 5 (brick alignment).

### **Feature 14 - Brick Cache**

#### **Description**

Removal of overburden between Baseline N25 and N27 revealed a cache of four jumbled bricks in a small depression. The hole is 33 cm in diameter, and is approximately 14 cm deep. The bricks are broken and lack any impressions. The bricks were buried in Stratum C. There were no other associated soils.

#### **Constituents**

A few wire nails, mammal bone, and a glass fragment were found in association with the feature.

#### **Interpretation**

Lacking diagnostic materials or obvious functional elements, there is insufficient information to determine what the feature was or why it was created.

### **Feature 15 - Fire Pit**

#### **Description**

Feature 15 is a fire pit located at the east end of Trench N18. It was exposed in both the north and east walls of the trench. Although a portion of the feature was lost in the trench excavation, there was sufficient integrity in the remaining sections to estimate its size as 72 cm in diameter, with a depth of 33 cm.

Feature 15 was located in Stratum C, approximately 30 cm below the top of the stratum. The depth of the fire pit suggests it was dug below grade (20 cm) and then utilized.

## **Constituents**

The contents were mostly composed of burned wood fragments, charcoal, burned sand, and ash. A small charred bag containing Indian Head pennies was recovered from the center of the deposit. Very little else, except amorphous metal and nails, was recovered.

## **Interpretation**

On the basis of the burned wood, ash, and fire-altered soil, it is probable that this feature functioned as a crude incinerator or cooking area.

## **LOCUS 2**

To facilitate the construction of the Metro Rail station, the contractor removed portions of the existing passenger tunnel and adjacent ramps. To effect this demolition, it was first necessary to excavate a trench along either side of the tunnel so that a jackhammer backhoe could access the walls and footings. During trenching, the archaeological monitor observed numerous Chinese artifacts in one bucket load. Work was temporarily halted in the immediate vicinity, and the north wall of the trench was cut back. The trench was temporarily backfilled enough to facilitate safe access. Track fill north of the passenger tunnel was removed, and was hand cleared to explore for additional features. A large smear of artifacts embedded in tar and oily soil was encountered and initially designated as Feature 17A. Feature 17 (brick foundation) had been encountered in the trenching of the main passenger tunnel and a layer of what appeared to be associated artifacts was also found. Subsequent excavation revealed that the cultural material layer was pervasive over the entire locus rather than directly associated with Feature 17, and probably resulted from the demolition of Chinatown, since it overlay intact features (Figure 3.2) and architectural elements. Underneath Stratum 17A was an asphalt pavement that covered all of the trash deposits and several of the architectural features, except Features 17, 24, and 31.

## **Feature 16 - Trash Deposit**

### **Description**

A large (120 x 90 x 100 cm) irregularly shaped trash deposit observed during demolition was designated Feature 16. Since this deposit was located directly underneath soil that was supporting operational rail tracks, it was impossible to remove the fill above the deposit. Consequently, it was necessary to excavate the pit from the side of the trench. The matrix was removed into dust

pans, emptied into buckets, and then raised to a safe area, where it was screened.

The soil consisted of a dark organic loam with pockets of sand and silt.

### **Constituents**

A significant number of Chinese artifacts, mammal and fish bone, and other items were recovered.

### **Interpretation**

The irregular depression did not appear to have been greatly modified for its eventual function as a trash pit. The walls of the west side were crudely sloped, while the wall of the east side was almost vertical. The bottom of the pit was uneven and did not demonstrate any preparation.

## **Feature 17 - Brick Footing**

### **Description**

A brick footing was observed eroding out of the wall of the old trench for the passenger tunnel. The fill to the north was removed, and the area was systematically cleared. The footing was uncovered and an associated cement pavement was revealed. The footing and pavement were designated Feature 17. In the initial exploration of the feature, an oily compacted layer of artifacts was designated as Feature 17A to differentiate it from the brick foundation. Eventually, this layer was found to continue over the entire locus and interpreted as demolition debris. The brick footing was 50 cm wide and 6.25 m long, approximately 125 cm below grade. The cement pavement was found on the north side of the foundation, extending southwest from the westerly end of the footing. In the approximate center of the foundation was a brick pier measuring 60 x 50 cm. The pier extended into the north pavement for a distance of 40 cm.

The pavement on the north side had been scored into eight sections, of which the easterly end had been apparently destroyed. The north section of the pavement measured 2.5 m x 9.5 m and approximately 3 cm thick. The exposed edges were chipped and in some areas missing. The north edge of the pavement was bordered by a 50 cm wide alignment of brick rubble. The jumbled brick appeared to be in a shallow trench less than 10 cm deep.

The southwesterly area of pavement (heavily fragmented) extended south from the foundation approximately two-thirds of the length, angled southwest, then turned abruptly west, and turned north for



a distance of 150 cm. All edges of the pavement were smooth.

The soil of the footing trench and vicinity of the feature consisted of a dark sandy loam.

#### **Constituents**

Excavation on the east end of the foundation revealed a sparse scatter of artifacts associated with the footing trench. The materials included bottle glass, Chinese ceramics, pane glass, amorphous metal, and broken bricks.

#### **Interpretation**

The brick footing and pavement appear to be wall and flooring of a structure. The rubble trench on the north side of the north flooring appears to be some type of purposeful border, but the disturbed nature of the remains makes this interpretation uncertain. Other features that appear to be related are 24, 25, and 31 which represent other architectural elements.



Figure 3.4. Feature 17

#### **Feature 18 - Trash Pit**

##### **Description**

Excavation of the passenger tunnel footing trench revealed a second trash pit in profile. A portion of the deposit had been cut away and consequently the actual width of the pit is tentative (80 cm). The configuration of the feature is circular and measures 102 x (80) x 57 cm deep. The sides of the pit are nearly vertical, while the bottom is irregular.

The soil was a damp dark brown sand, providing a ready contrast to the surrounding sterile matrix of tan sand.

### **Constituents**

Artifacts recovered included bottle glass fragments, broken bricks, Chinese porcelains and stoneware, dense concentrations of amorphous metal, what appears to be decomposed mortar, and fragments of a metal pipe.

### **Interpretation**

The vertical walls of the feature suggest that the pit was purposefully dug and utilized as a refuse deposit. There was no evidence of stratification indicating that the filling occurred over a relatively brief period.

## **Feature 19 - Trash Scatter**

### **Description**

This large trash scatter was found immediately north of the Feature 17 pavement. The depression which contains the deposit is dish-shaped with a low angle slope terminating in an irregular bottom. The depression measures 300 x 200 x 31 cm deep. There is no evidence of modifications or preparation for the deposit. Feature 20 intrudes into the southeast corner of this feature.

The deposit soil is characterized by a light brown sandy loam which contrasts visibly with the surrounding matrix of light tan sandy silt.

### **Constituents**

The recovered materials include Chinese gaming pieces, medicine bottles, a Chinese wooden comb, stoneware jar fragments, and mammal, bird, and cuttlefish bones.

### **Interpretation**

The feature represents a natural depression that has been utilized for the disposition of household discards.

## **Feature 20 - Trash Scatter**

### **Description**

Feature 20 appears to postdate the deposition in Feature 19, as it overlays and intrudes into the latter. A thin layer of sand demarks the boundary of the two deposits. The feature measures 100 x 100 x 39 cm. The configuration of the deposit is a rough irregular circle that has very low gentle slopes that taper into a concave bottom.

The soils are the same as in Feature 19.

### **Constituents**

Among the various artifacts recovered were gaming pieces, Vietnamese coins, Chinese medicine bottles, dominoes, and teapot fragments.

### **Interpretation**

This deposit was contained within a roughly circular depression, which did not appear to have been greatly modified for its eventual purpose as a trash pit. The walls of the pit were almost absent and the bottom of the feature was uneven and did not demonstrate any preparation. The lack of stratigraphy within the deposit indicates that its use was probably limited to a brief period of deposition which was later than Feature 19.

### **Feature 21 - Trash Deposit**

#### **Description**

During the removal of Stratum 17A, a dense deposit of refuse was encountered in the north end of the area of excavation. The configuration of the feature was a shallow circular depression, measuring 250 x 250 x 50 cm. The walls of the pit were sloping but did not evidence any obvious modification.

The soil within the feature was a reddish-brown loam, with the surrounding matrix consisting of a tan sand.

#### **Constituents**

Materials recovered included ceramics, glass, and bone. Heavy concentrations of eggshell and carbon were also present. Other faunal remains consisted of cuttlebone, fish bone, and several pig jaws. Objects of special note were two whole ink bottles, gaming pieces, a number of medicine bottles, a ring set with three small opals, and numerous fragments of black fabric.

#### **Interpretation**

The circular depression did not appear to have been greatly modified for its eventual function as a trash pit. The bottom of the pit was uneven and did not demonstrate any preparation. The slope of the sidewalls, while clearly delineated, did not show any obvious modification, and suggests that its use was more opportunistic than intentional. The lack of stratigraphy within the deposit indicates that it was probably limited to a short period of deposition.

## Feature 22 - Trash Pit

### Description

Work on Feature 17 revealed an extensive architectural component that required additional excavation for evaluation. Two 1 x 1 m units were excavated at the western edge of the Feature 17 footing and cement pavement. During this process another trash deposit was revealed and designated as Feature 22. The feature was somewhat amorphous in shape, but could be characterized as an irregular oval 80 x 90 x 100 cm deep. There was no indication of any pit preparation or modification. The slopes of the deposit were uneven and ambiguous.

There was no clear indication that the feature soil was different from the surrounding matrix, both characterized as a light brown sandy silt. What differentiated the feature from the surrounding sediment was the presence of artifacts.

### Constituents

Some of the artifacts recovered from this deposit include a Chinese incense burner, fitted stoneware lids, Chinese condiment dishes, and mammal, bird, and fish bones.

### Interpretation

The overall configuration and size of the deposit reflect an intentionally dug pit. In general, the deposit reflects a domestic orientation.

## Feature 23 - Trash Pit

### Description

Feature 23 is a refuse deposit located in the northeast corner of Trench 1. It is roughly circular and measures 176 x 124 x 18 cm. The walls of the pit are sloping and show no obvious indications of preparation or modification.

The soil consisted of a dark organic loam with pockets of sand and silt. The surrounding matrix was a light tan colored sandy silt.

### Constituents

The recovered artifacts include mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware. In the west side of the pit, a block of wood 8 cm square, possibly redwood, was uncovered. The wood block did not appear to be purposefully buried as a post.



## Interpretation

This feature appears to be another shallow natural depression utilized for the deposit of refuse. There was no obvious stratigraphy and it may represent a single or short episode of deposition.

## Feature 24 - Brick Pier

### Description

During the process of clearing fill from the asphalt surface, a brick pier was observed (Figure 3.5). The asphalt was sealed around the bricks indicating that the two elements were contemporary and probably associated. After initial observations were made, the asphalt was removed, and the pier and associated hole were excavated. The backfill in the hole was found to contain a sparse scatter of artifacts.



Figure 3.5. Feature 24

The pier was composed of two elements, a column and a base of stepped layers of brick. The column had nine remaining courses of brick, set off center on the base. The base was composed of five courses, of which only the bottom two were directly superimposed. The remaining three courses were pyramidal in shape, in that they were reduced in area.

The mortar of the pier was a Portland type cement that appeared to be evenly laid between the courses. Some of the bricks composing the column and base were already broken and obviously reused.

The overall dimensions of the platform were 120 x 100 x 108 cm deep. The hole for the pier had been dug an additional 20 cm horizontally in each direction.

The soil of the excavation was a sandy silt, with small pockets of a darker brown loam.

#### **Constituents**

A sparse scatter of artifacts was recovered from the pier excavation, and none proved to be diagnostic in nature. Some of the materials were Chinese and others were of Euroamerican origin.

#### **Interpretation**

The brick pier was a support for a structure which had an asphalt surface. Research indicated that a vegetable sellers' warehouse was depicted in the location of Feature 17. A second pier (Feature 31) of the same type corresponds to the same distance and direction of the piers depicted on the measured Sanborn map of 1925.

### **Feature 25 - Brick Alignment**

#### **Description**

This feature consisted of 12 fired bricks without mortar. They formed a rough square with one brick extending south from the western side. Relative to the configuration, the west side was composed of five bricks oriented east-west; the center consisted of two north-south bricks, and the east side duplicated the west side. The overall feature measured 130 x 120 x 20 cm.

The soil around the feature was a uniformly light brown sandy silt context.

#### **Constituents**

A limited number of artifacts were probably associated with this feature. These include a small tea bowl fragment and a small stoneware jar.

#### **Interpretation**

Lacking diagnostic materials or obvious functional elements, there is insufficient information to determine what the feature was or why it was created. The lack of mortar suggests that the feature did not support any substantial architectural elements. However,

the careful placement of the bricks suggests that some purpose was intended, conceivably as a base for a portable cook stove.

#### **Feature 26 - Trash Deposit**

##### **Description**

Removal of Stratum A in the northeast quadrant of the locus revealed this elongated shallow deposit of refuse. The depression measured 260 x 120 x (40) cm. There was no obvious preparation of the depression and the bottom was irregular. The deposit is a dark organic loam, intermixed with sand and silt.

##### **Constituents**

Mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware were recovered.

##### **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a refuse catchment. The materials within the pit appear to be primarily domestic in nature.

#### **Feature 27 - Trash Pit**

##### **Description**

During the excavation of Trench 1, a circular trash deposit was encountered in the north wall of the trench. The sides of the pit were almost vertical and the bottom was a rounded concavity. The deposit measured 100 x 96 x 70 cm deep.

The soil of the feature was a dark brown loam, in contrast to the surrounding matrix of light gray to tan sand.

##### **Constituents**

The feature contained a dense concentration of eggshell, amorphous metal, Chinese ceramics, and glass bottle fragments. Items of note included one whole bottle with a paper "olives" label, three shoe soles, two bone toothbrushes, two opium pipe bowls, and numerous whole bottles.

##### **Interpretation**

This feature appears to have been a purposefully dug refuse deposit with one or more episodes of dumping. The faunal remains and the majority of artifacts indicate that the origin of the materials was probably a household or tenant building. The density of the remains suggests that the latter may be source.

## Feature 28 - Trash Pit

### Description

Feature 28 was exposed during excavation of Trench 1. The circular trash deposit measured 69 x 64 x 30 cm deep. The walls of the depression were generally vertical, tapering to a cone shaped bottom.

The fill of the feature is characterized as a brown sandy loam, surrounded by a tan sandy silt.

### Constituents

The contents appear to be predominantly Chinese stoneware jars, fragments of jars, and jar lids. Although limited numbers of porcelains and whitewares were recovered, the assemblage reflects a more utilitarian nature.

### Interpretation

This feature appears to have been a purposefully dug refuse deposit. The depth, regularity, and diameter of the pit suggest it was intentional and not an opportunistic utilization.

## Feature 29 - Trash Pit

### Description

In the initial stages of excavating Trench 3, a dense concentration of artifacts was uncovered. Trenching was discontinued and controlled excavation initiated. Overburden removal revealed a square pit measuring 2.2 x 2.2 m. Four strata were encountered: Stratum 1 - dark loam with few artifacts (10-20 cm thick); 2 - a mass of jumbled brick which covered the south half of the pit (20-40 cm thick); 3 - a very dense concentration of charcoal and burned artifacts (20-40 cm thick); and 4 - a dense deposit of unburned and whole artifacts (80 cm thick). The total depth of the deposit was 125 cm. The walls of the pit were vertical and the base was flat. All corners were square.

### Constituents

Stratum 1 is the only layer where soils were the predominant element. This lens consisted of a dark loam and was loosely compacted. Stratum 2 was almost totally devoid of soil and consisted of fragmented bricks and mortar. Stratum 3 consisted of burned artifacts and charcoal with very little soil. The soil in the wall around this level was a bright reddish-orange and has been intensely fired. The last stratum, although containing some dark loam, was almost totally composed of whole and broken artifacts.



Artifacts recovered in Stratum 3 consisted of melted bottles and ceramics. Very few faunal remains were found, except in a heavily burned state. In Stratum 4, the density of artifacts was so extreme that it required two excavators and 10 screeners two full days to remove the contents. Artifacts included large mouth storage jars, medicine bottles, soy jars, opium pipe bowls, porcelains, and a full array of Chinese artifacts. Seven U. S. coins ranged from 1876 to 1905.

### **Interpretation**

The uppermost stratum (1) appears to be a fill that was placed to support the cement pavement that was poured on the surface. The second stratum (2) may also be fill deposit for leveling, but it only extends over the south half of the unit. It is, however, restricted to the confines of the pit. Stratum 3 appears to represent a period of intense burning within the pit, overlaying a dense deposit of unburned artifacts in Stratum 4.

The purposeful rectangular configuration of the pit suggests it was not originally a trash repository but possibly an earthen cellar that was later utilized as refuse pit. A Dakin map dating to 1889 depicts a single story wood frame structure immediately over the location of the feature.

The large number of artifacts, including the bulk shipping jars, suggests that the deposit may have originated from a communal kitchen or restaurant. Although large, the assemblage appears to represent a single episode of dumping or continuous use over a short period of time. There were no indications of stratigraphy or artifact groupings within the strata that would suggest anything other than a rapid deposition. A more likely alternative, prompted by the burned materials and layer of broken bricks, is that a cellar was infilled with debris resulting from a fire before a new building was constructed.

### **Feature 30 - Trash Scatter**

#### **Description**

The excavation of Trench 4 revealed an extensive, shallow refuse scatter in a depression covering 200 x (80) x 45 cm. The deposit was bisected by the excavation of Trench 4. This feature did not have any evidence of stratigraphy or pit preparation. The overall configuration was an irregular rectangle, with an irregular bottom. The soils within the feature were characterized by a dark brown loam, surrounded by sand and pockets of clay.

### **Constituents**

Some of the more notable items from this feature included a mouthpiece for an opium pipe and several fragments of a Chinese stove.

### **Interpretation**

This feature appears to be another shallow natural depression utilized for discards. There was no obvious stratigraphy, and it may represent a short period of deposition.

## **Feature 31 - Trash Deposit and Brick Pier**

### **Description**

During excavation of Trench 4, a trash deposit and associated brick pier were revealed. The refuse appears to be within the excavation backfill of the pier and not associated with any other elements. The feature measures 100 x 50 x 120 cm deep. This pier duplicates Feature 24, except that there are 17 courses of brick of which the bottom three are stepped. The soil of the excavation was a sandy silt, with small pockets of a darker brown loam.

### **Interpretation**

Historical maps depicted a vegetable sellers' warehouse located in the location of the pier and footing designated as Feature 17. A second pier was also found (Feature 24), the same distance apart as shown in the measured Sanborn map of 1925. This was probably part of the same structure.

## **Feature 32 - Trash Pit**

### **Description**

The excavation of Trench 3 encountered Feature 32, another trash deposit in a rectangular pit measuring 150 x 100 x 35 cm. The walls were essentially vertical with a slightly rounded concave bottom. The interior of the feature is characterized by a dark brown sandy loam, surrounded by a tan sandy silt.

### **Constituents**

Some of the materials associated with this feature included butchered bone with cleaver marks, Chinese toothbrushes, and a complete ginger jar.

## **Interpretation**

The vertical walls suggest that the pit was purposefully dug and utilized as a refuse deposit. There was no evidence of stratification indicating that the filling was continuous.

### **Feature 33 - Trash Pit**

#### **Description**

To evaluate the potential for features under the north pavement of Feature 17, an east-west trench was excavated (Trench 3). This intercepted the circular refuse deposit designated as Feature 33. The upper stratum (A) was 25 cm in diameter, 10 cm deep, and basically dish-shaped. It was a thin lens containing a dense concentration of charcoal with few if any artifacts. At 20 cm below the bottom of Stratum A, Stratum B contained a full range of domestic artifacts. The configuration of the pit was an irregular circle which measured 40 x 30 x 75 cm deep. The walls were essentially vertical, ending in a conical base.

The upper stratum (A) was a black matrix of charcoal, surrounded by a light sandy tan soil. Stratum B consisted of a brown loam with pockets of sandy silt.

#### **Constituents**

Stratum A consisted solely of wood charcoal. Stratum B contained Chinese ceramics, mammal bone, fish bone, eggshell, amorphous metal, whiteware, bottle fragments, and numerous other artifacts.

#### **Interpretation**

The configuration indicates that this was a purposefully dug refuse deposit. It differs from most of the other trash pits in that its diameter is small, but it is considerably deeper and demonstrates stratification.

### **Feature 34 - Trash Pit**

#### **Description**

While excavating Feature 29, a second trash pit was found just off the northwest corner and under the cement pavement. The pit was circular with a concave base, 90 x 90 x 40 cm deep. The walls of the deposit were generally vertical, sloping down to a concave bottom.

The interior of the feature is characterized by a brown sandy silt, surrounded by a tan sandy silt.

### **Constituents**

Artifacts recovered from this deposit included perfume bottles, Chinese medicinal vials, stoneware jars and lids (large and small), and Vietnamese coins.

### **Interpretation**

The vertical walls of the feature suggest that the pit was purposefully dug and utilized as a refuse deposit. There was no evidence of stratification.

## **Feature 35 - Trash Deposit**

### **Description**

The excavation of the guidewall trench for the south slurry wall resulted in the discovery of Feature 35, another refuse deposit. This pit was 150 cm in diameter and 70 cm deep. The walls of the pit were sloping to a concave bottom.

The feature soils were a dark brown loam, with the surrounding matrix characterized as a light tan sandy silt.

### **Constituents**

The artifacts recovered include an insulator, 1899 U. S. dime, turtle shell, cuttlebone, stoneware lids, and fish bone.

### **Interpretation**

The almost vertical walls of the feature suggest that the pit was purposefully dug to be utilized as a refuse deposit. There was no evidence of stratification.

## **Feature 36 - Trash Pit**

### **Description**

The excavation of the guidewall trench for the north slurry wall resulted in the discovery of Feature 36, a refuse deposit measuring 66 x 66 x 34 cm. The configuration was roughly circular, with vertical walls and a flat bottom.

The surrounding soil was a light tan sandy silt. There was no soil within the feature which consisted entirely of cultural materials.

### **Constituents**

Artifacts recovered from this unit include stoneware storage jars, Chinese spittoon, Chinese teapot fragments, rice bowls, porcelain



spoons, as well as mammal and bird bone. The majority of the materials consisted of Chinese stoneware fragments.

### **Interpretation**

This feature appears to have been a purposefully dug refuse deposit. The depth and diameter of the pit suggest it was intentional and not an opportunistic utilization. The density of artifacts suggests that the origin of the materials could have been from a tenant building or restaurant.

## **Feature 37 - Trash Pit**

### **Description**

The guidewall trench for the slurry wall also exposed the small trash pit designated as Feature 37. The pit was circular with gently sloping walls that descended to a concave bottom. The feature measured 94 x 94 x 58 cm.

The deposit is a light brown organic loam, mixed with sand and silt and some pockets of clay.

### **Constituents**

Artifacts recovered included mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware.

### **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a place to discard refuse, and it appears to have been purposefully dug. The discards found within the feature appear to be primarily domestic in nature.

## **Feature 38 - Trash Pit**

### **Description**

During the excavation of the slurry wall guidewall trench, another trash deposit was uncovered. The walls were essentially vertical sloping down to the concave base. The cavity measured 118 x 76 x 50 cm deep.

The deposit is a dark brown organic loam, mixed with sand and silt. The soil outside of the pit was a light brown sand.

## **Constituents**

Artifacts recovered included mammal bone, fish bone, ceramics, glass bottle fragments, and Chinese stoneware.

## **Interpretation**

The nature of the deposit and configuration of the pit indicate it functioned as a refuse depression. The pit appears to have been purposefully dug for the refuse, and the contents appear to be primarily domestic in nature.

## **LOCUS 3**

On February 6, 1991, a PDCD inspector observed the unearthing of cultural resources by mechanical equipment in the location of Emergency Exit Stair No. 10 (Figure 3.1). The archaeological evaluation determined the potential for one or more intact deposits relating to the early Chinese occupation. Since design plans for the Metro Rail project could not be altered at this late date, the archaeological program was directed toward rapid data recovery to allow completion of the emergency exit stairway.

The Locus is northeast of the new Metro Rail station, and approximately 15 meters (50 feet) northeast of the northernmost extent of the Los Angeles Union Passenger Terminal Baggage Handling Facility. Approximately 3.6-4.2 meters (12-14 feet) of fill had been removed prior to encountering the original ground surface (elevation 275.75 feet) which contained cultural resources. The irregularly shaped excavation area measured approximately 41 meters (136.7 feet) northwest-southeast by 5-14 meters (16.7-46.6 feet) southwest-northeast (Figure 3.6). Construction plans for the emergency exit from the Metro Rail Station would necessitate the removal of at least another 5.4 meters (18 feet) of soil. This Locus proved to contain Features 39-42.

## **Feature 39 - Trash Deposit**

### **Description**

This feature was a broad but shallow cultural stratum approximately 15 meters east-west by 9 meters north-south, and about 24 cm deep in the northwest area. The elevation was between 274.99-275.75 feet above mean sea level. The mixed deposit contained both structural debris and household or commercial refuse, with the bulk of the building materials occurring in the unexcavated southeast half of Feature 39. Given construction priorities, the area could only be sampled.

Following the removal of overburden, the northwestern half of Feature 39 was excavated as a single unit. Diagnostic or representative materials collected from the disturbed upper soils

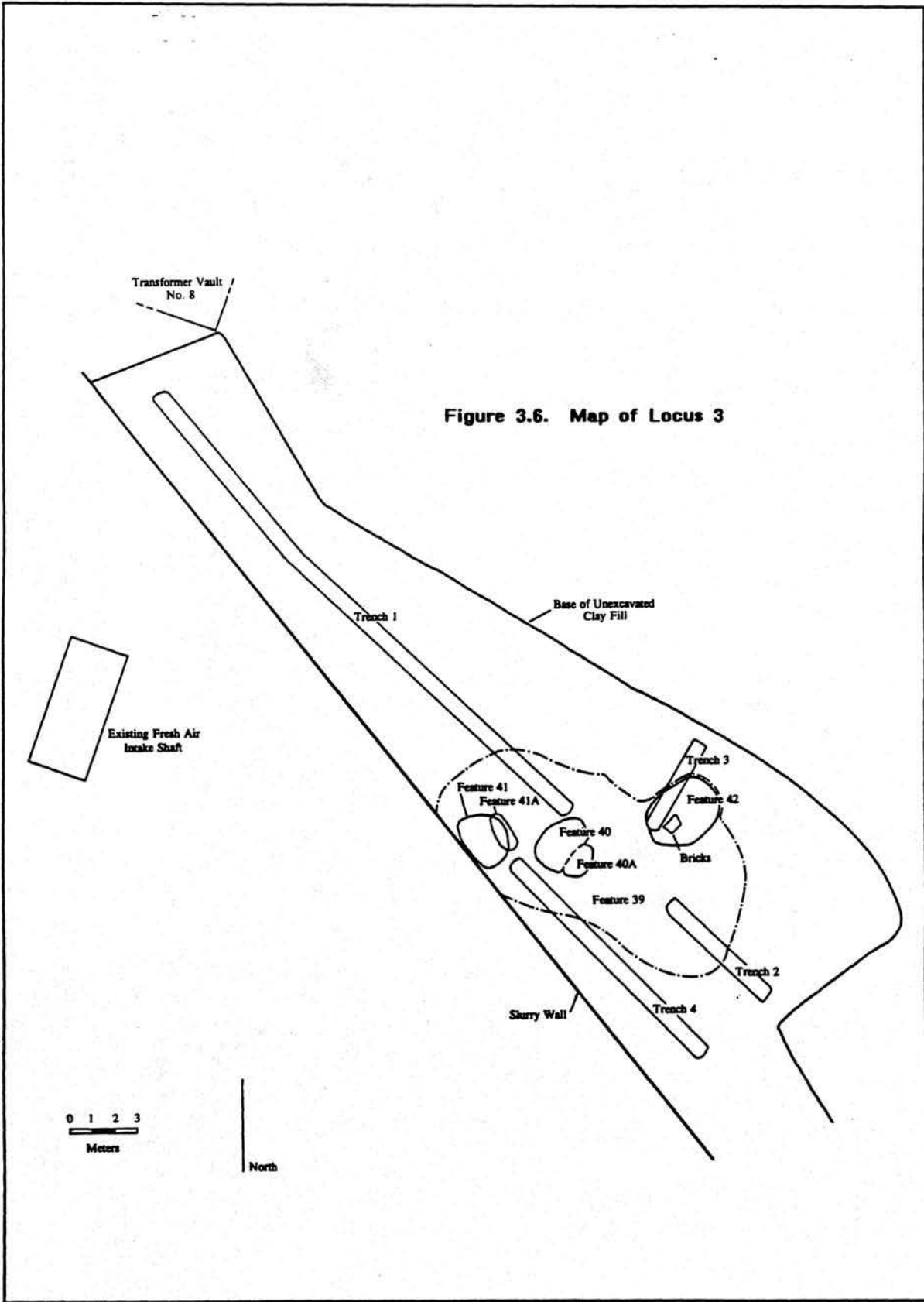


Figure 3.6. Map of Locus 3

were labeled as Feature 39, "General Surface Collection." Auger borings demonstrated the existence of two concentrations of buried cultural deposits. Based on the redundancy of cultural materials being recovered, and generally disturbed nature of the upper stratum, the southeastern portion of Feature 39 was peeled back by mechanical means to test for other buried, potentially intact cultural deposits. The removal of soils occurred from the southeastern edges of Features 40A and 42. This procedure verified the observation that the primary component of the southeast area consisted of building debris.

Approximately 30-40 cm of overburden, which included several uneven and discontinuous lenses of disturbed, compact, sandy clay, was removed, with only diagnostic artifacts saved. The clay lenses were part of the fill over the area, mixed with some building rubble and domestic refuse from the original ground level. Below the fill were several thin strata of charcoal and ash, overlying a friable, pinkish-gray burned lens (5YR 6/2) approximately 5-8 cm thick, containing moderate amounts of cultural materials. These strata were encountered discontinuously throughout the excavated area of Feature 39.

Below the burned lens or fill, was a dark brown, moderately compact, clayey-sand lens (10YR 3/3), 15-25 cm thick, that contained a dense deposit of cultural refuse, including ceramics, glass, and faunal remains, as well as moderate amounts of structural debris, overlying patchy deposits of melted tar, 2-5 cm thick. Disturbances in this level included the discontinuous and often uneven surface of the burned lens and lower deposit, and inclusions of compact clay and large structural elements, such as whole bricks. The basal stratum in the northwesternmost area appeared to contain intact refuse deposits, primarily ecofactual remains, e.g., bone, egg shells, and seeds. Due to time constraints and the disturbed nature of the level, discrete pits were not detected. Sterile fine-grained tan (10YR 7/4) or gray (10YR 6/1) sand existed below the cultural stratum.

### **Constituents**

The cultural stratum included varying densities of structural debris, primarily bricks, along with mortar, wood, window pane, and wire nails, resulting from the demolition of buildings. The greatest density of building rubble occurred in the southeast area mixed with only minor amounts of other refuse.

Materials recovered from the northwestern portion of the stratum included a variety of Chinese ceramics (including food storage vessels and table wares), personal items (shoes, buttons, and jewelry), glass containers, and faunal remains (e.g., bone, shell, eggshell, and seeds), as well as lesser amounts of building debris such as bricks, mortar, wood, window pane, and wire nails.



## **Interpretation**

The stratum designated as Feature 39 appears to represent the mixing of domestic/commercial refuse with structural debris resulting from the demolition of buildings, followed by the placement of fill over the area. The northwestern portion of Feature 39 contained much greater quantities of discarded refuse confined in a thinner stratum (15-24 cm). The southeastern portion contained a deeper, thicker (40-50 cm), very dense deposit of building rubble, with only minor quantities of refuse. Refuse seems to have been purposefully discarded in pits northwest of the old structures. There are insufficient data to explain the burned lens, which covers only portions of the southeastern area of Feature 39, although it may be associated with the processes of demolition.

## **Feature 40 - Trash Pit**

### **Description**

The feature is an intact, discrete refuse pit, 1.7 meters northwest-southeast by 2.5 meters southwest-northeast, and 18 cm deep; located between 273.29-273.89 feet above mean sea level (AMSL). The pit was separated from the base of the northwest area of Feature 39 by approximately 33 cm of nearly sterile, fine-grained sand. It was discovered during auger boring tests placed into the sterile sand below Feature 39. It was located southeast of Feature 40A, at the same elevation, and separated by a minimum of 10 cm of sterile sand at the top.

Approximately 33 cm of nearly sterile, fine-grained sand (10 YR 6/1) was overlying this feature. The soil matrix of the pit consisted of a friable blackish-brown sand (10 YR 2/1) that contained a very high content of charcoal. The pit was situated within a light-colored (10 YR 7/3) medium-coarse grained sand base that contained an increasing amount of gravel and cobbles with depth, as demonstrated by 70 cm of auguring.

### **Constituents**

Cultural materials included high densities of Chinese ceramics, glass containers, faunal remains, and other refuse. None of the building debris encountered in the overlying features (39 and 42) was recovered in this deposit.

### **Interpretation**

The feature represents a purposeful, intact refuse pit that may be associated with the former brick structures located to the southeast, or a slightly earlier occupation, based on its lower elevation.

## Feature 40A - Trash Pit

### Description

An intact, discrete refuse pit was exposed, 0.8 meter northwest-southeast by 1.3 meters southwest-northeast, and 17 cm deep. It was located between 273.28-273.86 feet AMSL, at the same elevation as the adjacent Feature 40. It was encountered while manually clearing away the sand overburden for Feature 40. Soils and conditions were the same as for Feature 40. This was designated as Feature 40A in the event that the two features were found to be connected during the excavation process.

### Constituents

Materials recovered were similar to those from Feature 40, e.g., high densities of Chinese ceramics, glass containers, and faunal remains. Due to time constraints, approximately half of the volume was dry screened through 1/4 in the field to remove excess soil, then bagged and labelled for sorting in the laboratory.

### Interpretation

This intact feature represents the purposeful disposition of domestic refuse.

## Feature 41 - Trash Deposit

### Description

An irregularly shaped, intact, discrete refuse pit measured approximately 2.5 m northwest-southeast by 2.2 m southwest-northeast, and was 32 cm deep; located between 273.45-274.55 feet AMSL. It was approximately 20 cm higher than Features 40 and 40A, although its base was at about the same level. It was located below a nearly sterile 14 cm thick deposit of sand, beneath Feature 39, adjacent to the slurry wall, and appears to have been minimally impacted, if at all, by the construction of the wall. Soils and soil conditions were the same as for Features 40 and 40A.

### Constituents

Materials recovered from this refuse pit were similar to those from Features 40 and 40A, e.g., Chinese ceramics, glass containers, faunal remains, and no building debris.

### Interpretation

This feature represents a purposeful, intact refuse pit. The contents are most likely related to the same time frame of deposition as Features 40 and 40A.

## Feature 41A - Trash Pit

### Description

This refuse pit feature represents a somewhat earlier episode of deposition as it underlies Feature 41, off to the southeastern side. Its surface and base were 20 cm lower than those of Features 40 and 40A. This oblong-shaped pit was 2.0 meters northwest-southeast by 0.8 meter southwest-northeast, and 18 cm deep; located between 272.65-273.25 feet AMSL. The soils and surrounding conditions were the same as described for Features 40, 40A, and 41.

### Constituents

The cultural materials were similar to those recovered from Features 40, 40A, and 41, e.g., Chinese ceramics, glass containers, and faunal remains. As with Feature 40A, much of the soil was dry screened to remove excess soil, then bagged and labelled to be sorted in the laboratory.

### Interpretation

The feature is associated with the purposeful act of refuse deposition.

## Feature 42 - Tar and Trash Pit

### Description

The remains were within a shallow, semi-circular pit that measured 3.75 m east-west by 2.5 m north-south, by about 30 cm deep; located between 275.09-275.75 feet AMSL, the same elevation as Feature 39. It was encountered along the southern portion of Trench 3, adjacent to the eastern edge of Feature 39.

After the removal of overburden, several variables were observed that warranted the use of a separate feature designation, as opposed to inclusion with Feature 39. These distinctions included: 1) the unusual density and seeming diversity of the cultural materials, although mixed with moderate amounts of structural debris; 2) the "lipping" aspect of melted tar that seemed to indicate a potential pit; 3) the extreme density of the structural rubble that bordered the southern extent, 4) the thickness of the nearly sterile charcoal lens that extended slightly north of Trench 3 into sterile sand; and 5) the lack of continuity with Feature 39 to the west, based on the separation from the sloping tar lens.

Excavation revealed a somewhat irregularly shaped, shallow pit that lined with 2-3 cm of melted tar, with some pockets extending into the sterile sand base for approximately 10 cm. The southern extent

of the pit was not determined, due to its destruction by the demolition.

The overlying and component soils were generally the same as described for Feature 39, except that the burned lens was continuous over this feature. The ash, and particularly the charcoal lenses, were much thicker (2-8 cm) along the northwestern extent, terminating approximately 40 cm northwest of Trench 3 and the tar lens, at sterile sand, without a subsurface cultural component. The cultural lens consisted of a dark brown (10 YR 3/3) fairly compact clayey sand, 10-20 cm thick. Approximately 50-70 cm of sterile fine-grained, gray sand (10 YR 6/1) was below the tar lens, above coarse-grained, gravelly, light-colored sterile sand (10 YR 7/3).

The remnants of a partially articulated brick and mortar pier were encountered toward the southwest extent of the feature, just north of the dense building rubble. Its approximate measurements were 1 ft 9 in x 1 ft 9 1/2 in x 8 in high (bricks were 8 1/4 in x 3 3/4 in x 2 1/2 in). Two edges were three courses high, laid in a head to side pattern. The disturbed center was filled with a dense accumulation of burned and broken ceramics and glass, charcoal and ash. The cultural stratum surrounding this feature was also found underlying it, along with a thick portion (5-6 cm) of the melted tar lens.

#### **Constituents**

Materials from this feature consisted of very high densities of Chinese ceramics, glass containers, and other refuse, and lesser quantities of building debris. Two intact rolls of roofing paper (24 in long) were found just above the melted tar lens.

#### **Interpretation**

Originally, Feature 42 may have served as a pit to melt tar for water-proofing purposes and adhesion for roofing paper, during the construction or repair of the adjacent structures. It was probably filled in with debris, including the partially articulated brick pier, during the process of demolition.

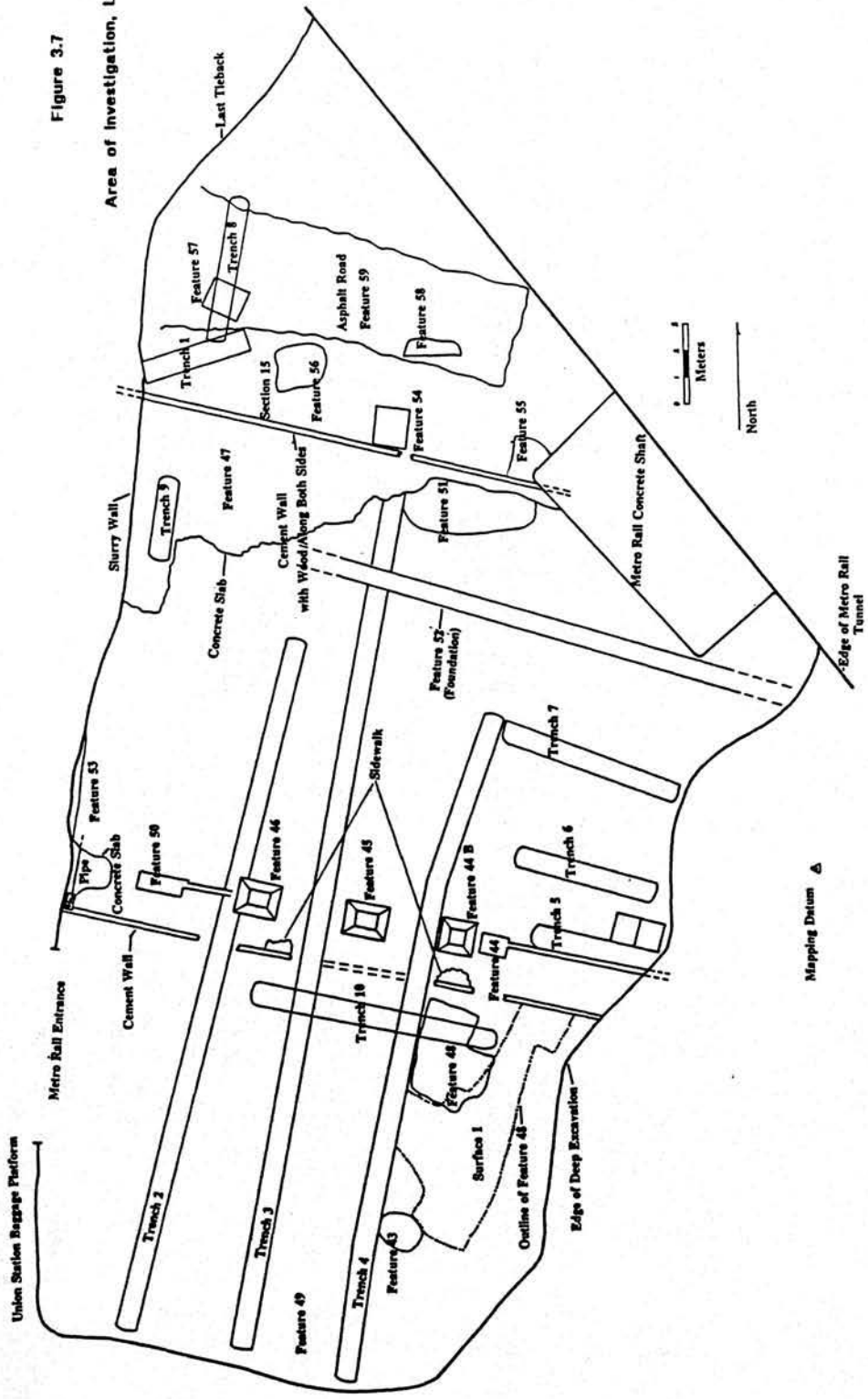
#### **LOCUS 4**

Subsequent to the construction of the Metro Rail station, a new entrance was designed to facilitate passenger traffic from the station to Union Terminal. During the excavation of this facility, Features 43-59 were encountered (Figure 3.7).



Figure 3.7

Area of Investigation, Locus 4



## Feature 43 - Building Debris and Trash Scatter

### Description

Building debris and a refuse scatter overlaid two perpendicular trenches excavated for a deeply buried water pipe "T" connection. The exposure of this feature was 80 cm north-south by 190 cm east-west, between elevations 272.41-276.86 ft AMSL. It was initially observed in the east wall of Trench 4, in the southeast area of the West End exposure.

The old trenches were dug into nearly sterile sand and covered by four continuous lenses of historical cultural fill, 35-45 cm deep. The trenches were about 85 cm deep below the fill. The east-west trending pipe was 6 in diameter and connected to a 4 in pipe that extended north. The north-south pipe trench was about 70 cm wide, and the east-west trench was at least 40 cm wide and continued into the unexcavated balk to the south. The pipe extended beyond the West Entrance exposure to the east, and west across the site area.

Five poorly preserved redwood boards were encountered. Two were horizontally parallel and 5 in apart in an east-west direction within the top building rubble lens (49 in x 31 1/2 in x 1 1/4 in). One was vertical in the east wall of Trench 4 within the refuse scatter (32 in x 1 1/4 in). The fourth board rested horizontally in an east-west direction below the rubble lens (47 in x 4 in x 4 in), and had a deteriorated 1/2 in wide board wire nailed to its side. Only the last two boards were articulated.

Thirteen soil lenses were identified in the north and east wall profiles. Levels I (gray sand with redwood boards), II (building rubble), III (concentration of artifacts), and V (less rubble, but more intact refuse) were continuous across the exposure, and sloped down to their thickest extent above the pipe trenches. Levels IV (sand and gravel) and VI-XI (various sand and silt strata) were interrupted by the pipe trenches.

Feature 43 consisted of the remnants of the Feature 49 wooden structure or fence which was located 1 m to the southwest. The northern extension of the pipe trench was identified in Feature 48, and the severed end of the pipe was exposed in Feature 44. Segments of the western extension of the pipe were encountered in Trenches 2 and 3, and it probably connected to the water meter in Feature 53.

### Constituents

The greatest densities of cultural materials existed in three of the upper lenses above the trenches (Levels II, III, and V). Level II was primarily a lens of building rubble (fired bricks, wood, concrete, and mortar, and a possible adobe brick fragment), with

lesser amounts of Chinese ceramics and bottle glass. Level III had somewhat less rubble and more refuse. Level V contained minor amounts of rubble, with more intact artifacts such as whole bottles, as well as pockets of charcoal and ash. Below Level 5, the pipe trench was delineated and screened separately. The cultural materials within the trenches decreased with depth and included small and medium mammal bones, wire nails, a portion of a leather shoe, some small fragments of glass and ceramics, and five pieces of brownware. The surrounding soil lenses were sterile except for materials introduced by faunal turbation.

### **Interpretation**

The pipe trenches were excavated into sterile sand lenses. The deposition of sheet trash occurred after the excavation of the trenches, as evidenced by the continuous nature of the deposit above and beyond the area of the depression. Building rubble mixed with some of the refuse during demolition. There were insufficient data to conclude that structural remains encountered in Feature 49 existed within this locality.

### **Feature 44 - Structural Elements**

#### **Description**

Within an exposure 4 m north-south by 9 m east-west were four structural features: 1) a brick foundation wall; 2) a large concrete pier; 3) a concrete slab; and 4) two segments of a cement curb. Other elements included identifiable construction trenches, the severed north end of a north-south metal pipe, and two shallow, rubble filled pits. It was located in the east-central area of the West Entrance excavation.

The mortared brick foundation was a combination of a stepped footing and wall with two piers. It was aligned in an east-west orientation based on magnetic north. It was at least 21.7 feet long, with the east end continuing beyond the West Entrance exposure. The disturbed western pier terminated approximately 8-12 in east of the concrete pier. The top north edge of the foundation was in alignment with the top north side of the pier.

The top of the foundation was 9 in wide. The two piers extended to the south and were 18 in wide. The disturbed western pier was 17 1/2 in long east-west, whereas the other pier was 42 in long. The base of the footing was stepped out by one course of bricks on both sides and was 12 in wide. The bases of the piers were stepped out by five courses of bricks on either side and were 30 1/2 in wide. The west end of the foundation was five courses high (1.2 feet, elevation 273.33-274.53 ft AMSL). The east end was nine courses (2.2 feet, elevation 273.41-275.61 ft AMSL). The entire surface contained residual mortar indicative of further courses. Shallow, 16 in diameter by 8 in deep rubble filled pits existed on the

southeast side of both piers. Excavation did not determine their purpose.

The poured rectangular, tapered concrete pier, located just west of the foundation, measured 48 1/2 in north-south by 50 in east-west, and was 24 in high (11 1/2 in to base of taper, 12 1/2 in to top). The top was 18 1/4 in x 24 in, and contained remnants of mortar. Wire-nailed form boards were in place around the base of the pier, and on the east and west sides of the tapered areas. It was located between 273.35-275.52 ft AMSL.

Two segments of a disturbed cement curb were located about seven feet to the south, parallel to the foundation. The segments measured 10.5 feet long, and 6.1 feet long. They were separated by 3.8 feet of disturbance resulting from a pipe trench, and by later demolition activities which destroyed the top of the entire length. The remaining portion was a maximum 8 in high. The south side of the curb was faced with about 1/4 inch of smooth, dark plaster. The north side was left rough and varied in width between 5-11 inches.

The lower portion of the western curb was abutted by a 1 in thick slab of smooth concrete, 6 feet long east-west by 3 feet wide north-south (elevation 276.01 ft AMSL). The slab extended north to about 8 in from the outer edge of the concrete pier, and was terminated by demolition. It was 5 in higher than the top of the pier. The curb was impacted between Feature 44 and Feature 45 by Trench 4, and the slab was destroyed by earlier demolition.

The north side of the east end of the brick foundation was encountered in Trench 5. The area was exposed by hand excavation. Extensive amounts of building rubble were encountered, including fragments of the various features (e.g., pieces of the curb and slab); however, the sand lenses immediately above the concrete slab were nearly sterile. Below the rubble, soil changes around the features indicated where trenches had been excavated for construction purposes.

### **Constituents**

Great quantities of building rubble (broken red bricks, wire nails, mortar, concrete, wood, and window pane fragments) were encountered, with the densest deposit north of the structural remains. Other cultural materials included pieces of cut leather, shell buttons, Chinese ceramics and medicinal vials, faunal remains, and Euroamerican bottles.

The brick foundation was parallel to the Feature 50 brick foundation on the west side of the site, and with the northern edges of the three large concrete piers located between them (Features 44, 45 and 46). None of these structural elements was articulated. Disturbed segments of the mortar curb and concrete



slab were also found to the west in Features 46 South and 53 South, and only traces of the curb were visible in the area south of Feature 45. The impacted end of the metal pipe was the northern extension of the one revealed in Feature 43.

### **Interpretation**

The two brick foundations and three concrete piers appear to be supports for a single large structure that probably extended to the north, based on the extensive amount of building rubble located in that area. However, construction of these elements does not seem to have been a contemporary event. The brick connection between Features 44 and 52 (which were of similar construction) is suggested to have been built first. Later, possibly due to remodeling or structural fatigue, the concrete piers were added for greater support. During the process of pier construction, the central area of the brick foundation was removed. This is suggested by the seemingly deliberate destruction of the west end of the brick foundation, located well below the area impacted by later demolition activities. The removal of the brick foundation and construction of the piers required the excavation of a fairly wide trench, later filled in with sand that contained moderate amounts of building debris, as opposed to the high density of debris contained in the overlying demolition layer.

The concrete slab may have functioned as a walkway adjacent to a dirt street. The curb was most likely added later since it does not articulate with the slab, but merely overlaps a broken edge. It was built with one side smoothly faced, and the other unfinished. It might have served as a sill of sorts for the nearly sterile fill found above the concrete slab, in the event that the pedestrian surface had to be elevated.

### **Feature 45 - Concrete Pier**

#### **Description**

This was the centrally located, rectangular, concrete pier that was referred to in the Feature 44 description. The original milled lumber form boards were still in place around the base and northern tapered side. A single course of 11 mortared bricks existed on top of the pier, with traces of mortar on the bricks indicative of additional superstructure. Its elevation was 273.09-274.79 ft AMSL. The concrete base measured 60 in east-west by 48 in north-south, and the wood form was 68 in x 50 in. The tapered top measured 41 in x 27 1/2 in. It was 20 1/2 in high (11 1/2 in along the vertical side, and 9 in of taper). The lower form boards were 7 7/8 in x 3/4 in, the upper form boards were 3 5/8 in x 3/4 in, and the board situated on the tapered area was 6 in x 1 in. Wire nails were observed in the boards.

It was located just east of Trench 3, in the central area of the West Entrance exposure. It was encountered 33 cm east of three isolated, bricks without mortar, aligned side by side, that were observed in the profile of Trench 3. The feature was exposed to below its base.

Clay fill capped the 25-50 cm layer of dense building debris that was mixed with sand (10YR 3/2-5/3). The 25 cm thick demolition level corresponded with the top of the south side of the pier. It sloped down to 50 cm thick on the north side and was level with the top of the vertical portion. The base of the pier was situated within sterile, fine-grained, grayish sand (10YR 5/1), overlaying a lighter, medium-grained, sterile sand base (10YR 5/3).

The feature was in an east-west alignment with the brick foundation and concrete pier of Feature 44, located 6.6 feet to the east; the Feature 46 concrete pier, 8.3 feet to the west; and the Feature 50 brick foundation, located in the west end of the site. Only traces of the cement curb that extended east-west across the exposure, just south of the brick foundations and piers, were observed, along with a few, dislodged chunks of the former concrete slab.

#### **Constituents**

Very few artifacts were recovered during the exposure of this pier, largely fragments of Chinese ceramics and bottle glass. Most of the cultural materials observed consisted of building debris, especially along the north side.

#### **Interpretation**

See Feature 44.

### **Feature 46 - Concrete Pier**

#### **Description**

This was the western, large rectangular concrete pier, similar to, and in alignment with, the Feature 44 and 45 piers. The basal form boards were still in place, with the north and south boards extending beyond the concrete form. Two additional boards, parallel to each other and to the south side of the pier, extended 24 in into sterile sand from the base of the pier. A metal pipe sloped up from the south, beneath the intact cement curb and broken concrete slab, and was mortared into the east side of the tapered form, terminating in a "T" connection on the northeast side. Remnants of mortar conforming to the former form boards were visible along the tapered sides. The various measurements are as follows:

#### Concrete Pier

Concrete base: 60 in east-west x 48 in north-south.  
Top of taper: 35 in east-west x 18 in north-south.  
Height: 23 7/8 in (vertical-12 3/8 in, taper-11 1/2 in).  
Elevation: 273.06 feet-275.06 feet AMSL.

#### Form Boards

Base: 64 1/2 in x 12 3/8 in x 7/8 in - north and south sides.  
48 in x 5 7/8 in x 3/4 in - east and west sides.  
Vertical supports (4): 12 3/8 in x 5 7/8 in x 3/4 in - east and west sides.

#### Plumbing

Pipe: 2 in outer diameter (o.d.). in "T" connection.

The pier was aligned with those in Features 45 and 44, and the Feature 44 and 50 brick foundations. The outer southern edge of the cement curb, Feature 46 South, was located 4.9 feet south of the southern edge of the pier.

#### Constituents

The upper 5-10 cm consisted of dark, fine-grained sand (10YR 3/2) that contained a low density of brick fragments and a small dense deposit of *Tivela stultorum* shells and Chinese ceramics. It overlaid a 30 cm thick lens of sterile sandy silt (2.5Y 5/2). The cultural remains recovered while exposing the pier consisted of some Chinese ceramic and bottle glass fragments. Other cultural materials observed consisted of building debris such as broken bricks, mortar, and wooden board fragments.

#### Interpretation

See Feature 44.

#### Feature 46 South - Concrete Slab and Curb

##### Description

A segment of the cement curb and concrete slab was exposed in the southern areas of Features 44, 45, and 53. It was located between Trenches 2 and 3, and approximately 4.9 feet south of the Feature 46 pier. The surface of the concrete slab was about 1 ft (elevation 276.04 ft AMSL) higher than the top of the pier.

The intact segment of the curb was 7.55 feet (2.3 m) long east-west, 0.7-1.3 feet (22-40 cm) wide north-south, and about 8 in (20 cm) high; the top had been impacted by demolition. The base of the curb was about 4-5 in lower than the top of the slab, and a small jagged lip extended from its south base, below the 1/4 in thick smooth plaster facing. The north side of the curb was crudely

constructed, as it was in Feature 44, and raggedly overlapped the top of the slab. Only two small areas of the 1 in thick concrete slab were intact, although fragments of it were observed during the process of exposure. The slab had been greatly impacted by demolition activities.

A 60-70 cm wide pipe trench was exposed on the south side of the curb, just below the overlying rubble. The 2 in diameter north-south pipe that connected to the pier in Feature 46 was about 2 feet lower than the top of the slab. The top of the pipe trench was not revealed below the surface of the slab, north of the curb.

The feature was covered by fill and a thin lens of building rubble. Soil horizons on the north side of the curb and concrete were very similar to those described for Feature 46, except that the moderately dense demolition or construction fill lens east of the pier, and just north of the curb and slab, was generally thicker and appeared to be a trench. A 2-3 cm lens of reddish clay with numerous flecks of charcoal was exposed east of the pipe trench, and south of the curb. This was overlaying 8 cm of yellowish clay (10YR 5/2-5/3). Fine-grained, sterile, silty sand (2.5Y 4/2) was the basal soil.

Other segments of the mortar curb and concrete slab were located in the southern areas of Features 44, 45, and 53. Ferrous water pipes were found in Features 43, 44, 47, 53, and in the southern end of Trench 1.

#### **Constituents**

A few fragments of bottle glass and Chinese ceramics and one shell button were recovered during this exposure.

#### **Interpretation**

Since the pipe was mortared onto the side of the concrete pier, it was probably brought in after the pier was constructed, possibly as an additional feature in the renovation of the existing building. Since the curb was not impacted by the pipe trench, and the trench was not visible below the slab, it is probable that a tunnel was bored under these features to the pier and the pipe attached prior to backfilling.

### **Feature 47 - Architectural Elements**

#### **Description**

At the north end of the West Entrance exposure were the remains of 1) a poured concrete slab; 2) a poured concrete footing; 3) three brick piers; 4) two possible segments of scored concrete sidewalks; and 5) three rubble filled trenches. This exposure measured 8 m



north-south along the west slurry wall and approximately 15 m east-west along the north concrete footing.

The remains of the slab floor were 7 3/4 feet wide north-south by at least 50 feet long east-west, and 2 1/2 inches thick. Its average elevation was 277.32 ft AMSL. The concrete was poured in wood lined sections 7 feet wide east-west by 7 3/4 feet north-south. Most of the southern extent of the slab was destroyed by an east-west rubble filled trench (No. 1). Approximately 85 percent of the cultural materials came from the overburden covering the floor. A small fragment of linoleum was adhered to the concrete west of rubble trench No. 3. Just east of the trench, were three articulated courses of bricks, possibly the remnants of a collapsed wall that covered a large piece of rubber laying on the concrete. Numerous charred wood fragments and other burned cultural materials were encountered around the section of brick wall.

Abutting the slab to the north, was a wood framed concrete footing. It measured 7 in wide at the top, 12 in wide at the base, and 12 in high. The footing extended from the west slurry wall to the concrete air shaft in the east. The entire top portion was destroyed by demolition. Its elevation was 276.11-277.26 ft AMSL.

Three brick piers were encountered at varying intervals within the footing. The western pier was 13 feet east of the slurry wall, the middle pier was 15 feet east of the former, and the eastern pier was 11 1/2 feet from the middle pier. The tops of the piers measured 12 in east-west by 13 in north-south, and were flush with the northern exterior wall. The eastern pier is described as Feature 55. The western pier was 4.1 feet high from the base (elevation 272.96-277.06 ft AMSL). A plaster coating had been applied to the lower exterior portion. The 17 courses of brick (at least seven more than the eastern pier) were stepped below the ninth course.

Two segments of scored "sidewalks" existed. One was located just south of east-west rubble trench No. 1 and the concrete floor. It was 5 1/4 feet wide by about 26 feet long and 2 1/2 inches thick. It was scored into sections of 3 feet east-west by 2 3/4 feet north-south.

The remaining segment of the sidewalk was two sections wide east-west by seven sections long north-south. The second segment of sidewalk was adjacent to the west slurry wall, in a north-south orientation. It was located south of the other sidewalk and separated from it by rubble trench No. 2. The remaining portion was 8 1/2 feet long north-south by 5 feet wide east-west, and was 4 inches thick. It was scored into sections 2 3/4 feet north-south by 3 1/4 feet east-west. No wood forms were encountered around either of the sidewalks.

The three rubble filled trenches containing brick, concrete, and wood were about 2 feet wide and 20-24 inches deep. Trench No. 1 extended across the entire east-west length of Feature 47. It impacted the south side of the concrete slab, and portions of the north side of the sidewalk, and thus separated the two features. Trench No. 2 separated the two sidewalk areas. Trench No. 3 extended from Trench No. 2 and continued to the north in the northwest corner of the feature and impacted the sidewalks, concrete slab, and footing. Areas to the south were destroyed by later demolition activities.

A thick lens of fill and about 20-30 cm of building rubble mixed with large quantities of refuse covered this feature. Below the concrete in the area west of Trench 3, was a 10-30 cm lens of fine to medium grained sand (10YR 4/1) that contained minor amounts of cultural materials and some charcoal. Sterile, medium to coarse grained sand (10YR 3/3-42) existed below. The soils to the east of Trench 3 are described in Feature 51.

### **Constituents**

Numerous fragments of Chinese ceramics, bottle glass, faunal remains, metal objects, wire nails, and other discards were recovered while exposing this feature.

### **Interpretation**

The remains of an earlier structure, Feature 51, were located below the northeastern corner of the concrete slab and footing, east of Trench 3. The east-west tending Feature 52 brick foundation was aligned parallel to the northern footing. Its projected orientation would have been under the sidewalk area of the feature, although it was aligned with rubble trench No. 2.

The concrete floor area may represent the interior of a long, narrow structure, flanked by sidewalks on the north and south. Its connection with the aligned structural elements located in the central part of the site (brick foundations and concrete piers) is unclear since there was no articulation, but they are essentially parallel in their alignments. The difference in elevation between the Feature 47 concrete slab and the impacted tops of the support units to the south is more than 12 in, although not a valid comparison since the original height of the latter elements is unknown. However, the difference in elevation between the remnant portions of the concrete slab located in Feature 53, adjacent to the west side of the brick foundation and concrete pier alignment, is only 0.24 feet. Several areas of remnant concrete were also observed between the south end of Feature 47 and the north end of Feature 53 in the slurry wall at the same elevation, although the southern paving of Feature 47 is suggested to be a sidewalk as opposed to an interior floor. The Feature 52 brick foundation which was parallel to the concrete footing, was probably not a

structural element of Feature 47, since it did not continue below the concrete slab; however, it was in alignment with one of the rubble filled trenches. The nature of the three rubble filled trenches was not established. These features may represent different sequences of construction or modification due to fire or other unknown causes, and later reconstruction in the same localities to conform to the existing street alignments.

#### Feature 48 - Paved Surfaces

##### Description

The remains of two paved surfaces were located in the southeast area of the West Entrance exposure. The upper surface, No. 1, consisted of an extremely compact 2-3 in (5-8 cm) thick, horizontal lens of rounded quartzite and granitic pebbles (2-4 cm), cobbles (5-10 cm), and crushed brick within an oily sand matrix, as a Macadam paving. This irregular surface began approximately 40 cm north of Feature 43, and continued to the north for 9.5 m to the east-west cement curb in Feature 44. It extended from Trench 4, 4+ m east beyond the West Entrance exposure. The site map shows the boundary after slumping occurred following a period of heavy rains. This paved surface was not found to continue west of Trench 4. Its average elevation was 276.60 ft AMSL.

Surface No. 2 was 18-25 cm lower than Surface No. 1, and was directly beneath it only along its southeast edge and an isolated area adjacent to the fill wall to the east. It consisted of an unmortared, single course of generally poorly fired red bricks of inconsistent size, with some well fired standard red bricks, and some large cobbles which may have been placed for repair. This paving is between 2 1/2-4 3/4 in (6-12 cm) thick, depending on the brick angles and general uneven nature of the surface. There was no pattern to the placement of the bricks. The approximate extent of the remaining surface measured 3.8 m east-west by 3.7 m north-south, at an average elevation of 275.75 ft AMSL.

Brick paving No. 2 was disturbed along the east side by the north-south pipe trench encountered in Features 43 and 44. An uneven depression of unknown cause, approximately 35 cm wide, extended across the bricks in an east-west direction. None of the bricks appeared worn enough to indicate heavy vehicular traffic, and an STP found no evidence of a pipe or other disturbances.

Most of the area 9 m north-south by 3.7 m east-west was hand exposed down to the brick level. Probing and several STPs confirmed that the entire accessible surface of the brick paving had been uncovered, except for the area in the southeast corner of the locus which was deeply buried under construction backdirt.

Immediately adjacent to the east end of the brick paving, and possibly continuing under the overburden less than a meter to the



south, was a single level of quartzite and granitic pebbles and cobbles (2-20 cm, average of 5-10 cm) within sand, at the same level as the bricks. STP excavations in the area of the brick and pebble/cobble pavements, and beyond to the south, encountered only sterile sand lenses below this cultural level.

A 5 1/2 in diameter ceramic pipe was recorded in the Trench 4, 20 cm below the undisturbed northern extent of the brick pavement. The broken end of the pipe was exposed 3.25 m east of Trench 4 in an area of disturbed soil. Two slightly larger ceramic pipes were recorded due west in Trench 3. A 95 cm long by 2-3 cm wide potential remnant of the Surface No. 1 Macadam was recorded in Trench 2, at the very surface of the trench and at the same elevation as Feature 48. Approximately 20 cm below, was a single lens of broken bricks and brick fragments associated with mortar, unlike the brick surface in Feature 48.

There were five soil lenses in this exposure: 1) fill; 2) the Macadam surface; 3) 18-25 cm of dark brown silty sand (10YR 4/2) with cultural materials; 3) the brick and aggregate lens within a fine-grained sand matrix (10YR 3/2), 5-10 cm thick; 4) a 5-10 cm thick lens of dense yellow clay (10YR 5/6), also exposed north of the bricks adjacent to the cement curb in Feature 44; and 5) 85+ cm of sterile fine-grained, moderately compacted sand (10YR 5/3). The north-south pipe trench consisted of dark brown sand (10YR 3/3) with small fragments of bricks and refuse.

### **Constituents**

The soil lens between the two paved surfaces and the areas to the north and south, beyond the brick pavement, contained a fairly dense amount of building rubble, with few fragments of bottle glass, Chinese ceramics, and metal refuse. Soil was not screened, but larger, representative or diagnostic materials were recovered.

### **Interpretation**

Both paved surfaces probably represent the remains of roads. Two strata documented in Trench 2 are suggestive of the two paved surfaces at the same elevations as those located in Feature 48, although the brick pavement was not associated with plaster. Based on a speculated projection of Surface No. 1, the road would have extended to the west, and been at least one meter farther to the south. If it had followed the exterior alignment of the existing southern east-west building, it would have been about 40 feet wide. Both surfaces were found to continue beyond the West Entrance exposure to the east. No further remains of the roads were found in other areas of the trenches.

The earlier brick pavement probably preceded the construction of the curb in Feature 44 since the base of the curb was at the same elevation as the top of the bricks. The concrete slab may have



been in contemporary use as a sidewalk adjacent to a structure, since its surface was slightly higher than the bricks. These two latter components did not abut and were separated by at least 5 feet (1.5 m) from the broken edge of the slab, which may have extended farther to the south.

Surface No. 1 was built after the brick pavement and the concrete slab since it was at least 20 cm higher. The curb was probably built prior to the Macadam road since a portion of its faced surface would have been below the grade level. Later demolition probably scraped the top of the curb to the same level. No remains of either surface were found adjacent to the other curb segment within the site.

The gravel and cobble surface adjacent to the brick pavement may have been an earlier attempt to solidify an otherwise dirt road.

#### **Feature 49 - Architectural Elements and Occupation Surface**

##### **Description**

This exposure represented the highly disturbed remains of a wooden feature and occupation surface. It was located in the southern end of the West Entrance exposure, between Trenches 3 and 4. The average elevation was 274.31-276.91 ft AMSL. The exposed area measured 4 m north-south by 3 m east-west.

During the clearing, numerous unarticulated fragments of wood were encountered, as well as three upright wood posts: one anchored in concrete; one partially supported by concrete; and one within a post hole. Other wood was suggestive of joists.

There were numerous, complicated stratigraphic levels described for this feature. In summary, they are as follows: 1) clay fill; 2) 10-15 cm of dark gray, silty clay (10YR 3/1), containing numerous fragments of cultural materials, and considered the occupation level; 3) 10-25 cm of building rubble in yellow clay, situated adjacent to some areas of the occupation level; 4) 10-15 cm of brown clayey sand (10YR 3/4) generally devoid of cultural materials; 5) 2-12 cm of tan gravelly clay fill (10YR 5/4) that contained some brick fragments; and 6) sterile, tan, medium grained sand (2.5Y 4/4).

##### **Constituents**

Numerous fragments of Chinese ceramics and bottle glass, as well as structural debris, were encountered.

## **Interpretation**

The fragments of wood, upright wooden posts, and numerous nails are suggestive of the remains of a small wooden structure. The remains of wooden structural elements were also encountered in Feature 43, located a meter to the northeast.

### **Feature 50 - Architectural Elements**

#### **Description**

This was a combination of a stepped footing, wall, and pier made of mortared bricks. It was aligned east-west, and located in the western central area of the West Entrance exposure. It was 12 feet long (3.7 m).

The eastern half consisted of a narrower stepped footing and wall that was a maximum of 18 in wide at the base, and 13 in wide at the top. The western half consisted of a stepped pier that was 31 in wide at the base, and 18 in wide at the top. It was constructed from nine courses of bricks and was at least two feet high (elevation between 274.17-276.17 ft AMSL), although remnant mortar indicated at least one more course. The base of the pier was stepped out on both sides by four courses of laterally placed bricks, with the two basal courses superimposed. The narrower eastern foundation was stepped out with one lateral brick on either side.

A hand excavated trench to below the base of the bricks revealed that the foundation had been built in a trench. The eastern end had been impacted by the backhoe while excavating Trench 2. The western end appeared to be nearly intact and representative of the pier. There were no indications of other walls stemming from this feature. Eight soil horizons were recorded around Feature 50, of which the top three sloped down to the north, and only the top two were continuous.

#### **Constituents**

A few cultural materials were recovered from the soil matrix surrounding this feature, including some bottle glass and Chinese ceramic fragments, and building debris.

#### **Interpretation**

Since the eastern end was impacted, the actual spacing between the end of the foundation and the Feature 46 concrete pier is not known. The western end appeared to be nearly intact and representative. There were no indications of other foundations stemming from this feature. The architectural elements were in alignment with the Feature 44 brick foundation, and the concrete

piers in Features 44, 45, and 46. All probably represent one wall which has been disrupted.

### Feature 51 - Burned Structural Debris

#### Description

This feature represented the burned remains of an early structure located below the southeast corner of Feature 47. It consisted of numerous levels of charred wood and charcoal above a fragile, unburned wood-planked floor, that was about 1.23 feet lower than the concrete slab of Feature 47. The floor elevation was 276.09 ft. AMSL.

Based on the east profile of the northern end of Trench 3, it appeared that this feature was a concentration of artifacts and remains of a burned wooden structure. The west wall of the trench indicated only a minor continuation of refuse. A small exploratory trench excavated north of the Feature 47 east-west concrete footing, indicated that the refuse continued. A 25 x 25 x 45 cm deep column sample was excavated into the east wall of Trench 3, 175 cm south of the footing, to define the stratigraphic levels.

A 4 m north-south by 6 m east-west area of the Feature 47 slab was exposed, east of Trench 3. All cultural materials recovered from above the slab were labelled as Feature 47, and the extent of the disturbed concrete was mapped. The concrete was then removed, and all further cultural materials recovered were labeled as Feature 51.

The north-south extent of the Feature 51 exposure was confined between the concrete footing and Feature 47 rubble Trench 1. It measured 1.75 m north-south by 2.1 m east-west. Most of the surface consisted of carbonized remains. A thin burned smear, 50 cm wide, above sterile sand, was located south of the rubble trench, and just beyond was the Feature 52 brick foundation.

During excavation, the stratigraphic levels identified in the column sample could not be defined and followed, although successive layers of material seemed to exist. The upper, disturbed 20-30 cm was removed as a balk. It consisted of a high density of carbon, building rubble, layers of charred and unburned board fragments, and extensive amounts of other refuse. A 12 in high wood concrete footing form was also exposed.

Between 30-35 cm, two displaced, 12 in x 1 in x about 36 in partially burned boards were encountered, just below the carbon zone. The remnants of two thin upright boards, possible joists, connected perpendicularly in the southeast corner, were also exposed. Both had cut nails embedded into their interior sides. At the 35-40 cm level below datum (elevation 276.09 ft AMSL), the fragile remnants of an unburned wooden floor were encountered above

sterile sand. Only a few glass and ceramic fragments were recovered from this level. The floor boards were about 5 in wide and approximately 5.6 to 6 feet long. The north end extended about an inch beyond and below the exterior base of the concrete footing of Feature 47. The southern end was just short of the southern joist. The floor boards were oriented northwest-southeast to the concrete footing. The floor began 10-20 cm east of Trench 3. It was not observed in the west trench profile, or encountered in an exploratory trench located about 50 cm farther to the west. The east extent was not determined; however, the end of the structure was probably about 5 feet beyond the known extent of the floor.

Based on the column sample, which was taken 35 cm south of the wood floor, the soil horizons were as follows:

0-6 cm: Loose, dry gray sand with gravel and pockets of carbonized material. Most of the cultural remains consisted of burned wood and mortar, along with Chinese ceramics, glass, wire nails, cloth, and small brick fragments.

6-13 cm: More compact sand with an increase in the cultural materials, particularly carbonized wood fragments.

13-20 cm: Mixed sand and carbon lenses with a decrease in both the carbon and artifact content.

20-28 cm: A distinct transition to an extremely dense deposit of carbon within sand, with much larger pieces of carbonized wood and unburned wood in disturbed layers, and a low content of other refuse which included the shattered remains of one bowl.

28-42 cm: Sand with very little carbon, and high density of faunal remains (fish bone, fish scales, eggshell, and shellfish), with some ceramic, glass, and metal fragments, and one complete brick.

42+ cm: Sterile light colored sand.

### **Constituents**

Cultural materials included extensive amounts of charred wood, building rubble, Chinese ceramics, bottle glass, and faunal remains.

### **Interpretation**

This feature seems to represent the burned remains of a wooden structure that predates the Feature 47 structure, and may be contemporary with the two privies encountered to the northeast (Features 54 and 57) based on the same ground level elevations. Feature 47 was built above Feature 51. Feature 55 represented a



smear of the burned remains, as well as its exterior, northeast basal corner.

### **Feature 52 - Brick Foundation and Wall**

#### **Description**

This feature was a mortared brick footing, and wall. It was aligned east-west based on magnetic north. The top of the wall was 1.6 feet wide, and it stepped out to 2.3 feet (72 cm) wide at the base. The more intact, eastern end of the wall consisted of seven courses of bricks (top elevation 275.52 ft AMSL); the disturbed western end had four (top elevation 274.93 ft AMSL). Traces of mortar were observed on top of the entire length. The foundation was stepped out on both sides by three courses of laterally placed bricks. The brick was laid in common bond, alternating bricks in rows set head to head, side by side, and side to head. The foundation was at least 50.6 feet (15.2 m) long, with its east end continuing beyond the West Entrance exposure. The west end was destroyed by demolition approximately 1 m west of the northern end of Trench 3, where it was first observed.

It was exposed by hand excavating a 90 cm wide trench through 20-110 cm of fill and building rubble, from west to east. The foundation was built in a trench cut into sterile sand. It did not articulate with any of the other features.

Overlying the building rubble and foundation was a thick layer of the imported fill which consisted of cobbles in a matrix of mottled clay. Immediately below the fill, was the stratum of demolition debris and cultural materials intermixed in gray-brown sand (10YR 4/2), that varied between 35-50 cm thick. Most of the broken bricks were located about 6 m east of Trench 3, and south of the foundation. Adjacent to the intact portion of the foundation, was sterile grayish brown, fine-grained sand (10YR 4/2), overlaying medium-grained light colored sand (10YR 6/3).

#### **Constituents**

The artifactual materials were derived from the demolition layer immediately above the intact portion of the foundation. Materials consisted of building debris (broken red bricks, pieces of milled lumber, mortar fragments, and window glass), as well as Chinese ceramics, bottle glass, leather, metal and other domestic or commercial items.

#### **Interpretation**

The data suggest that this feature was not a structural support associated with Feature 47 since it did not continue below the northern, semi-intact area of the concrete slabs. However, it was found to be in alignment with rubble filled Trench 2. When this

area was tested by mechanical means (Trench 12), brick rubble was also found below the sidewalk and concrete floor, which suggests that it pre-dated Feature 47.

It may represent an exterior foundation associated with the structural supports located in the central area of the site, especially since no other foundations were encountered between these features. The feature was essentially parallel to the concrete footing in Feature 47 and the structural alignment located in the central area of the site.

### **Feature 53 - Brick Foundation and Wall**

#### **Description**

This feature was a portion of a stepped, mortared brick foundation and wall, aligned north-south based on magnetic north. It had been severely impacted by the construction of the west slurry wall, and the remaining intact segment was located directly adjacent. It was 10.4 feet (3.17 m) long by 10 in (26 cm) wide, and 12-15 in (30-38 cm) high. It consisted of four to five courses of bricks, stepped out along the two basal courses. The pattern of the construction bond consisted of the basal and top courses laid side by side, and the middle courses laid head to head in profile. The foundation was located between 276.44-277.39 ft AMSL.

A 2 1/2 in thick layer of smooth mortar topped the southern 35 in of the foundation. The impacted slab extended 4 feet to the east toward and 1 1/4 feet above the Feature 50 brick foundation, and 6 1/4 feet to the southeast, where a concrete water-meter box was incorporated in the slab. Broken segments also abutted the north side of the curb that extended east-west across the site. The thin concrete slab adjacent to the curb in Features 44 and 46 was not found within this exposure. However, fragments of the thicker slab were encountered during the exposure of the curb and Feature 50 brick foundation. Other segments of the concrete slab were observed within the slurry wall at the same elevation.

The water meter was within a rectangular concrete box that contained control mechanisms, e.g., shut-off valve, gate valve, water reducer valve. The base of the box was not lined. Segments of the wood form were still intact along the north and east sides. It measured 32 in north-south by 23 in east-west, and was 12 in high. Several inches below the water control mechanisms and a 2 1/2 in water pipe, was a 6 1/2-8 in ceramic sewer pipe. Both pipes continued north, but were impacted by the slurry wall to the south.

Fill and sand mixed with moderate amounts of building debris covered the concrete slab, curb, water-meter box, and foundation. Adjacent to these features was fine-grained, moist, loose sand (10YR 5/2), that contained the ceramic and glass refuse. Sterile, dry, coarse-grained sand (10YR 6/2) existed below the features.

## Constituents

A moderate amount of Chinese ceramic and bottle glass fragments was recovered during the exposure, as well as some building debris, chunks of the curb, and concrete slab.

## Interpretation

The foundation does not seem to be associated with the adjacent east-west aligned support features, due to its higher elevation (the top of the concrete was 1.2 feet higher than the top of the Feature 50 foundation, and the base was 2.2 feet higher than the base of the foundation). However, the concrete slab was at the same general elevation as the sidewalks and floor of Feature 47, as well as the concrete segments observed in the slurry wall between the two features. Other plumbing features were encountered southeast of the water meter: two east-west ceramic pipes in Trench 2, and one each in Trench 4 and Feature 44; metal pipes in Features 43, 44 and 46, and in Trenches 2, 3, and 4. In the northern area of the site, one metal pipe was exposed just south of the concrete slab, adjacent to the slurry wall, and one in Feature 55, below the concrete slab. Current historical documentation (Dakin 1889 and Sanborn 1925) does not identify any structures that match the location of this foundation and wall. Based on the higher elevation of the foundation relative to Feature 50, another adjacent footing, it is evident that this feature post-dates 1925 and is the remains of a later, but currently undocumented structure.

## Feature 54 - Privy

### Description

This was a rectangular, wood-lined pit filled with a dense deposit of refuse. It measured 5.1 feet (154 cm) north-south by 3.9 feet (115 cm) east-west, and 3.1 feet (94 cm) deep, with elevation between 273.95-276.05 ft AMSL. It was located in the north end of the West Entrance exposure, north of Feature 47. It was approximately 1 ft (30 cm) lower than the Feature 47 concrete floor, and 50-62 cm to the north. It was excavated and screened as a single entity, and no definitive strata were noted.

The wood lining consisted of 1 in thick x 6 in wide laterally placed planks, with 4 x 2 in corner supports. The nails were too corroded to determine their type.

Sand containing moderate amounts of building rubble covered this feature, and was also mixed in with the top 30 cm of the refuse deposit. The soil matrix of the cultural deposit was a fairly friable, dark brown sand (10YR 3/2) with inclusions of clay and organic material that terminated in sterile, dense, dark brown mottled clay. The clay was augered to a depth of 30 centimeters.

## **Constituents**

The fill contained many nearly intact soy sauce jars, Chinese ceramics, glass bottles, broken and whole red bricks, particularly in the upper 30-50 cm, and fragments of other domestic or commercial refuse.

## **Interpretation**

This feature was probably a privy, later filled in with refuse. Demolition activities probably destroyed the superstructure and deposited the bricks and metal pipe segment encountered in the upper 30 cm of the deposit. Feature 57, located about 6 m to the west, was a similar, slightly larger and much deeper wood-lined feature. The other two refuse deposits, Features 56 and 58, were also located in this area, north of Feature 47.

### **Feature 55 - Burned Structural Remains**

#### **Description**

This feature was located below the northeast corner of Feature 47, and just north of the concrete footing. It consisted of the exterior remains of the earlier structure encountered in Feature 51. Successive layers of burned wooden board fragments and charcoal were exposed north of the footing. Adjacent to and below the footing of Feature 47 were the crudely constructed remains of a possible brick base for the wooden floor.

A 3.5 m north-south by 3.75 m east-west area was shovel scraped to delineate the extent. Three test trenches demonstrated the various layers of scattered burned wood and thick deposits of charcoal. A line of 1 in thick, 8 1/4 in wide, upright boards was found 14 in north of the footing, just below the level of its base. The tops were burned and the remaining portions were about 8 in high, and continued west for about 3 feet. The east end was attached to the remains of a single horizontal board.

The upright boards outlined a somewhat circular configuration that consisted of two rows of at least eight dry laid, upright bricks, that supported two courses of bricks laid side by side. Only traces of mortar were observed in the upper two courses. The lower course curved under the footing, just east of the brick pier situated within the footing. Beyond this area to the west were jumbled bricks and brick fragments, and numerous cobbles. When this was cleared away, the impacted ends of the Feature 51 wooden floor boards were exposed in the profile, just east of the pier, and just below the base of the footing. West of the pier, and at the same general level as the floor, was a thick deposit of charcoal and ash, above a single course of bricks.



The third trench was excavated along the east side of the north-south board set on edge, below the concrete slab. Extensive amounts of charred wood and charcoal existed above a line of four intact bitters bottles situated above sterile sand and against the board. The plank bordered two rows and three courses of dry-laid bricks, placed side by side. This feature ended at a rubble-filled trench. The interior was not completely exposed to the level of the adjacent wood floor.

During the exposure of the north side of the footing, two metal brackets or braces, 2 feet apart, were found attached to the top of the exterior wood form board, east of the pier. The pier consisted of 10 courses of bricks. The lower four, stepped courses, just below the base of the footing, were crudely laid and mortared. The basal course was one brick lower than the adjacent, earlier feature.

Soils inside the structure were comparable to those described for Feature 51, except that the deposits of both charcoal and ash were much more extensive and much thicker. Extensive amounts of charcoal and ash were also observed within the brick feature north of the footing.

#### **Constituents**

Very few cultural materials were recovered from the area north of the footing. However, the numerous materials saved from the area of the third trench and interior of the structure were comparable to the density and diversity of Feature 51. Whole and broken Dr. Hostetters' Bitters bottles were found upright against the outside wall of the burned wooden structure.

#### **Interpretation**

This feature represents the exterior northeast corner of the structure encountered in Feature 51. The bricks may have functioned as a crude floor support, that did not continue along the entire structure. The large quantities of burned wood, located both inside and outside, are suggestive of a wood framed structure, with the north area representing the remains of a fallen wall. The extensive amount of ash and charcoal suggests that the structure was destroyed by fire.

### **Feature 56 - Trash Pit**

#### **Description**

This was a moderately dense deposit of refuse within what appeared to be part of a former trench or oblong pit. It measured 220 cm long north-south by about 110 cm wide east-west, and sloped up from 70 cm in the south, to just beneath the asphalt road bed in the north (elevation between 274.2-276.57 ft AMSL). It was located in

the north end of the West Entrance exposure, and encountered in an exploratory posthole.

The deposit was located below fill and a thin scatter of building debris. It was generally confined within friable, medium-grained, brown sand (10YR 5/4), surrounded by friable, medium-grained tan sand (10YR 6/3).

#### **Constituents**

Cultural materials included one intact soy sauce jar, fragments of such jars, various Chinese ceramics, bottle glass, and metal fragments.

#### **Interpretation**

It may have been an intentional refuse deposit corresponding to a single event of deposition. It was located in the same general area as the other refuse deposits, Features 54, 56, and 58, and 1.8 m north of the Feature 47 structural remains.

### **Feature 57 - Privy**

#### **Description**

This was a rectangular, wood lined pit that contained a dense deposit of refuse, similar to Feature 54. It measured 3.95 feet (120 cm) east-west by 5.4 feet (163 cm) north-south, and was approximately 9 feet (3 m) deep. It was located in the north end of the West Entrance exposure and encountered 35 cm below the top of the asphalt road (Feature 59) in backhoe Trench 8. The trench impacted 15-30 cm of the eastern side of the pit. It was excavated as a single entity and only diagnostic, representative, and intact materials were collected.

The pit was excavated to 1.5 m, then augered. The auger boring determined the presence of at least another 1.5 m of cultural materials. Due to the danger of sidewall collapse, the remaining deposit was removed by mechanical means, and the backdirt was examined. The final depth of the wood lining was not determined, but is known to have been at least 170 cm deep. The wood was 1 in thick and 6 in wide, the same as Feature 54. Cut nails were observed in the western 1 1/2 in x 1 1/2 in corner braces.

The deposit consisted of dark brown, friable sand, with some clay inclusions, and terminated at alluvium.

#### **Constituents**

It contained a dense deposit of Chinese ceramics, glass bottles, and food remains, such as mammal, fish, and bird bones, shellfish and eggshell fragments. Other materials included clothing, a

coffee pot, wok, opium pipe fragments, and other domestic or entrepreneurial refuse.

### **Interpretation**

This feature was probably a privy that was abandoned and subsequently used as a refuse pit. The feature was approximately 6 m west of the Feature 54 wood-lined pit, and at the same elevation. It was located approximately 3.7 m north of Feature 47.

### **Feature 58 - Trash Deposit**

#### **Description**

This was a small, concentrated refuse deposit within a moderately sparse refuse scatter that was intermixed with some building debris. It was located below the asphalt road (Feature 59) in the north end of the West Entrance exposure. The concentrated area measured 37 cm east-west by 30 cm north-south, and 50 cm deep; the scatter was 220 cm north-south by 50-70 cm east-west, and 30 cm deep. This deposit was between 274.67-247.27 ft AMSL. It was encountered in the east wall of a hand excavated exploratory trench and removed as a single entity.

The feature was below 10-12 cm of dark mottled brown, compact gravelly, clayey-sand, that contained some oil (base material of the asphalt road). The feature matrix consisted of friable, medium-coarse, light brown sand (10YR 5/4). The surrounding and underlying soil consisted of light-colored, friable, coarse sand (10YR 6/4). It was located approximately 3.5 m north of the structural remains of Feature 47, and approximately 27 cm lower than the top of the concrete slab. It was 47 cm (18.5 in) below the top of the asphalt road.

#### **Constituents**

The primary constituents of the concentrated deposit were broken bitters bottles and one intact ceramic ale bottle. The scatter consisted of broken red bricks, intermixed with fragments of bottle glass, Chinese ceramics, metal, and other domestic refuse.

#### **Interpretation**

The concentrated aspect of the feature appears to be the result of a random deposit, rather than an intentional refuse pit, within an area of demolition debris.

## Feature 59 - Asphalt Pavement

### Description

This feature was a portion of an asphalt pavement that was impacted by the construction of the west slurry wall in the north and an air shaft in the south. It was located in the north end of the West Entrance exposure and oriented east-west. It measured 11.5-18 feet (5.5-3.5 m) wide by 46.7 feet (14 m) long, and 4 in (10 cm) thick, between 277.45-277.81 ft AMSL. It was encountered during the mechanical removal of overburden.

A sparse scatter of broken red bricks and mortar fragments was found over the pavement below the clay fill. Most of the asphalt surface was overlaying coarse, light-colored sand (10YR 6/4), although moderate amounts of building debris existed below.

### Constituents

No cultural remains were encountered with this feature, other than a thin scatter of building rubble.

### Interpretation

The asphalt pavement is probably associated with the former structures of Chinatown, and could be an alley for vegetable peddlers' wagons to access and leave the parcel. The 1925 Sanborn map depicts corridors on the north and south sides of the large building at 810 Juan Street. It was located 2.5-3.0 m north of the Feature 47 structural remains, and was 37 cm above Feature 57 and 47 cm above Feature 58.

### SUMMARY

A total of 59 cultural features was documented during the archaeological investigations. The features roughly correspond to five types: trash deposits - 24; architectural features - 13; landscape features, e.g., fence posts - 6; privies - 2; and paved surfaces - 2.

The field work was successful in relocating deposits, structures, and roads which had been considered destroyed, correlating many of them with specific addresses and functions, and in recovering data useful in interpreting the way of life in a limited section of the Los Angeles Chinatown. The artifact recovery was high in almost every location tested. Cultural materials from the exposures and excavation units spanned a wide range of types, and were in a functional and specific chronological context.



#### 4. CERAMICS

##### The Chinese Table

The Chinese ceramics are typical of those made in south China, the major source of immigration. They are folk wares made and imported for the use of Overseas Chinese, as opposed to the Export wares produced for the Euroamerican market since early days. While most of the assemblage represents forms and types found on other Chinese sites in America, their ultimate research value will be in comparing the proportions of types in chronologically secure and culturally unmixed contexts. For this site, horizontal distributions can be used to ascribe household or commercial units of deposition and, by correlation to the historical data, the pattern of site development. Certain of the more refined examples may indicate owners of higher status, and many of these are described individually.

The table service usually consisted of one or more serving bowls, as the meal required, individual rice bowls for each individual, tea bowls, wine bowls, condiment dishes, chopsticks and porcelain spoons, a teapot, and often, another spouted pot for wine, oil, or soy sauce decanted from a large jar. The numbers on Table 4.1 reflect the proportions within the Chinese assemblage; of all porcelain tablewares, rice bowls constituted 34 percent, large bowls 18 percent, tea bowls 13 percent, and spoons 11 percent. Other forms occurred in lesser frequencies. When the Japanese rice bowls are included in the calculation (as they should be), the rice bowls account for 36 percent of all porcelain.

The major porcelain types recovered are Bamboo, Four Seasons, and Celadon (Figure 4.1). The first of these is a porcellaneous stoneware body which has been in the past variously called Three Circles and Dragonfly, Swatow ware, or Blue Flower Ware, and occurs only as rice bowls. They are cruder than the others, thick walled, and heavy, with a sharply carinated shoulder just above the rim foot. Bodies tend to be gray and of a coarse texture, containing more grog than the translucent porcelains. The decoration is cobalt blue, hand painted under the glaze with plant forms, circles, and the representations interpreted as dragonflies. There is typically a blue line where the foot joins the body, and another at the rim, and a comma-like mark in the center of the interior. Inventory records confirm that this was one of the cheapest varieties of rice bowl, comprising up to 80 percent of those recovered from railroad and mining sites of the 1870s-1880s (Sando and Felton 1993:163-165). In Los Angeles, this pattern represented nearly 41 percent of the rice bowls (Table 4.2).

The Four Seasons pattern and the distinctive glaze called Celadon, Celadon-type, or Winter Green, are among the more expensive types, aside from the unique occurrences. While the Bamboo bowls and



**Figure 4.1. Major Patterns of Tableware**  
(a. Double Happiness; b. Bamboo; c. Celadon;  
d. Four Seasons; e. Sweet Pea or Simple Flower)  
(reproduced from Sando and Felton 1993:158)

Table 4.1. Porcelain									
Provenience	Rice Bowls	Tea Bowls	Wine Bowls	Footed Serving Bowls	Spoons	Large Bowls	Plates	Condiment	Japanese
Analytical Unit 1	333	105	19	21	92	152	77	60	26
Feature 1	15	7	2	0	3	12	9	6	1
Feature 2	16	13	6	1	7	11	3	7	0
Feature 3	10	6	3	0	6	8	2	1	0
Analytical Unit 2	13	5	0	6	7	3	0	1	1
Feature 11	3	2	0	0	4	3	1	2	0
Feature 12	4	0	1	1	1	7	1	0	1
Feature 16	16	5	3	2	6	3	2	4	2
Feature 18	3	11	0	0	0	1	1	1	0
Combined Feature	32	10	10	1	10	21	10	9	2
Feature 22	26	3	0	0	2	10	6	5	0
Feature 27	3	1	1	0	3	5	3	4	3
Feature 29	139	71	7	14	46	95	35	32	17
Feature 30	9	4	1	0	7	2	1	2	0
Feature 31	6	1	1	1	2	3	1	2	0
Feature 32	15	12	3	0	9	3	7	5	1
Feature 33	1	2	0	1	1	2	0	4	0
Analytical Unit 3	11	7	1	0	6	2	1	3	1
Feature 38	2	0	0	0	2	3	4	5	0
Feature 39	26	12	3	0	17	21	8	9	8
Feature 40	6	6	0	0	6	4	0	1	1
Feature 41	10	3	2	0	4	4	2	7	2
Feature 42	11	1	0	0	6	5	5	4	5
Feature 43	9	0	0	0	1	4	2	2	0

Table 4.1. Porcelain									
Provenience	Rice Bowls	Tea Bowls	Wine Bowls	Footed Serving Bowls	Spoons	Large Bowls	Plates	Condiment	Japanese
Features 44, 45, 46, and 50	7	1	0	0	0	2	1	2	1
Feature 47	5	0	0	0	0	2	0	0	0
Feature 48	0	0	0	0	0	0	0	0	0
Feature 49	4	1	0	0	0	4	3	2	0
Features 51 and 55	17	1	5	0	0	9	4	7	1
Feature 52	0	0	0	0	1	0	0	0	1
Feature 53	0	0	0	0	0	0	0	0	0
Feature 54	13	1	2	0	1	2	0	0	0
Feature 56	6	0	1	0	0	3	0	0	0
Feature 57	6	1	0	0	0	2	1	0	0
Feature 58	3	0	1	0	1	1	2	0	0
Feature 59	0	0	0	0	0	0	0	0	0
A-136	0	0	0	0	0	1	2	2	3
Emergency Exit 10	3	1	0	0	3	2	1	0	0
West Entrance	4	1	0	0	2	3	2	0	0
	787.00	294.00	72.00	48.00	256.00	415.00	197.00	189.00	77.00



other inexpensive types averaged from 2-5 cents each in 1870 - 1884, the Four Seasons and Celadon bowls ranged in value from 6.5-8.7 cents apiece (Sando and Felton 1993:163). The Four Seasons pattern occurred on the greatest number of different shapes: serving bowls, rice bowls, tea and wine bowls, spoons, condiments, and plates. Many of the teapots with polychrome floral designs would have seemed to match. Celadons, on the other hand, did not occur as serving bowls and only rarely in flat or plate form. Using rice bowls, common to all types, as the criterion, the distribution among types is as follows:

Table 4.2. Types of Rice Bowls

Bamboo rice bowls	40.8 %
Celadon rice bowls	40.0 %
Four Seasons rice bowls	8.9 %
Figural (genre) paintings	2.7 %
Unique or one-of-a-kind rice bowls*	3.3 %
Japanese rice bowls	4.3 %

\*Includes 4 Double Happiness style.

The Celadons (Table 4.3) may more properly be called Celadon-type, since they are variable in quality and rarely possess the depth and richness of the classical Chinese glazes. As used here, Celadon refers to color, rather than technical analysis of the glazes. All are wheel thrown with fine white bodies, highly burnished. The bowls have a very slightly flared rim, and a white or wiped border which is occasionally burned to light brown. The glaze formula is much the same as that used for the stonewares, but with less iron oxide (Kibler, personal communication 1991).

While it has been accepted for some time that such green bowls which have been overpainted are Japanese, new questions are arising about the origin of the undecorated celadon-type wares as well. From technical studies of the elemental composition of the glazes, the Chinese products of the nineteenth century seem to have less calcium and phosphorous than the Japanese, and none at all in the twentieth century imports (Stenger 1993:327-328). Iron and manganese may be chronological indicators as well, since they were not present in samples dated ca 1870-1890, but are significantly present in 1910-1930. A preliminary small group of samples was tested by Stenger at the Institute of Archaeological Studies, Portland. The results suggest that the Los Angeles Celadons contained lower amounts of manganese, potassium, calcium, and sodium than sites of the 1870s-1880s in Idaho and Nevada, and they were comparable to Japanese Celadons and the Japanese blue and white transfer printed bowls in the percentages of potassium and sodium (Appendix IX). Stenger has commented further that the ceramics from Los Angeles were produced in many different kilns, and display more diversity in clays within each category than samples from other sites (personal communication 1991).

Table 4.3. Celadon								
Provenience	Serving Bowls	Plates	Rice Bowls	Tea Bowls	Wine Bowls	Spoons	Condiments	Total
Analytical Unit 1	0	6	164	49	3	25	1	248.00
Feature 1	0	1	8	5	0	0	0	14.00
Feature 2	0	0	7	8	0	0	0	15.00
Feature 3	0	0	5	6	1	0	0	12.00
Analytical Unit 2	0	0	8	4	0	1	1	14.00
Feature 11	0	0	2	2	0	0	0	4.00
Feature 12	0	0	1	0	0	0	0	1.00
Feature 16	0	0	8	1	0	0	0	9.00
Feature 18	0	0	1	8	0	0	1	10.00
Combined Feature	0	0	16	3	0	0	1	20.00
Feature 22	0	0	12	2	0	0	0	14.00
Feature 27	0	0	2	0	0	0	0	2.00
Feature 29	0	4	13	24	1	2	1	45.00
Feature 30	0	0	3	2	0	0	0	5.00
Feature 31	0	0	4	0	0	0	0	4.00
Feature 32	0	0	3	7	0	0	0	10.00
Feature 33	0	0	0	2	0	0	0	2.00
Analytical Unit 3	0	0	3	2	1	0	0	6.00
Feature 38	0	0	1	0	0	0	1	2.00
Feature 39	0	0	14	0	0	1	2	17.00
Feature 40	0	0	3	1	0	0	0	4.00



The Four Seasons ceramics (Table 4.4) are, with the Celadons, among the more expensive patterns (Sando and Felton 1993:163-164). Here as elsewhere, all of the large serving bowls and plates of various sizes are of this style. All pieces are overpainted in polychrome enamel florals symbolic of the annual seasons, with the peach signifying longevity in the center of the interior.

The Double Happiness (or, Swirl) pattern was found on only four rice bowls and a number of fragments. This is among the earliest, as well as the cheapest, varieties, and occurs only rarely after the 1860s. They were even less expensive than the Bamboo bowls, and represented by only a single entry, in an 1873 inventory (Sando and Felton 1993:160). These are painted in blue under the glaze, and not to be confused with the overpainted, enamel double happiness symbols which do occur on tea and wine bowls as elements interspersed between other designs. The bodies are a thick gray porcellaneous stoneware with a rolled rim and dry ring foot. The shape is distinctively broad but shallow. The larger examples (UPT-2859, 4041) measure 16.5 cm at the rim, with a foot diameter of 6.6 and 6.7 cm; these are 6.3 and 6.7 cm high, respectively. The smaller size, represented mostly by fragments, has a ring foot with diameter of 5.3 cm and height of 1.0 cm. All have double blue line borders just below the rim and at the juncture of foot and body. Interiors are undecorated. The more intact examples are all from Feature 29, with small fragments recovered from Features 17A (2 ex.), 18, and 24.

## Spoons

### FOUR SEASONS

These spoons are thicker and more crudely prepared than other spoons (except for celadon). The stems are short and the bowls are smaller with an angular flare on both sides. The base has a dry foot and the glaze is applied over the slightly uneven surface. The glaze is very light green/grey. The center of the spoon depicts a peach which is surrounded by the flowers of four seasons. The flower outline is done roughly in black and the colors (green, purple, pink) are unevenly dabbed on the outline.

No. of examples: 92

Percent of all spoons: 35.9

### POLYCHROME FLORAL ON WHITE

Although related to Four Seasons, this group is distinguished by a clear glaze on the white body, and a variant of the floral pattern. The floral elements and colors are similar, but rather than the typical four motifs of the Four Seasons, these spoons have an overall decoration. The colors include pink, orange, light green, dark green, blue, and purple. The design elements are finely executed in black outline and then filled in with color. The floral



Table 4.4. Four Seasons Ceramics

Provenience	Serving Bowls	Plates	Rice Bowls	Tea Bowls	Wine Bowls	Spoons	Condiment	Total
Analytical Unit 1	152	71	27	10	16	32	59	367.00
Feature 1	12	8	3	1	2	0	6	32.00
Feature 2	11	3	3	0	6	3	7	33.00
Feature 3	8	2	1	0	2	3	1	17.00
Analytical Unit 2	3	0	2	0	0	1	0	6.00
Feature 11	3	1	0	0	0	2	2	8.00
Feature 12	7	1	0	0	1	0	0	9.00
Feature 16	3	2	0	0	3	2	4	14.00
Feature 18	1	1	1	0	0	0	0	3.00
Combined Feature	21	10	1	0	10	5	8	55.00
Feature 22	10	6	4	1	0	2	5	28.00
Feature 27	5	3	1	1	1	1	4	16.00
Feature 29	95	31	19	14	6	16	32	213.00
Feature 30	2	1	1	0	1	3	2	10.00
Feature 31	3	1	1	1	1	2	2	11.00
Feature 32	3	7	1	0	3	6	5	25.00
Feature 33	2	0	0	0	0	1	4	7.00
Analytical Unit 3	2	1	1	0	0	1	3	8.00
Feature 38	3	4	0	0	0	1	4	12.00
Feature 39	21	8	1	1	3	4	7	45.00
Feature 40	4	0	0	0	0	3	1	8.00

Table 4.4. Four Seasons Ceramics

Provenience	Serving Bowls	Plates	Rice Bowls	Tea Bowls	Wine Bowls	Spoons	Condiment	Total
Feature 41	4	2	1	1	2	0	5	15.00
Feature 42	5	5	1	0	0	1	4	16.00
Feature 43	4	2	0	0	0	0	2	8.00
Features 44, 45, 46, and 50	2	1	1	0	0	0	2	6.00
Feature 47	2	0	0	0	0	0	0	2.00
Feature 48	0	0	0	0	0	0	0	0.00
Feature 49	4	3	0	0	0	0	2	9.00
Features 51 and 55	9	4	0	0	4	0	7	24.00
Feature 52	0	0	0	0	0	1	0	1.00
Feature 53	0	0	0	0	0	0	0	0.00
Feature 54	2	0	0	0	2	1	0	5.00
Feature 56	3	0	0	0	1	0	0	4.00
Feature 57	2	1	0	0	0	0	0	3.00
Feature 58	1	2	0	0	1	0	0	4.00
Feature 59	0	0	0	0	0	0	0	0.00
A-136	1	2	0	0	0	1	1	5.00
Emergency Exit 10	2	1	0	0	0	0	0	3.00
West Entrance	3	2	0	0	0	0	0	5.00
	415	186	70	30	65	92	179	1,037.00

symbolism is the same: the bowl of the spoon has a chrysanthemum with a locust on it, the tip of the spoon depicts a water lily, above the heel of the spoon is a four petalled flower (cherry blossom?), and around the sides and on top of the handle are small flowers in blue or orange (peony?). All of the bases showed stilt marks, and 13 had square red seals.

No. of examples: 49

Percent: 19.1

#### CELADON

These spoons are similar in shape and manufacture to the Four Seasons. The tips are more rounded and the sides flare out. Most of the bases have a hand drawn blue mark under glaze. Some marks are real or simulated Chinese characters while others consist of one to three parallel lines. The spoons have a dry foot.

No. of examples: 29

Percent of Total: 11.3

#### OTHER TYPES

Nine additional spoons had polychrome floral designs painted over a solid-colored background which was blue, aqua, yellow, or black. Six spoons have finely rendered paintings of dragons, and 11 depict carp in green or red-orange, swimming among seaweeds; both types under the glaze. Three were overpainted in Rose Canton motifs, and five with other figurals. Five carried symbols of the Eight Treasures. Three were white with gilding, and the balance, were white fragments with no design elements present.

#### Tea Bowls

This group of 294 bowls is differentiated from those used for wine or other spirits by their larger size. They are more variable in dimension and basic form than the other categories. Three examples illustrate this range:

a. UPT-4080. Tall with straight sides. Genre scene with figures and animals painted over clear glaze. 5.5 cm high, rim diameter of 7.5 cm, dry ring foot 3.2 cm diameter. Red stamp on base.

b. UPT-4245. Medium height with flaring rim. Blue-green glaze overpainted with orange carp and green foliage. 4.1 cm high, rim diameter 6.7 cm, dry foot ring of 3.2 cm, no base marks.

c. UPT-2858. Very shallow and broad. Fungus design painted in blue under the glaze; double blue line and single brush stroke on the interior. Height is only 3.8 cm, rim diameter is  $\pm$  8.0 cm, and small, dry ring foot is 2.5 cm. Although short, it would still hold more than the wine cups.

#### CELADON

Celadon was the most common type of tea bowl, with 129 examples representing 57.7 percent of the total. The celadon tea bowl has a gently flaring rim that is white and a dry footring. In most cases there is a blue hand-drawn mark or line under glaze on the base of the bowl.

#### FOUR SEASONS

Included in this category are 30 bowls with the typical flowers of the Four Seasons painted in enamel over the glaze. The glaze has a slightly blue-green tinge. The average height is 5.2 cm with a diameter of 6.7 cm. Two examples are of a different size: height 3.7 cm and diameter 6.0 cm. These seem too small for tea but too large for wine. This type is represented by 10.2 percent of all tea bowls.

#### FOUR TREASURES

These bowls have white interiors and bases and an orange exterior. Over the glaze are the four treasures drawn in fine line black and painted over in polychrome. In most cases the paint application is poorly executed. UPT-4086 has longevity signs between the treasures. This group of 15 constitutes 3.1 percent of the total.

#### DOUBLE HAPPINESS

Double happiness symbols in orange are interspersed between the typical polychrome Four Seasons flowers on clear glaze. This group numbers seven and amounts to 1.6 percent of the total.

#### ROSE CANTON

These cups have two pictorial panels, one with a rose, the other with figural design. The representations are drawn in fine line and are covered with polychrome enamels. Some remnants of gilding can be seen on most bowls. There is no base mark. Two of the cups are octagonal. The 21 examples represent 5.0 percent of total.

#### CARP

This motif occurs in two styles. a) Orange carp with green seaweed on white background. The carp is rendered in very fine lines and detail. b) Three bowls have brown glaze outside, very light blue interior, with blue carp and stylized seaweed under glaze.

The iridescent brown exterior of the latter variant resembles the "Batavian" landscape bowls which have been dated back to ca. 1750 (Christie's 1986:101), although it is not suggested that these are that old. Batavian was a favorite with Dutch exporters, the name deriving from Dutch East Indian settlement of Batavia. The lustrous



brown glaze (tzu chin) is formed like celadon by mixing ferruginous earth with ordinary glaze. The shades produced are those of bronze, coffee, and dead-leaf brown; the origin of Batavian porcelain is late K'ang Hsi, 1662-1722 (Hobson 1976:191).

The fish design on the interior (fish swimming among water plants) was used in ancient art to symbolize power and rank (R.L. Hobson 1976:294).

#### PINK AND GREEN FLORAL ON WHITE

These are 22 white bowls with a pink floral design over glaze with green leaves and gilding in the form of small spatter of flowers or a Chinese character in gold. There are no base marks and the group comprises 4.3 percent of the total.

#### LONGEVITY

Border design consists of diamond or hexagonal pattern interspersed with double knot or a flower design in orange. Longevity symbols, in groups of six or eight, are painted over the glaze in alternating colors of red and green enamel on 27 examples.

The footring is dry. Base marks vary: a red knot, square seal, and a stamp reading "China" in a reversed, mirror image (UPT-126). This last was probably shipped after 1890. Two cups have octagonal panels with a longevity symbol on each panel and leaf design in enamel at border. There are variations in longevity patterns and symbols on UPT-4805 and UPT-3263. This type is represented in 6.6 percent of the total.

#### GENRE

Three bowls are white porcelain with fine outlines of figures in black or red, and the shapes filled rather carelessly with enamel. There is some evidence of fine line gilding over the enamels. There are three Chinese characters on one cup.

#### WHITE DESIGN ON ORANGE GLAZE

White plant motif with Chinese characters on a bowl otherwise glazed orange. This seems to be some form of resist method: the design elements are actually the white porcelain body with a clear glaze applied over all.

#### DRAGONS

The footring of this type has a fine black line design of vegetation then covered with green enamel. The dragons are drawn in fine line red over glaze with dragon pearl, fire, and clouds.

## OTHER

Among the many variants and fragments, 43 examples appear to represent unique or one-of-a-kind examples. The more complete are described separately below.

UPT-1428, F-2

Rim of the bowl has orange spiral design. The four sections below rim are in polychrome enamels and orange depicting a) flowers, b) bird, c) butterfly and d) unknown.

UPT- 1483, AU-1

White with small pink and yellow flowers over glaze.

UPT-1489, AU-1

White with very fine line scenic in red with spatters of gilding over glaze.

UPT-2326, AU-1

White with floral over glaze.

UPT-2495, AU-1

This small white wall fragment has a peach, bat, and longevity sign on it.

UPT-2679, AU-1

Orange pattern on white over glaze.

UPT-2858, F-29

Blue on light blue with everted rim. The outside design consists of fruiting peach sprays and *ling chih* or fungus of immortality (Willettts and Poh 1981:68). The interior has a double blue line just above the base and a comma-like splash of blue in the center. No base mark.

UPT-3036, F-29

This is a heavy bowl with straight walls and height of 6.8 cm. The black transfer print on one side of the cup depicts scenery; the opposite side has a handpainted green and blue circle under glaze. Probably Japanese.

UPT-3157, F-29

Very elaborate green enamel scrolls and flowers cover the entire exterior. Two gilded longevity symbols and pink and turquoise flower enhancements complete the design. The base has a red footring.

UPT-3229, F-29

Black fine line design of florals and vines filled with polychrome enamels that are unidentifiable due to burning. There are two red longevity symbols, and it may be very similar to UPT-3850.

UPT-3294, F-29

White with polychrome flowers over glaze; this example is also burned.

UPT-3328, F-29

Circular design element in enamel on white, burned.

UPT-3339, F-29

Red rooster in fine line red over glaze. The small fragment is white with additional tan and black floral element.

UPT-3850, F-17A

Similar to UPT-3157 but colors are turquoise, yellow, and white with red longevity symbols.

UPT-3851, F-17A

Polychrome floral on white.

UPT-4080. F-21

This bowl has particularly fine workmanship and detailed depiction of the immortals.

UPT-5947, F-39

Green looped chain border with four orange dashes in center of each loop on white porcelain. Polychrome floral motifs separated by panel of polychrome bundles.

UPT-5948, F-39

A panelled bowl with red cross-hatched band at top and green enamel border just below it. Green floral pattern in enamel over glaze.

UPT-4542, F-25

White bowl with pink paint and incised Chinese characters. The paint is very fragile and flakes off on contact.

UPT-4253, F-32

White bowl with three sets of peaches drawn in orange fine line over the glaze.

UPT-4533, AU-1

Blue, green, and orange scenic over glaze.

UPT-4729, AU-1

White bowl with straight walls, everted rim, and red, green, and blue floral pattern.

UPT-4736, AU-1

Orange and gold stripe on footring.

UPT-4801, F-16

Fine line black drawing of floral spray, filled with fine brush strokes of orange and green enamel. The bowl has a brown rim.

UPT-5135, F-30

Orange and gold stripe on footring; polychrome floral design with gilded flowers and fine line black outline over glaze.

UPT-6216 and 5940, F-41A, F-39

Handpainted enamel over glaze: floral design in green over mustard yellow background. Orange line at rim and around base with square orange seal on base.

UPT-6026, 6177, 7122, F-40 and F-40A

Two framed polychrome floral design elements in enamel over glaze. The rest of the cup has floral design in shades of green. There is an orange ring at base of design and an orange square seal on the base.

UPT-7020, Em. Staircase #10

Polychrome floral enamel over glaze on white (includes bamboo).

### Cup Holders

These are round footed pieces with diameters of 10.3 to 12.5 cm and hollow centers, which serve the same purpose as Euroamerican saucers. There were eight in all, three from AU-1, three in Feature 29, and single examples in Features 17 and 42. They tend to be elaborately decorated. Cat. 6108/6132 has a red cross-hatched border, polychrome enamel florals, and gilded longevity symbols. Cat. 3228 has a scalloped rim with bats and polychrome florals on the inside; like the others from Feature 29, it is burned. Cats. 1512, 3053, and 3270 appear similar, with gilded rims. Cat. 4930 has a polychrome floral motif repeated 10 times on the outer rim, and florals including water lilies and roses over a gilded background on the interior. Cat. 406-300 has a scalloped rim with orange foliate spray on the exterior, and a finely rendered polychrome scenic on the inside.

### Plates

There were fragments equivalent to a minimum of 189 plates, mostly from Feature 29 (31 ex.) or the immediate areas designated as AU-1 (71 ex.). Ten were Celadon, 179 were Four Seasons, and there was also one large platter. They were essentially flat, with a turned up rim, but no central well such as a saucer might have. The Four Seasons plates had the four characteristic floral designs with a peach in the center; bases most often had either a square red stamp over the glaze, or the red endless knot under the glaze. In diameter, both types ranged from 13.5-15.0 cm.

A large serving platter rather than a plate, UPT-4703/5574 (AU-1) is elaborately overpainted in the Rose Canton style. If intact, it would be oval in shape, and 24-28 cm in length.



### Condiment Dishes

Smaller flat dishes, resembling little plates with upturned rims, number 179, and were used to hold condiments or sauces on the table. Eleven were Celadon, and the remainder, Four Seasons. They were quite uniform in size, from 8-10 cm in diameter.

### Footed Serving Dishes

These came in two basic shapes: a footed bowl with enamel interior and floral or other designs on the exterior, and a very high footed, flatter server, usually with a scenic or figural pattern and some calligraphy overpainted on the white surface. The former would have held wet dishes, while the latter would be used to offer fried food or discrete items.

An estimated 33 bowls were enameled green on the interior with various patterns on the outside. As reconstructed, rim diameters ranged from 16 to 22 cm. Where bases were present, most had square red stamps over the glaze. Exterior patterns included: the eight diagrams in yellow enamel outlined in red (Figure 4.2); yellow florals; yellow clouds; turquoise butterflies on paneled sides; mauve peach with green leaves alternating with five turquoise diamonds; different geometric elements in red, turquoise, yellow, and green on each panel of an octagonal vessel; polychrome florals with a bird on a branch on each of eight lobes; polychrome florals with animals; butterflies, florals, animals, and a rooster on a six-lobed vessel; florals, bird, and butterflies on six lobes; and others. The forms tend to be hexagonal, octagonal, or lobed. The bases often had a red rope border painted over the glaze. Overall height of the more complete examples is from 5.6-10.0 cm; diameters at the foot range from 3.4-13.0 cm, and foot height is 1.2-1.7 cm. Six of the group came from Feature 29, 17 from AU-1, and 5 from AU-2.

The flat-topped serving pieces with very high foot numbered 15. At least three of the group had a foot 5.5 cm high, with alternating red and green lappets above a red border at the base, then a double red line below a raised blue band, again bordered in red (UPT-306, 2045, 4093/4145). The bases are hollow and glazed, dry only on the foot. The upper portion was round, flattened on the bottom where it joined the base (no diameter is available). Even on the fragments, there is no distinct seam where the upper platform would have joined the stem. The design on the upper aspect of each piece has peach and green leaves in the center, bordered with a red stripe, with polychrome flowers and leaves toward the rim. The stems of other comparable vessels had rope and wave patterns painted in red, blue, and/or green, sometimes outlined in black. Of the 15 examples in all, eight were recovered in Feature 29, and four in AU-1; none was present in any feature after 29.

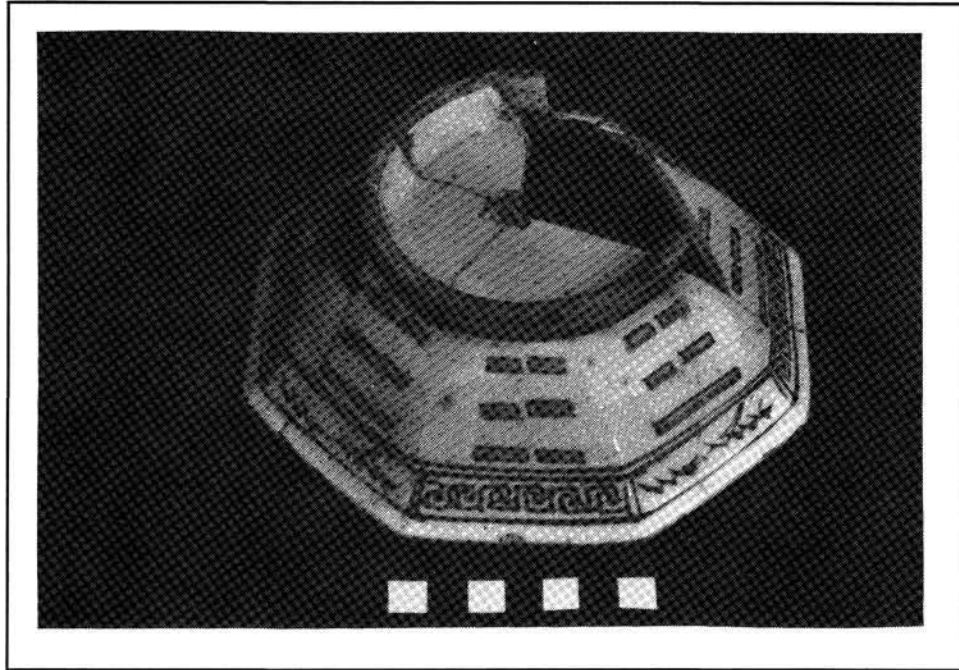


Figure 4.2. Octagonal Bowl (UPT-4460)

The largest serving vessel is a bowl from Feature 42 (UPT-6110). Thrown on the wheel with a low dry ring foot, the interior is lavishly decorated with polychrome flowers and one or more pheasant birds over the glaze on a white ground. The vessel has a straight rim rising toward the exterior, 3.7 cm wide, with the same design elements within red borders, touched with gilding. The bowl is 14.7 cm high, with an estimated diameter of  $\pm 40$  cm. Although incomplete, there are no basemarks on the fragments present. The ring foot has been wiped free of glaze for 0.9 cm at the heel, and there is at least one large floral motif on the exterior wall. About one-half can be reconstructed for display.

#### Wine Cups

The 73 smallest hollow forms are called wine cups or bowls, although they could have been used for any of the Chinese spirits, brandy, Ng-GA-PY or other beverages. They are quite uniform in size, and all are either Four Seasons or Celadon. The 65 Four Seasons examples measure 2.6 cm in height, 4.5 cm diameter at the rim, and 2.0 cm across the dry ring foot. In Celadon, the eight examples have the same flaring profile as the larger bowls, and white rims. They are 2.4 cm high, 4.7 cm at the rim, and 1.8 cm in diameter at the white, unglazed ring foot. Each has a blue brush mark under the glaze on the base. Both types hold the same volume.

## Teapots

Tea preparation and table service are represented by a minimum of 68 teapots and 41 lids. By type, 35 of the teapots are painted blue under the glaze, 15 are polychrome floral, 11 have polychrome genre depictions, and 7 are either plain white or fragments missing the decoration. Of the total, 30 teapots and five lids came from Feature 29. The only other concentrations were the five pots and three lids from Features 51/55, and three each pots and lids from Feature 39. Other than scattered fragments, 15 teapots and 17 lids were recovered in the general area covered by AU-1. An additional 110 fragments, not included in these minimum numbers, have been catalogued, suggesting that the quantity was probably greater than it might appear.

There was greater variability in size among the teapots than with the other vessel forms. Diameters range from 10.0 to 15.6 cm; heights from 10.9 to 18.0 cm; and rim diameters, 5.0 to 8.0 cm. A few have twisted wire handles, suggesting repairs. The blue and white group are painted in broad brush strokes, depicting floral, scenic, or figural patterns. The polychrome florals were painted in enamel over the glaze, with flowers, birds, and butterflies. The genre figures over glaze are typically outlined with fine lines of black, brown, or red. Applied lugs for the handles have three perforations; some have molded or slip dot decorations.

## Wine Pots

This group of vessels has a cylindrical body, constricting above the shoulder to the mouth, with one handle and an opposed curved spout both applied below the shoulder, and matching lids with a knob handle (Figure 4.1.e). They have variously been called wine, sauce, or soy pots into which liquids from bulk shipping containers were decanted for table service. Of the 14 most nearly intact examples, eight pots and one lid are blue and white, and the other six have polychrome or other decorations as described below. None of the bases is marked.

The blue and white examples are painted under the glaze in the recurring pattern which has been grouped within the general category of "Shanghai ware" (Willets and Poh 1981:13-14), and called "Sweet pea blossoms and foliage" (Willets and Liu 1981:70). This report uses the name Sweet Pea, following the description of an identical vessel illustrated by Willets and Poh (1981:78):

Blue and white sauce pot with lid. The body ornamented with a chain of three concentric ellipses at the shoulder, sweet pea blossoms and foliage below, and at the bottom a border based on parallel oblique strokes.

The specimen illustrated was 14.0 cm tall with lid, and ascribed to the nineteenth century. Those in this collection (Cat. 2863, 3148,

6618/6735, 5914, 6797, 7079, 258, and 2722) average 11.0 cm tall to the rim and would be 14.0 cm with the lid. Diameters at the foot range from 6.0-6.8 cm, and at the mouth are between 3.0-3.3 cm. Except for a dry foot, all bases are glazed, and all spouts are joined to the bodies with a single perforation. The whole lid (Cat. 3970, Feat. 17) has a matching design, is 4.2 cm in diameter with an unglazed stem of 1.7 cm to fit within the orifice of the pot.

The other varieties conform to the same shape but have diverse decorations:

a. Calligraphy only. Cat. 1744 is only a shoulder and spout fragment, so other decoration may be present. On this specimen, the white body has four characters in gray or faded black, which could not be translated, below the shoulder, and others are probably present on the other side of the spout at the point of fracture.

b. Polychrome floral. Cat. 1201/2029/2619 are parts of a white pot of the same shape and size. A delicate array of flowers in two shades of blue, two shades of pink, and white, with red centers, green leaves, and dark stems, has been overpainted in enamels on the body and neck. Some elements are joined, while others are isolated.

c. Polychrome floral. The fragments of Cat. 4413/4530 are generally similar to b. above, but the parts are excess and must represent another individual specimen. Pink flowers and brown stems are present.

d. Genre. Also in fragments, Cat. 5727 combines overpainted figures, a fence, and floral elements on a white background. Repeated on each side are two figures, one wearing a brown tunic over green trousers and the other, a green robe over brown, standing in front of a low one-rail, square fence. Both figures wear top-knots and appear to be smiling, although the activity cannot be determined from the broken pieces. Scattered elements of grass are suggested by diagonal black lines painted over a green wash, and there are larger plants in the background.

e. Polychrome floral over a pink-orange body. Cat. 7195 is complete except for the handle. It has the only solid colored body other than white, is 11.5 cm tall, and has a base diameter of 6.7 cm. Body and neck are overpainted with enamel flowers, stems, and leaves in shades of pink, blue, and green. Petals or flowers which appear to be white have not been painted, but these areas have been carefully left uncovered by the orange glaze.

f. Probably a vessel of the same shape and purpose, Cat. 3824 is a base fragment, distinctive in that it does have a dry foot ring. The base is otherwise flat and glazed. Above the foot is a border



overpainted in red and above this, repeated characters signifying longevity painted in thick yellow enamel outlined in red. The upper portion is missing.

Of the total, three pots were recovered from Feature 29; two from Feature 51; one pot and the lid from Feature 17; single examples from Features 11, 12, 39, 43, 45, 49, and four from the general area of AU-1.

### Japanese Porcelain

On the basis of form, technology, subject and method of decoration, and analogy to identical patterns which were (a) advertised as Japanese, or (b) backstamped with the place of origin, a minimum of 81 vessels are regarded as Japanese. These include 16 examples of celadon, 34 decorated with blue and white transfer prints, and 31 which are hand painted. The lack of country of origin stamps on the base suggests that all were imported prior to 1891, when tariff regulations made this obligatory.

A common pattern among the painted celadons included thick white enamel or slip flowers under the glaze, usually enhanced with pink shading both under and over the glaze. Green leaves and black stems are sometimes present, and flower centers were occasionally gilded over the glaze. This style is present on a minimum of five large serving bowls, one rice bowl, three cups, a globular teapot, plate, and four other hollow forms. The serving bowls are 4.5-6.4 cm in diameter at the foot with rim diameters of 13.7-15.8 cm and height of 5.8-7.0 cm. All have a painted blue line inside the foot ring. The rice bowl has a foot diameter of 4.3 cm, rim diameter of 12.0 cm, and height of 5.0 cm, with the same blue line within the foot ring. The plate has the same underglaze decoration plus orange flowers over the glaze; the foot is 10.0 cm in diameter, and the rim diameter is  $\pm$  19.0 cm.

The transfer printed wares are limited to 33 rice bowls and one straight-sided, smaller item which could have been used for tea. The patterns are those which have been illustrated by Costello and Maniery (1988) and are found in most Chinese sites: chrysanthemums, other flowers, fans, and dragons, with pendant rim designs on the interior and dashed or dotted lines used as fill (Figure 4.3).

The origin of these transfers is beyond doubt, since some of the identical patterns in later contexts have been found with Japanese marks. Some of the same patterns are illustrated in the mail order catalogues after the turn of the century, by which time the place of origin had to be marked (e.g., Butler Bros. 1907:180E). The rice bowls range in size from 3.5-4.2 cm in diameter at the base, 11.0-14.0 cm at the rim, and 4.5-5.4 cm in height. The body tends to be thick and opaque.

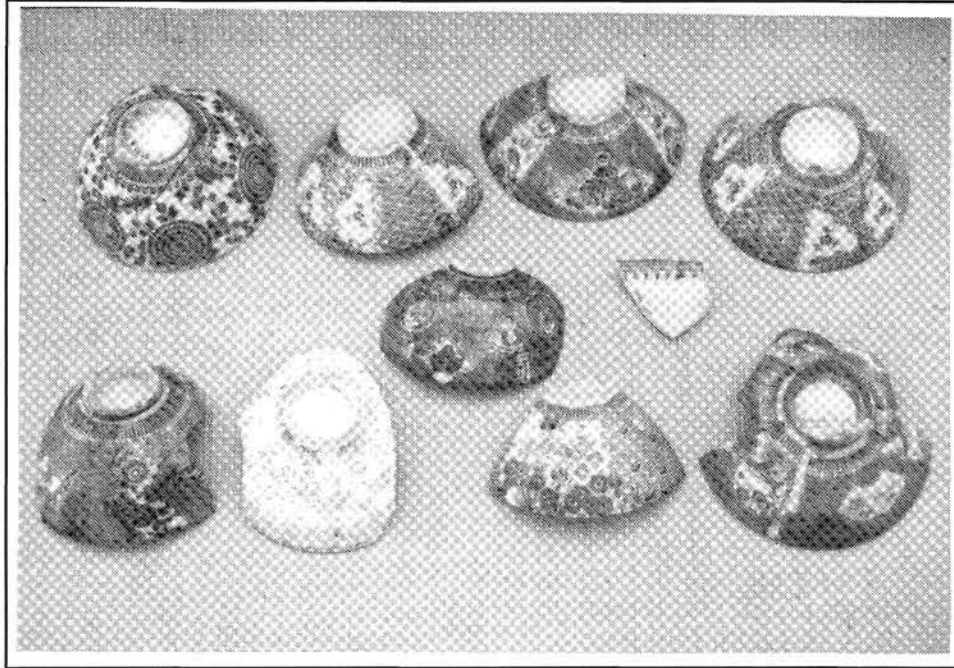


Figure 4.3. Japanese Bowls

The balance of the group includes various forms which were hand decorated. Two domed lids, each with a blue knob, were painted in blue, one (UPT-6024) with a bird against a landscape background, and the other (UPT-5993) with landscape elements. Two plates were painted over the glaze in polychrome floral and figural motifs in fine line drawing with some gilding (UPT-669/877 and 3217); they were 18.0 and 20.0 cm in diameter, respectively. UPT-6192/6017 was 20.0 cm in diameter, with a 12 mm border of cobalt blue and floral patterns in blue under the glaze. There were seven tea cups of extremely thin ("egg-shell") porcelain, all painted over the glaze with some combination of polychrome landscape, flowers, scrolls, and butterflies. Some of the rims are bordered, and some have applied gold dots. Five saucers with foot ring diameters of 4.0-8.0 cm and rim diameters of 9.0-14.0 cm have comparable polychrome elements painted over the glaze.

Other painted fragments represent the rim, shoulder, and spout of a globular teapot decorated with blue florals under the glaze, and white slip dots and green enamel applied over the glaze, and pieces of another similar. Other fragments are interpreted as a bowl with flared rim, 7.6 cm high and 18.0 cm at the rim, painted in blue and olive under the glaze; a planter with everted flat rim; and at least five other incomplete small bowls or other hollow ware forms.

The presence of this group of imports does not signify that Japanese were present on the site either as residents or merchants. While there is no evidence in the city directories or census records that Japanese were living on Apablaza Street, there is abundant evidence that Chinese merchants were importing and selling Japanese ceramics. The same styles are regularly found on other Chinese sites of contemporary date, e.g., in Ventura at the occupation of 1860-1900 (Foster and Greenwood 1991; Greenwood and Foster 1992), San Jose (Hampson 1988), Napa (Hampson and Greenwood 1988), Walnut Grove and El Presidio de Santa Barbara (Costello and Maniery 1988), and other sites where there was no known Japanese population. Not only do historical photographs and the Los Angeles directories confirm that Chinese merchants - including a shop at the Plaza in the old Lugo Adobe - were offering both Chinese and Japanese ceramics in the nineteenth century, but imports plainly identified as Japanese were being marketed to the national trade at least by 1907. Several transfer printed bowls identical to some of those found at UPT were advertised to the general public at 39 cents a dozen (Butler Bros. 1907:180E).

#### **Stoneware Containers**

The most common forms of stoneware shipping or storage containers have been adequately measured and illustrated elsewhere, so this discussion will summarize the numbers and distribution, describe the less abundant forms or anomalies, and comment on the methods of manufacture. Translations of characters which have been embossed into the clay or added to the surface in ink or cinnabar are listed in Appendix I. The vast quantity of these containers, when fragments are considered, is not even suggested by the tabulations in Table 4.5. From Feature 29 alone, 1172 pounds of stoneware jars and fragments were recovered. From trenches and profiles, another 643 pounds were examined, recorded by provenience, and discarded; these would almost exclusively represent the medium-sized food jars, since wine bottles may be recognized by their superior glaze and the large shipping jars, by their size and thickness. The numbers have another implication: since they contained imported foods (liquid, dry, and preserved), they emphasize the importance of the traditional diet and the inadequacy of estimating subsistence patterns from the bony faunal remains alone.

Table 4.5. Stoneware

Provenience	Wine	Soy	Food	Shipping	Shipping Lids	Small St.	Small St. Lids	Small Hemi	Small Hemi Lids	Other
Analytical Unit 1	209	67	121	76	98	69	46	44	30	59
Feature 1	36	5	13	2	7	5	4	3	1	6
Feature 2	6	5	9	0	8	4	5	1	0	4
Feature 3	13	4	7	1	1	1	2	0	0	1
Analytical Unit 2	10	1	7	7	5	5	1	0	0	1
Feature 11	4	0	2	1	2	0	3	0	1	1
Feature 12	2	2	4	0	3	1	0	1	0	1
Feature 16	13	6	2	3	7	4	4	3	4	3
Feature 18	8	6	6	0	7	0	1	2	2	1
Combined Feature	24	16	10	5	11	9	10	5	2	9
Feature 22	18	7	12	9	13	6	3	4	11	8
Feature 27	6	3	0	1	4	1	2	0	0	2
Feature 29	420	210	122	89	91	47	25	9	17	41
Feature 30	10	2	4	0	4	6	6	3	2	2
Feature 31	0	0	0	0	0	0	0	0	0	0
Feature 32	12	3	5	3	5	5	4	3	9	2
Feature 33	12	2	5	2	3	1	8	3	4	1
Analytical Unit 3	21	3	3	1	7	11	6	5	2	6
Feature 38	7	5	1	0	0	4	1	11	10	2
Feature 39	10	3	4	2	2	5	7	3	6	1
Feature 40	20	4	7	3	3	5	9	2	4	0
Feature 41	14	8	6	0	1	2	1	1	1	1
Feature 42	10	2	1	3	8	2	2	2	3	2
Feature 43	6	3	0	0	0	2	1	0	1	0



Table 4.5. Stoneware										
Provenience	Wine	Soy	Food	Shipping	Shipping Lids	Small St.	Small St. Lids	Small Hemi	Small Hemi Lids	Other
Features 44, 45, 46, and 50	2	3	1	0	0	0	0	1	0	2
Feature 47	4	1	2	1	1	0	1	0	0	2
Feature 48	0	0	0	0	1	0	0	0	0	0
Feature 49	2	2	0	0	1	1	0	1	0	1
Features 51 and 55	2	2	2	0	2	2	1	3	0	2
Feature 52	0	0	0	0	0	0	0	0	0	1
Feature 53	0	0	0	1	0	0	0	0	0	0
Feature 54	3	3	4	0	1	0	3	0	0	1
Feature 56	13	11	5	0	1	0	0	0	0	1
Feature 57	9	9	4	0	0	2	0	1	0	1
Feature 58	1	0	1	0	0	0	1	0	0	0
Feature 59	0	0	0	0	0	0	0	0	0	0
A-136	0	0	0	1	0	0	0	0	0	0
Emergency Exit 10	0	0	0	1	0	0	0	1	0	0
West Entrance	1	1	0	0	1	0	0	0	0	0
	928	399	370	212	298	200	157	112	110	165



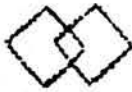





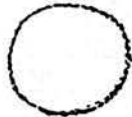

	Number
	40
	2
	1
	3
	10
	1
	2
	2
	41
	1

Figure 4.4  
Wine Bottle Bases

## Wine Bottles

The 928 wine bottles comprise 31 percent of all identifiable stoneware vessels. They are the most uniform of all containers: from 5.5-5.9 cm in diameter at the rim; uniformly 3.1 cm at the neck constriction; 12.2-12.6 cm in maximum body dimension; 8.1-8.6 cm in base diameter; and 16.2-17.1 cm in height. In contrast to the soy sauce or food jars, the bases of this group are glazed, except for a dry ring foot. Embossed or incised marks were present on 112 of the bases (Figure 4.4). The most prevalent were the hourglass or butterfly, double triangle (40 examples), and a simple circle on 41 bases. Minimum numbers were computed from the distinctive neck finishes.

These bottles held any of several products which incorporated various herbs or flavors and were consumed at least partly for the medicinal or tonic properties. They were considered good for rheumatism or to increase one's vitality or life's strength. In one of the formulations, the bark (PI) of a certain tree (WUJIA) was placed into the wine, and the beverage was therefore called WUJIA PI. This style of bottle was exclusively used for this very popular wine, produced mainly in coastal Shanghai. The cork was made of wood and covered with lacquer (Prof. Chou, personal communication 1991). The form itself, a low footed globular body with short neck and flaring rim, is at least as old as the Zhou dynasty, ca. 1000-476 B.C. (Frierman 1983:184).

The process of manufacture was analyzed by Prof. Robert L. Kibler, Glendale College Art

Department. The containers were wheel thrown and assembled from three elements. The lower body half is bowl-shaped, with a thick rim subsequently used to join the upper half. The footring was formed by thinning the base. The upper body half was formed as an up-side down cone with a narrow solid base. This section was then turned over, and the narrow part trimmed out to form the neck of the bottle. The trimming marks are visible on many fragments. The flared neck is thrown separately and joined to the body with white slip. The bottles are then fired and glazed in a double-dipping sequence. It is first dipped completely, covering the base. The footring was wiped dry, and the bottle was dipped a second time, while being held by the footring. The glaze is saturated with iron, and would be called *temmoku* in Japanese (personal communication 1991). Glazes range from reddish to near-black and are often highly iridescent and fine-grained. This is the best made of the stoneware categories.

### Soy Sauce Containers

Among the 399 soy sauce jars, there were two of a distinctly smaller size. In contrast to the average size of the other 397 (rim diameters 3.6-4.8 cm; neck orifice 3.0-3.5 cm; body diameter 12.2-15.3 cm; height 11.3-13.9 cm), the smaller size was 6.5 cm in body diameter and 7.5 cm high. Minimum numbers were computed from the distinctive spouts alone, since the bases resembled those of food jars in both diameter and lack of glaze. The soy sauce jars accounted for 13.5 percent of the identified stoneware items.

Many of the broken vessels on which it was possible to examine the interiors were thrown in one piece, with a small, folded neck collar. The spout was formed separately by hand and attached crudely to the shoulder over a punched hole. There is no footring, and the bases are not glazed. The glazing on the inside is very uneven, and on the exterior, pitted and rough. As a group, these evince the poorest workmanship. Some of the spouts were still sealed with clay plugs, some of which had been pierced for pouring. The larger plugs which sealed the mouth of the jars resemble unglazed gray mushrooms. The upper hemispherical portion which would be exposed averages 4.0 cm in diameter, where it overlaps the rim; the stem is hollow and 2.0 cm long. These were found both in place on some jars, and isolated in the deposit.

### Medium Food Jars

Grouped within this classification are jars of similar purpose and form although variable in size. They are globular with wide mouths and rolled, everted rims. Bases are unglazed. Although the minimum number used in tabulations is only 370, or 12.5 percent of all stoneware, this form occurs mostly as fragments and the total is profoundly underrepresented. They would have contained many different foods, including cabbage, radish or other vegetables,

shrimp or fish, and others which were dried, pickled, or salted, and a variety of sauces.

The bases range in diameter from 8.4-13.0 cm. One of the unbroken, smaller examples (406-138) measures 7.5 cm in rim diameter, 11.2 cm in maximum body diameter, 10.8 cm in height, and 9.0 cm in base diameter. Manufacture was casual, with uneven, pitted glazes. These would have been sealed with the dish-shaped unglazed lids.

### Large Shipping Jars

The 212 recognizable examples of very large containers for bulk foods came in four basic forms.

a. Globular jar with a flat, folded (everted) rim. Some have lugs applied on the body between the shoulder and the mouth. There appears to be a minimum number of 39, with lugs on seven of the fragments. Among the broken pieces, there are possibly 61 others, 11 of them with applied lugs. Inside diameters varied from 9.7 to 10.2 cm. The undercut molding at the rim and loop lugs would have facilitated the securing of a closure over the lid. Thick interior glazes suggest that at least some of them contained liquids.

b. Globular with short neck and rounded rim. Minimum of 23, with average diameters of 10.2 to 10.5 cm. Potential for 42 more from fragments. At least two (UPT-475 and -5811) had unglazed resists on the shoulder with Chinese characters (see Appendix I).

c. Large cylindrical form with straight rim recessed to receive a lid which fitted over the mouth. Minimum of 18 examples; potentially 65 more from fragments. The rims have been wiped free of glaze; the interiors have either no glaze or a very thin coat. In diameters, these vary from 21 to 40 cm. The unglazed lids to these vessels, if turned over, would resemble shallow pans with straight sides. The containers were glazed inside and outside except for the lip and flange to support the lid, which was fired in place on the jar. The sizes of the lids were appropriate to fit well on the flanges of the jars: diameters were 21-31 cm.

d. Very large jar with sharply carinated shoulder; at least one example. This is unglazed inside, with a light brown glaze on the exterior. The neck is 20.0 cm in diameter; the base is 23.0 cm in diameter and 1.03 cm thick.

Obviously, the distribution by shape does not account for the estimated total of large shipping vessels. The minimum numbers by type above were based on the identifiable necks and finishes, while the overall total included bases which were definitely associated with these large jars, but with the finishes lacking, could not be assigned to a type. Certain bases were characteristic:



a. Small base, flaring outward abruptly. In thickness, these ranged from 0.86 to 1.4 cm; in diameter, from 11.4 to 11.9 cm. Although broken, one of the more complete fragments had expanded to a body diameter of 31.2 cm, and was still flaring. Minimum of 32, probably globular if whole.

b. A larger base with flat bottom seemed to be associated with the cylindrical shapes. The base diameters were 10.4-11.2 cm, with thicknesses from 0.41 to 0.73 cm. Minimum of 19 examples.

c. A broad base was concave on the bottom. The largest variety, these ranged from 20-40 cm in diameter, and from 0.5 to 0.7 cm in thickness.

#### Shallow Pans

Listed with the "Other" category are a minimum of 31 shallow round pans - probably braziers for moist cooking. They have either sharply carinated shoulders at approximately midpoint of the height, or a less pointed shoulder. In diameter, they range from 10.7 - 18.0 cm, and they average 6.0 cm in height. Although thin, this clay body has good resistance to heat; they are reinforced by thickening of the lip and by the ridge around the midsection. Modern counterparts are often further strengthened by being wrapped in wire. The interiors and outside down to the midpoint have a thin glaze. The lips are unglazed to facilitate stacking in the kilns.

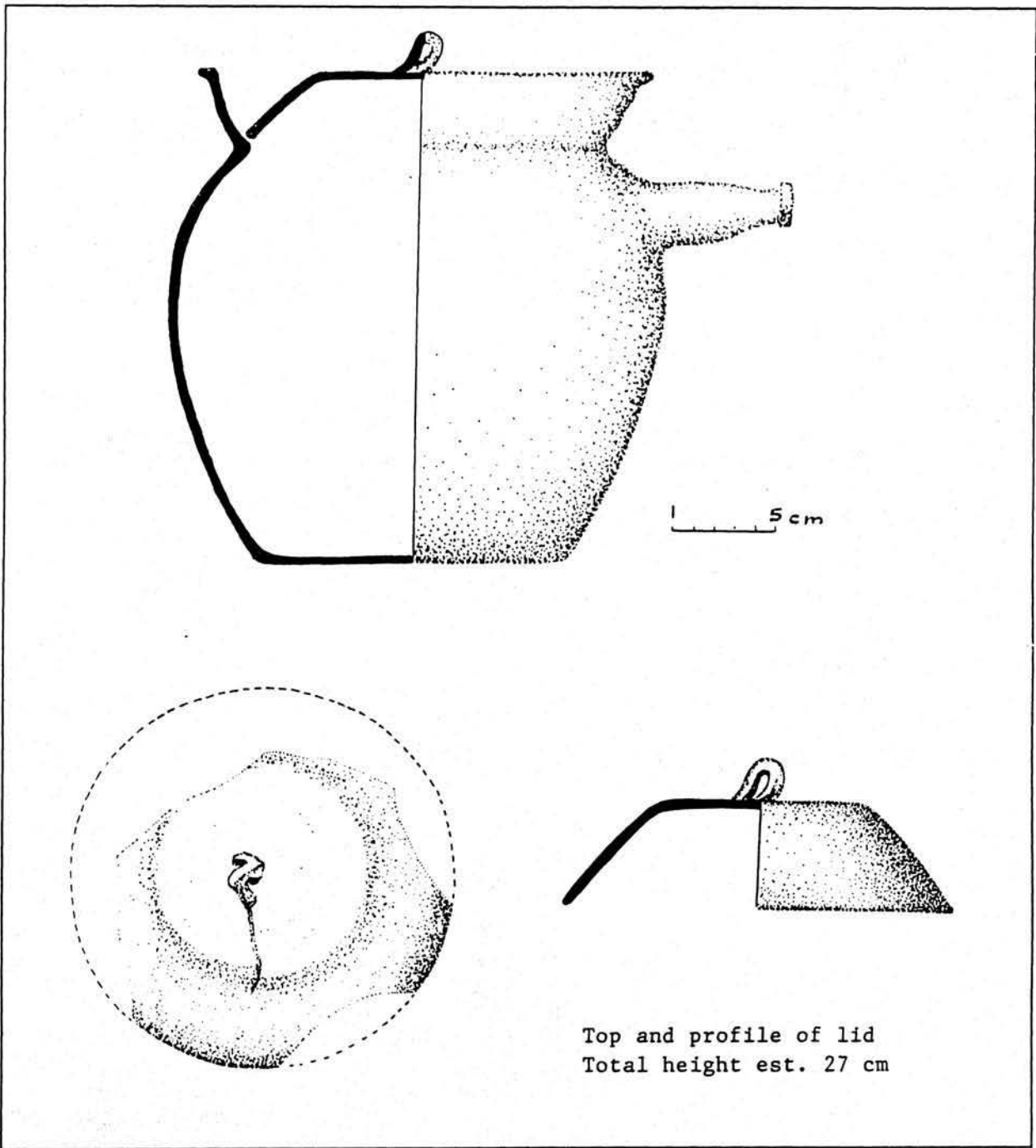
#### Thin-Walled Vessels with Lids

This appears to be a distinct category of very thin-walled vessels of distinctive gray body, unglazed, with matching lids (Figure 4.5). None of the vessels is whole, but the diameters at the base are 17.0 cm. The walls are 0.2-0.3 cm thick. The lids are domed and fit into the recessed lip, with an applied loop handle. Dr. Kibler suggested that the whole may have been closed by running a wire around the neck of the vessel below the rim, and then passing the wire through the loop on the lid (personal communication 1991). These were fragile items, and no total was derived.

#### Anomalies

a. A minimum of two brown glazed stoneware bottles had flared necks with flat rims and pouring spouts (UPT-43, 151, and 275, all AU-1). Each had Chinese characters on the shoulder, possibly as many as 12. These contained ink.

b. Four fragments from Feature 1A and 1B (UPT-1383, 1404, 1411, and 1570) represent a short globular vessel with a restricted neck and broadly flared rim above it, standing on four small legs. Diameter at the base is 12 cm., and at the wide rim, 17 cm. It is wheel thrown, glazed brown on the interior. The outside has a thin brown



**Figure 4.5. Thin-Walled Jar and Lid**  
(Reconstruction from UPT-448, 3241, 5340, 5341)

wash which appears to be covered with white paint. In shape alone, it resembles a Euroamerican spittoon.

c. From Feature 2, UPT-1329 is a rim fragment which appears to be the same shape as b. above. It is 19 cm in diameter, wheel thrown, unglazed, painted with blue and a small amount of white.

d. Five items of similar shape (UPT-3060, 4121, 5199, 5250, and 5300) could be either very shallow jars or more elaborate lids. All are between 7.3 and 9.0 cm in diameter, and 1.6-2.0 cm in height. Unglazed and of poor workmanship, they flare out at the base and have beveled rims. All occur in Features 29 (2 ex.), 31, 32, and 33B.

e. At least three bowl-shaped vessels were sharply scored on the interior with cross-hatching, as if for use in grinding. The most complete was 18 cm in diameter at the base, and 34 cm diameter at the rim. (UPT-4227, 5780, and 6877, from Features 31, 29, and 44, respectively)

f. One large globular jar of Type B above, wide mouth and rolled rim, is 16 cm in diameter (UPT-3088, Feat. 29). Exterior and interior are covered with brown glaze, and the vessel is unique in the impressed decoration. From shoulder to mouth are radial lines, and the center of the body is incised horizontally (Figure 4.6).

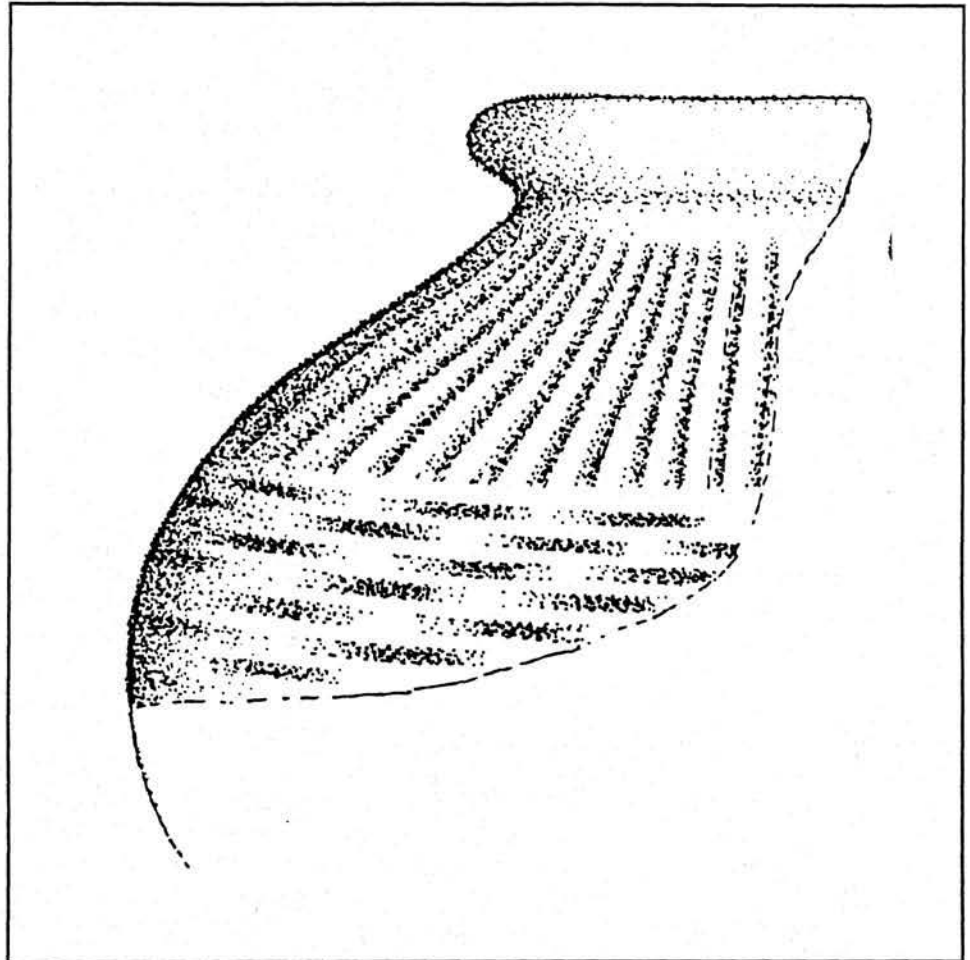
g. Stand. UPT-1342 from Feature 1B is an elaborate round stand, 11.0 cm in diameter and 2.3 cm high. The form has six lobes, and the exterior has an applied or embossed foliate pattern. The deep red-brown glaze covers only this external border; the upper and lower sides are unglazed. The object is scalloped on the sides and stood on three feet. The upper side has a perforation of 1.3 cm, surrounded by a stamped lappet border. A small fragment, seemingly identical to this was recovered in Unit N24/E2 (UPT-2132).

#### Ginger Jars

Green glazed stoneware jars of the kind called "ginger jars" came in three forms: round body with straight neck, round body with rolled rim, and hexagonal. The first of these numbered six; they had a narrow band of green glaze at the rim, which dripped down into the interior, a band wiped clear of glaze for 1.5 cm below the rim, and then the green glaze resumed from shoulder to base. They were 4.0-5.0 cm diameter at the neck, 6.5-8.0 cm at the base, and none was complete enough to measure for height. The 22 with round body and rolled rim were wiped free of the glaze at the base above the heel, but green from this point up to and over the rim. Base diameters were 6.5-8.0 cm; necks were 5.0-8.0 cm; and the more complete were 7.7-8.2 cm tall. Nine of the jars had Chinese characters in one or two cartouches.

There were seven of the green hexagonal jars with designs framed in rectangular patterns on the sides. Composite measurements are 4.5-5.0 cm in rim diameter, 8.0 cm at the base, with height of 7.5 cm.

Figure 4.6  
Incised Jar  
(UPT-3088)



Also called ginger jars is another group of slightly larger globular forms with thin glaze washes of white over green, light blue, or white over beige. There were possibly as many as 19 of these. Measurable fragments averaged 8.0-8.6 cm in height; 6.7-11.0 cm in diameter at the base; and 5.2-7.2 cm at the neck.

#### Small, Straight-Sided Jars with Matching Lids

This category of well made round containers with excellent glazes inside and outside, usually with embossed stamps on the base, almost certainly held a product of higher value than the more casually made and finished stonewares. They were numerous; were variously glazed in glossy dark brown, green, or white; and came in three size ranges. There were 200 jars and 157 lids in all, and they tended to occur in the same proveniences (Table 4.5). All had straight vertical sidewalls with a short recessed, unglazed neck to



receive the matching lids. Bases were unglazed. The lids were glazed and had short, straight sides which fit over the rim of the jar.

Small. These measured 3.5-3.8 cm in diameter at the base, and stood 2.6-2.9 cm high. 21 brown; 10 green.

Medium. This group were 5.4-5.9 cm in diameter at the base, and 4.0-4.5 cm tall. 43 brown; 10 green; 2 white.

Large. Average base diameters 8.2 cm, and height of 7.0 cm. 10 brown.

This group represents higher quality than the hemispherical jars described below and presumably contained a product of higher value. They were individually thrown, and were worth marking on the base. Each jar was dipped upright into the glaze, and then the base was wiped off. UPT-5498 shows very clearly where excess glaze was poured out from the interior of the jar (Robert Kibler, personal communication 1991).

#### Small, Hemispherical Jars with Unglazed Lids

This is another distinctive type, all of similar shape and traits, but without clear distinctions in size. They have very thin walls, a thin glaze wash, and a short, recessed neck to receive a lid. The lids were unglazed, with a very short side to fit over the neck of the jar. There were 112 jars and 110 lids. They co-occurred not only with each other, but in the same proveniences as the straight-walled group above. In size, these varied from 6.0-7.0 cm at the rim, and were 3.0-3.9 cm in height.

Dr. Kibler observed that these were "thrown off the hump," as a potter would say. That is, a large lump of clay would be centered on the wheel; the vessel is shaped from a small portion of the clay and then cut off at the base with a strong or wire. Each succeeding vessel will be drawn off the same lump of clay until it is depleted. This is a time-efficient method since it negates the need for small lumps of clay to be centered individually on the wheel to make each vessel. The cut marks are visible on these jar bases, and it can be deduced that the wheel was turning slowly while the jar was being detached since there is a slow circular line on the base. After the initial firing, the vessels were held by the base and dipped into the glaze. The glaze was swirled inside to cover the surface and the excess poured out. One of the jars shows two fingerprints on opposite sides where it was held while being dipped (personal communication 1991).

#### **Euroamerican Ceramics**

Euroamerican ceramics, both tableware and utilitarian forms, were present, although the associations are not always clear. The appended table listing makers' marks cites 98 of European origin (mostly British, but a few German and French), and 74 American attributions. The numbers do not imply that all were used on

Chinese tables; for example, 13 marks were recorded from jars or lids containing cosmetics, foods, or health care products, nine were stoneware ale bottles, and others were crocks, jugs, or ink bottles.

Marked tablewares included 97 plates, 9 small plates, 42 bowls, 14 saucers, 4 cups, 3 mugs, 4 butter pats, 2 chamber pots, and an oyster bowl. Among the discards lacking marks or other diagnostic attributes were fragments potentially representing an additional 170 plates, 100 bowls, 37 serving vessels, 109 cups, and 70 saucers. Any of these could, of course, have been used by the Chinese. On the other hand, there are alternative interpretations for at least some of the items. The very earliest British products, mostly transfer prints (Figure 4.7), could have been used by any of

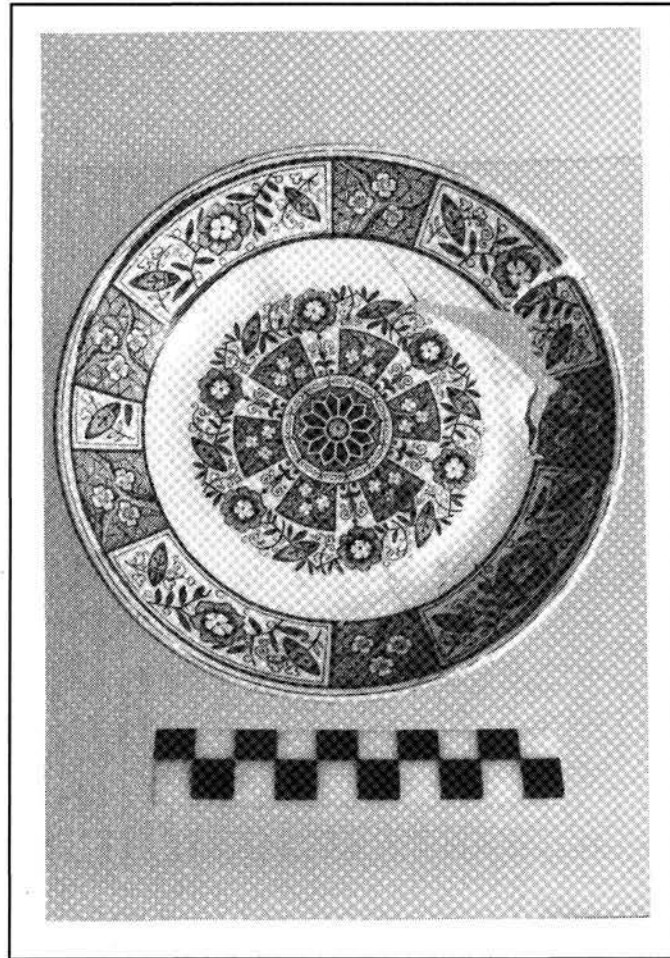


Figure 4.7. Deep Saucer  
(UPT-6778)

the residents prior to the development of Chinatown. The plain whiteware ceramics, which constituted the greatest proportion of the ceramics, typified in body, form, and dates products which could have been used by the Sisters of Charity in their school and orphanage. One decorated porcelain cup was clearly identified as Santa Fe Dining Car Service (UPT-449), and others may also have been railroad discards. One plate (UPT-5984) was the property of the Hollenbeck Hotel. Forms like the four marked butter pats and the creamer are not typical of the Chinese table or diet. Stoneware crocks and their lids and yellowware mixing bowls were present, but rarely marked. Chamber sets were represented by fragments of possibly five chamber pots, seven lids, one combinette, six basins, three pitchers, and one shaving mug. Eight of these items were recovered from Feature 29, three from Feature 17A, and all others from the general area encompassed by AU-1.

The impressed marks and backstamps are listed in Appendix V. The following notes provide new information on four of the less common marks.

UPT-7077

Stoneware base fragment with 12 slightly outward flaring panels, brown glaze inside and out, with "PEORIA POTTERY" stamped on the base. Toulouse (1969:339) illustrates and describes a wax sealer fruit jar with 16 panels, brown glaze, and slightly flaring sides made by Peoria Pottery in 1855 and later. Barber (1976:161) dates Peoria Pottery from 1873-1899. The impressed name of the pottery was used from 1867-1887. Lehner (1988:341) dates Peoria Pottery from 1873-1904 and refers to the wax sealer jar that was circulated around 1885 and later, made of slip cast pottery with 16 panels, brown glaze, wider at the shoulder, and die stamped "Peoria Pottery" (1988:341). This fragment probably represents such an early type of ceramic canning jar made in the last third of the nineteenth century.

UPT-7260

White earthenware plate with brown backstamp "S.F. & J. England, Established 1889." S & F was used by Smith and Ford, Lincoln Pottery, Burslem, Staffordshire Potteries, from 1895-1898. This was formerly Smith, Ford and Jones (Godden 1964:581). Godden cites Jewitt (1972:29) in describing Smith, Ford and Jones as a firm working in Burslem in 1890. Piece most likely dates to 1889-1895.

UPT-3121

A plate base fragment is backstamped with S.F. & J., Venice Pattern, Rd. No. 142383, which signifies a date of 1890 (Godden 1964:528). This would be within the span for the company bracketed by the establishment date of 1889 and the formation of Smith and Ford in 1895.

UPT-6469

White earthenware bowl base fragment with the royal arms and T.S.C.P.CO. under the crest. This backstamp has not been found. However, Thomas Shirley & Co. used the mark of TS & Coy or TS&C from ca 1840-1859 (Godden 1964:574). The company subsequently became Clyde Pottery Co. and used the monogram C.P.CO. to 1903 (Godden 1964:154). It is possible that during the transition, the company was called Thomas Shirley Clyde Pottery Company with the initials of T.S.C.P.CO.



## 5. THE INDIVIDUAL

### Clothing

#### Buttons

About 73 percent of the 919 buttons recovered were made by the Prosser process patented in the United States in 1841 (Kirk 1975:336-337). Variouslly called porcelain, china, and even glass or "agate" in nineteenth century catalogues, a fine clay mixture was compressed in steel dies, fired at high temperature, glazed, and refired to produce the smooth appearance with the diagnostic texture on the under side (Sprague 1985:97). These were typically passing out of use after 1900.

Table 5.1. Buttons, by Material

Prosser	4-hole, depressed center	642
	2-hole, depressed center	10
Shell		
	4-hole	108
	2-hole	61
	Shank back	11
Bone		16
Metal		32
Rubber		3
Composition		13
Glass (jet)		2
Ceramic		7
Shoe buttons		<u>14</u>
Total		919

The uses which were advertised for the various sizes (Brittain 1898:104; Butler 1907:16) include the following:

mm	=	Lines	Typical Use
8		10-12	babies' clothes; lingerie
10		14-16	12-16 lines, shirtwaists
12		18-20	14-20 lines, 4-hole, shirts
14		22	
16		24	vests (horn, metal, others)
18		28	
20		30	coats
24+		40-50	overcoats

Most of the Prosser buttons are plain white, and the greatest number is 18 mm in diameter, larger than the typical shirt buttons of the period. Given this uniformity and quantity - especially in relation to the balance of the distribution by material types and relatively low numbers of all other types and sizes, and the absence of any known laundries on this block, it is very tempting to conclude that these were used in gambling. They could have



Table 5.2. Buttons

BUTTONS (Widths in mm)	Prosser (white) 4 hole depressed					Prosser (white) 2 hole depressed				Shell 4 hole					Shell 2 hole						
F42		1	3	1		3	2						1							1	
F43	1	2	1	2																	
Combined F4, 45, 46, 50	1	5	1	1						1			1	4	2				2	9	
F47			1	1						1							1	2			
F48		1																			
F49		5	2									1	2								
F51, 55		18	8	29	9	2-3							2	3		2	4	1	1		
F52			2	1												1					
F53																					
F54				3	2	1				1				2					1		
F56					3						1										
F57			5	3	1	1															
F58																					
F59																					
Total	13	340	124	81	48	36	4	4	2	2	5	11	13	41	36	6	3	12	10	8	22

served as the objects in Fan tan (Lydon 1985:205) or for the same purposes as the glass counters in GO or various other games (Culin 1891:15).

Although not abundant, some of the metal buttons merit mention. From the lower level of Unit 2, a two-piece brass button with loop shank back (UPT-4660) is stamped "S. E. Co./Jas. N. Petris & Co., Chicago, Ill." A brass shank back military button has the eagle design of 1902 (Brinckerhoff 1972:7), made by Horstmann of New York and Philadelphia (UPT-6875, Feat. 44). UPT-4557 (Unit 1, AU-1) is a one piece, sew through pants button, 18 mm diameter, stamped "Superior Make." Another of the same type (UPT-1242, AU-1) is marked "Victoria '97," and a third (UPT-7059, Feat. 51) reads "Best Ring Edge." A pants rivet (UPT-1793, AU-1) was made by "...by Bros./Los Angeles." Another local product is a brass two-hole button, 18 mm in diameter, made by "Polaski Brothers, Los Angeles" (UPT-6372, Feat. 56).

A two-hole, depressed center rubber button 22 cm in diameter was made by "N. R. Co. N. Y." under Goodyear's patent of 1851 (UPT-5989, Feat. 39).

Small faceted black glass buttons of the type called "jet" were those popular on ladies' garments of the Victorian era.

## Jewelry

### Bracelets

Rigid bracelets called "Peking glass" are still available in Chinatown, and 46 fragments of these were recovered. It is not possible to estimate the minimum number of whole ones represented. In color, they are mottled green and white, or deep rose and white, or solid dark green, probably intended to resemble jade. At least one was mottled in both green and rose. Diameters average 8.8 cm. One fragment of mottled tan (Cat. 1759, Feat. 12) is almost certainly real jade.

### Rings

Six rings were found, five for women or girls, and one apparently a man's wedding ring, based on size.

Cat. 1433 (Feat. 2) is a very corroded woman's ring, possibly plated originally with a precious metal of which no trace remains. All the gems are missing except for one small round stone which appears to be turquoise, set in a crude bezel. Diameter is 1.8 cm.

Cat. 4916 (AU-1), a woman's gold ring set with three small opals and three pink stones.



Cat. 6781 (Feat. 54) is gold in color and only 1.6 cm in diameter. It is made of two wires, one plain and the other twisted, joined on top in the shape of the endless knot.

Cat. 6782 (Feat. 54) is gold in color and stamped 14 (karat ?). Two of the original five stones are missing; the remaining three could be faceted garnet or red glass set in prongs. Diameter is 1.8 cm.

Cat. 7133 (Feat. 40) appears to be a jade circlet.

Cat. 5846 (Feat. 39) is a man's wedding band, 24.1 mm in diameter and 10.5 mm wide. Although embossed "14K," it appears to be gold-plated over a base cuprous alloy, rather than solid gold as implied. The interior is engraved "M to J."

### Beads

The 84 loose beads represent a broad array of types, sizes, colors, and materials, signifying the loss or breakage of many different pieces of jewelry. They are summarized by manufacturing technology as follows:

Table 5.3. Bead Manufacturing Technology

Location	Length	Min. Diam. (mm)	Color and Remarks
<u>Wound</u>			
Feat. 23	10.9	11.2	Trs. greenish-yellow
Feat. 39	6.7	5.9	Trs. dark green; possibly Chinese
Feat. 50	10.2	11.2	Op. lt. blue
AU-1	10.1	11.5	Trs. green
AU-1	5.7	7.7	Trl. blue
AU-1	6.2	5.4	Trs. blue
<u>Blown</u>			
Feat. 39	6.8	6.9	Clear, black interior
<u>Drawn</u>			
Feat. 30	1.4	1.7	Various colors. Min. of 15 beads embedded in metallic lump
Feat. 49	1.2	1.9	Op. light blue
<u>Mold Pressed</u>			
N 19/E 3	10.6	15.8	Clear; Bohemian cut, 18 facets
Auger backfill	5.9	5.4	Clear; Bohemian, 18 ground facets
Auger backfill	11.2	10.8	Clear; Bohemian, 45 ground facets
<u>Prosser Molded</u>			
Feat. 12	4.3	4.7	Op., light blue, banded, barrel
Feat. 29	5.8	6.3	Trs., white, no band
Feat. 40	7.7	9.0	Op., pink, banded barrel. 5 ex.

Feat. 40	8.0	8.9	Op., pink, banded barrel.	24 ex.
Feat. 40	7.7	9.8	Op., pink, banded barrel.	13 ex.
Feat. 42	5.8	6.0	Op., blue, banded barrel	
Feat. 50	6.1	8.2	Op., white, tile	
Feat. 50	3.1	4.3	Op., green, tile.	2 ex.
Feat. 51	5.7	8.0	Op., yellow, tile	
Auger	5.4	6.0	Op., green, tile	
Auger	5.5	5.9	Trs., gray, tile	
Tracks, W	9.1	9.7	Op., lt. blue, banded barrel	
No loc.	4.3	6.1	Op., light purple, tile	
No. loc.	3.2	4.4	Op., green, tile	

Misc., Other

Feat. 29	12.8	19.5	Wood, burned	
Feat. 21	5.5	9.5	Black, burned bone?	
Auger	20.5	23.0	Pink; quartzite	
TR N-23	3.7	10.0	Op., red	
Surface	7.8	7.5	Op., blue, near square	

Trs: - transparent      Trl: - translucent      Op: opaque

There is archaeological and contemporary evidence of an industry in glass beads in both north and southern China (Sprague 1985), and it has been suggested that blue glass beads distributed to mission neophytes may have reached California from China as early as the Manila galleons (Williams 1991:41). However, in the opinion of one analyst, only a single example from this collection is possibly Chinese-made (Lester Ross, personal communication 1991). This is the translucent dark green wound bead (Cat. 5942) from Feature 39; it is 6.7 cm long and 5.9 cm in least diameter. The mold pressed, faceted beads are Bohemian (Cat. 324, 325, 5534).

The largest group are Prosser molded types, banded barrel and tile varieties. Like buttons made by the same process, the beads are opaque and grainy on the surface; one end is smooth and rounded, with a seam often visible, while the other is flatter often showing the diagnostic "orange peel" surface (Sprague 1983:167). The two common forms are the so-called tile bead, a truncated conical shape, and the banded barrel, which is spherical with a raised band around the middle (Ross 1989). Those which present as spherical without the equatorial band may have been highly fire-polished to the degree that the band has melted back into the body of the bead (Lester Ross, personal communication 1991).

The wooden bead (Cat. 3935) is flattened, with diameter of 1.95 cm and thickness of 1.3 cm; the perforation is 0.62 cm. In material, size, and shape, this appears to be an element from an abacus. An example purchased in China with overall dimensions of 27 x 13.3 cm has beads which are 1.73 x 0.92 cm with perforations of 0.6 cm; the proportion of diameter to thickness is approximately the same. Another abacus illustrated by Lister and Lister (1989:89) measured

26.5 x 16.5 cm with beads estimated to have been about 19.5-21.0 cm.

Since all of the types have been made for too long a period to contribute to dating the assemblage, it is possible that the colors may be useful for comparison to other collections, although they may indicate only availability and not preference. The most numerous are the 42 opaque pink banded barrels which probably represent one necklace of graduated size beads. Other colors among the various types, in order of frequency, are blue - 8, green - 6, clear - 4, white - 2, and single examples of yellow, light purple, gray, greenish-yellow, and red.

#### Ornaments, Loose Stones, and Miscellaneous

Other fragments related to personal adornment are summarized below:

Table 5.4. Miscellaneous Ornaments

<u>Cat.</u>	<u>Loc.</u>	<u>Description</u>
108	AU-1	Gold-plated copper earring, screw-on type; setting for missing stone is 7 mm square
323	AU-1	Circle brooch with 16 mounted yellow stones, copper base, 34 mm diameter
809	Feat. 22	Gold filigree acorn charm with organic "nut"; inset is not a seed, perhaps paper (Gumerman, pers. comm. 1991)
1054	AU-1	Bone charm shaped like pea pod, 40 x 11.3 mm, hole for suspension, highly polished
1308	Feat. 2	Medallion with loop for hanging, brass, 31 mm diam. Roman scenes stamped on both sides, with Eiffel Tower in foreground. "Exposition Universelle/Republique Francaise/ ...schlos & Co."
1914	Feat. 3	Cobalt blue glass molded cross, 32 x 23 mm; was probably glued to a backing, since no hole for suspension
5943	Feat. 39	Heart-shaped stone, 10 x 9.9 x 3.3 mm, insert at top for attachment, green/white banded 5056 AU-1 Stone heart, hand carved, 23.3 x 22.7 mm. No visible means of suspension; flat back as if applied to something
6080	Feat. 42	Carved green jade fragment (bowl of flowers ?), 14.4 mm wide
6081	Feat. 42	Green jade perforated disk, 20 mm diam, with open center of 8 mm. Flat, 2.4 mm thick.
6140	Feat. 41	Jade charm of two peaches, gold wire loop at top, 18 x 13.5 x 7.2 mm

There were also isolated loose stones probably lost from jewelry settings: faced blue glass (Cat. 3884, Feat. 17); flat round pink glass (Cat. 1676, A-135), and faceted translucent amber (Cat. 7062, Feat. 51).

There were also four pieces of shell utilized as ornaments, inlays, or even as parts of buttons. Two were hand cut into petal, or floral, shape, with a central perforation; Cat. 2447 (AU-1) is 22 mm in diameter, and Cat. 2448 from the same location is otherwise identical but 14 mm in diameter. Cat. 2449 (AU-1) is a plain shell disk with central perforation, 9 mm in diameter. Cat. 6245 (Feat. 41) is rectangular, 14 x 5 mm, with a small perforation at each small end.

There were many short lengths of broken chains which could be jewelry, watch chains, attached to toothbrushes, or of other utilitarian use. It was observed that the chains still attached to toothbrushes were made of two welded links attached in pairs to two welded links. The same style was attached to a brass tag embossed with Chinese characters (Cat. 4970, Feat. 17), and noted on isolated segments Cats. 2115, 2118, 5076, and 2816. In contrast, UPT 849 is composed of single links. It is suggested - but cannot be proven - that the double link pattern may be associated with Chinese objects.

#### **Men's Haberdashery**

At least three of the fragmentary chains were watch or vest chains. One with twisted pillar links (Cat. 5153, Feat. 30) appears identical to the plated vest chain offered in the Montgomery Ward catalogue of 1895 (158).

There were eight cufflinks: one gold plated with a blue stone, one plain round gold plated, five with shell inlays on a metal backing, and a fragmentary curved barbel. The 34 collar buttons included two metal types, two of shell, five bone, and 25 made by the Prosser process. By provenience, six were recovered from Feature 29, three each from Features 51 and 54, two from Feature 2, and 12 from the general location of AU-1. The bone and "pearl" examples are illustrated in the Sears Roebuck catalogue of 1895 (173).

Fifteen suspender clasps were also typical of the turn of the century. Two were stamped "Wilson Bros. Make" and two had patent dates of 190x and 1906. The "190x" specimen (Cat. 6920, Feat. 44) was solid brass with elaborate chasing.

Ten fasteners could represent either men's garters or female hosiery supports. Cat. 5880 (Feat. 39) was stamped "World's Beauty" on the hinge, but this could not be identified. Eight other examples were almost certainly for women's garments; three of these were stamped "Velvet Grip," with patent dates of 1892, 1895,



and 1897 (Feat. 2 and AU-1). These are illustrated in the John S. Brittain catalogue (1898:12).

### **Combs**

Thirteen fragments representing a minimum of six Chinese combs were found. Identical in form to those now being made with wood spines and plastic ends, the archaeological examples were made with a wood spine, bone ends, and bamboo teeth.

Two central spines are laid over a perpendicular series of fine bamboo teeth, with the lunate end caps holding the teeth in place and filling the space between the spines. The archaeological examples vary between 10.1 and 12.6 cm in length, with the spines from 1.1 to 1.5 cm wide. The best preserved (Cat. 3990, Feat. 17) seems to have a punctate design in a circular pattern on the spine. Four were recovered within AU-1, two each in Feats. 1 and 32, and single examples in Feats. 19, 23, 40, and 41.

There were also six combs of Euroamerican manufacture. One made of tortoise shell was ornamental, meant to be worn in the hair; it is curved with long teeth (Cat. 2100, AU-1). The others were intended for grooming: two tortoise shell, two bakelite or other early composition, and one bone. One tortoise shell example (Cat. 4300, Feat. 32) has diagonal grooving the length and width of the spine, but the others are utilitarian, unmarked, and undecorated. One large tortoise shell hairpin (Cat. 406, A-130, privy) was 9.0 cm long.

## **Recreation**

### **Marbles**

The collection of 76 marbles includes seven glass and 69 within the broad category of ceramic; the latter group includes those which were natural clay, porcelain, glazed stoneware, and painted "chinas." They occurred in 16 of the features, as well as in superficial and disturbed contexts (Table 5.5). They were most abundant in Feature 29 - 17 examples; Feature 43 - 9 examples; and in the general scatter of trash in Feature 17A - 5 examples.

Four of the glass marbles are typical examples of early machine manufacture, ranging in size from 8.8 to 11.3 mm in diameter. One is opaque white with self-swirl, one is an opaque green swirl, and the others are clear green and clear purple with white swirls. The other three are notably larger: one damaged fragment of 16.7 mm appears clear but probably had a colored center; another of the same design is 22.0 mm; and the third, apparently the same, would be 40.0 mm if whole. The largest definitely had a red and white swirl. Four of the seven glass marbles were recovered from Feature 43.

Of the ceramic specimens, 33 are earthenware, simple baked clays, unglazed, tan, pinkish, brown, to gray in color, and from 7.5 to 14.3 mm in diameter. Five other small ones, ranging from 8.4 to 9.7 mm, are extremely dark in color, approaching black. All of the examples recovered from Feature 29 were of this type.

Stoneware marbles covered with blue or brown spotted glaze, called "Benningtons," numbered eight. Four blue examples ranged from 8.3 to 17.6 mm, while the four brown marbles were between 8.0 and 16.6 mm. Three of the blue specimens occurred in Feature 43.

Five porcelain examples have been overpainted. The surfaces are worn and eroded, but at least two were glazed before decoration. The smaller, 9.8 mm in diameter, has crossed bands of striping, six red and four gray (faded green ?); the larger is 12.8 mm, more faded, with traces of four red and four gray or green stripes. Of the three unglazed examples, the largest (18.9 mm) bears just a trace of red. The second shows five equatorial stripes which appear gray (14.4 mm), and the third has a broad red equatorial band and three blue leaves at each pole (18.0 mm).

The collection does not lend itself to absolute dating, since both glass and ceramic types were imported early in the nineteenth century, and American companies were manufacturing both types by the time Chinatown was settled. None of the glass marbles shows pontil scars or other evidence of hand manufacturing methods. The striped porcelains have been found in archaeological contexts dating back to the 1850s, and imported examples of porcelain and stoneware probably produced in Germany have been recovered in a Maryland site dated to ca. 1700-1750. The unglazed clay types are the most common variety found at sites occupied during the last quarter of the nineteenth century, and they tend to disappear from sales catalogues soon after 1900. The glazed ceramics, "chinas" and "Benningtons," had disappeared prior to World War I. The plain clay marbles were offered by Sears through 1928. The stoneware and porcelain groups were fired at higher temperatures, harder, and more expensive (Randall and Webb 1988: passim). The small glass category was not remarkable or diagnostic.

Table 5.5. Marbles

MATERIAL	CAT. NO.	FEATURE	DIAMETER	REMARKS
Glass	6835	46	10.7mm	White
"	6823	44	9.5mm	Green, cloudy
"	109a	AU-1	8.8mm	Green swirl
"	6732	43	11.3mm	Purple swirl

MATERIAL	CAT. NO.	FEATURE	DIAMETER	REMARKS
Glass	5346	16	22.0mm	Clear, damaged, (colored center?)
"	2155	AU-1	16.7mm	clear, red, blue swirl
"	1920	3	40.0mm (est.)	1/2 marble, red with green swirl
Ceramic	696	AU-1	17.6mm	Blue glaze
"	3591	AU-1	8.0mm	Brown glaze
"	522	AU-1	12.8mm	White with red & grey stripe
"	3590	AU-1	9.8mm	White with red & grey stripe
"	1879	3	16.6mm	Brown glaze
"	6397a	43	8.3mm	Blue glaze
"	6397b	"	9.3mm	Blue glaze
"	6397c	"	11.7mm	Blue glaze
"	2384	AU-1	11.6mm	Tan
"	1133	AU-1	7.6mm	"
"	3670	17a	8.2mm	"
"	3993	"	8.8mm	"
"	2128a	AU-1	7.5mm	"
"	4087	21	8.4mm	"
"	3008	29	10.1mm	"
"	2737	AU-1	10.9mm	Light tan
"	3729	24	10.4mm	"
"	2197	AU-1	10.2mm	"
"	3008	29	8.8mm	Black
"	3671	17a	14.4mm	White with blue stripe, (leaf or petals?)
"	2760	AU-1	9.1mm	Clay pot color
"	3008	29	8.6mm	"

MATERIAL	CAT. NO.	FEATURE	DIAMETER	REMARKS
Ceramic	2390	AU-1	8.5mm	"
"	2128b	AU-1	7.5mm	Clay pot color
"	1872	AU-1	11.2mm	"
"	5050	23	11.7mm	"
"	3307	29	9.4mm	Tan
"	2148	AU-1	9.6mm	"
"	109b	AU-1	10.4mm	"
"	1995	AU-1	8.1mm	Tan
"	3886	17a	11.4mm	Tan
"	3589	AU-1	12.1mm	Grey, (partly-flattened)
"	3729	24	10.8mm	White
"	4086	21	14.9mm	White
"	3008	29	9.4mm	Speckled, broken
"	4471	33b	20.3mm	Tan
"	5546	AU-1	8.5mm	Tan
"	4914	17	10.1mm	"
"	6652	51	9.8mm	"
"	4481	32	8.7mm	Brown
"	5885a	39	8.0mm	Tan
"	5885b	"	8.0mm	"
"	5885c	"	12.6mm	Brown glaze
"	6987	41a	9.7mm	Dark
"	6246	41	11.4mm	Brown
"	6309	57	18.9mm	White
"	6113a	43	8.9mm	White
"	6113b	"	8.5mm	Dark
"	6113c	"	8.8mm	Tan
"	6113d	"	8.0mm	"
"	6113e	"	8.0mm	"



MATERIAL	CAT. NO.	FEATURE	DIAMETER	REMARKS
Ceramic	3213a	29	12.3mm	"
"	3213b	"	14.0mm	"
"	3213c	"	8.0mm	"
"	3213d	"	8.8mm	"
"	3213e	"	12.0mm	White
"	3213f	"	8.1mm	Pinkish
"	3213g	"	9.0mm	Brown
"	3213h	29	9.0mm	Grey
"	3213i	"	8.4mm	Black(?)
"	3213j	"	8.6mm	Black(?)
"	3213k	"	9.1mm	White, broken
"	3213l	"	5.6mm	White, oval

### Dolls

Including fragments as small as a shoe or hand, 48 items (after reconstructions) were catalogued as ceramic doll parts. Most were bisque head fragments which had been attached to cloth bodies. The largest fragments and those identified by marks at or near the nape include:

Cat. 807, AU-1. Bisque head and shoulder. Embossed "COD 93-2/0 DEP." Made by the firm of Cuno and Otto Dressel, Sonneberg, Germany, in business 1873-1925+ (Coleman 1968:200).

Cat. 808, AU-1. Bisque head and shoulder. Embossed "Germany/P. Sch. 1899-9/C." Most likely from Peter Scherf, Sonneberg, Germany, ca. 1879-1925+. Alternative is Paul Schmidt, but firm only founded in 1925 and mark is slightly different (Coleman 1968:545, 548; Bach 1985:110).

Cat. 1238A, AU-1. Bisque head and shoulders; crown open and would have had a wig. No marks.

Cat. 1238B, AU-1. Bisque head, solid, no wig, baby doll. Partial mark reads "...dep 8 1/2." The letters could signify "depose" if made in France, or "deponiert" if made in Germany, and the numbers refer to size or mold. Could have been made by Simon and Halbig, a Thuringian firm producing heads for Dressel (Coleman 1968:577).

Cat. 1303, AU-1. Head with glass eyes and painted lashes, nearly complete. "Made in Germany." A similar mark was used by J. D. Kestner, 1816-1858; Kley and Hahn, ca. 1902; Gebruder Knoch, 1887+; and others (Bach 1985:70, 72, 74). Width from ear to ear is 4.1 cm. The mouth is open and lips are painted red; there is no evidence of teeth. Top of head is open at an oblique, with holes above the ears for attachment of a wig. The neck is finished, without shoulders.

Cat. 5506, AU-1. Bisque fragments of medium sized head. "8095 B/85/01/2." Could be Gebruder Heuback, Lichte, Germany, which used mold mark numbers 5600-12,000. The firm adopted its trademark in 1882, and was making doll heads by 1910 (Bach 1985:60).

Cat. 3037 (Feat. 29); 3218 (Feat. 29); and 4075 (Feat. 21). Bisque doll heads, marked I 11/0 Germany, I 14/0, and I 5/0 Germany, respectively. Various German mold or size marks. Each of these heads is finished at the neck, without shoulders, possibly so that it can swivel. On each, the crown of the head is open at an oblique angle, and there is a perforation above each ear for attachment of the wig. Mouths are open, and separate upper teeth applied on the interior are still present on Cat. 3037 and 3218. Eyes are hollow as if they had contained glass inserts; eyebrows are painted but lashes are molded. Measurements from ear to ear are 3.8 cm. Comparable fragments with shoulders are marked 5/0 (Cat. 4279, Feat. 32) and 18/0 (Cat. 4539, AU-1).

Cat. 592 (AU-1) is the torso, one arm, and one leg of a small bisque doll with the chubby body of a child. The head is missing, but estimated height is about 9.0-9.5 cm if whole. The leg has a molded and painted white sock with a green border, and a blue shoe with flat sole. The limbs were attached to the body with copper wire, similar to Nos. 20 and 21 illustrated by Coleman (1968:13).

Other fragments, unmarked and less complete, represent larger heads or different details. Cat. 1238 (AU-1), for example, has a very large open eye socket with long painted lashes, and an open mouth, painted red, with teeth molded rather than added. One forearm and hand (Cat. 593, AU-1), 3.9 cm long, is solid with no visible means of attachment; it has all but illegible mold marks which appear to read "494" over "3/4." Another, 3.4 cm long (Cat. 3037, Feat. 29), is hollow with an open, opposed thumb. A solid leg, minus foot (Cat. 1782, AU-1), is glazed, horizontally ribbed, with a black painted bow above the shapely calf; this has a molded groove at the knee for attachment to the body. Another solid leg is bisque with a molded sock and flat-soled shoe painted pink (Cat. 219); this has been fired onto the porcelain body. A third leg (Cat. 7189) is larger, 4.3 cm from the knee to the break above the ankle. This also has an exaggerated calf and a groove at the knee for attachment. It is glazed, with a painted blue garter and bow, hollow for a distance of 2.6 cm below the knee, and solid at the point of break. Cat. 381 is a hollow left leg 2.5 cm to the break

at the knee; midway on the calf, there is a red-painted garter or sock top where the glazing begins. Cat. 3674 is a hollow right leg, all glazed, with bare foot and no color, 3.5 cm to the bent knee; it was fired to a white porcelain body.

Three bisque miniatures, only 1 inch (2.5 cm) long, are those sometimes called "frozen Charlotte" (Desmonde 1974:66). Cat. 2741, AU-1; Cat. 4278, Feat. 32; and Cat. 5991 (Feat. 39). Cat. 3216 (Feat. 29) is a small bisque figure of a boy carrying a racket. He wears gray knickers with suspenders, a blue hat, has brown hair and painted facial features. Lacking only the feet, the figure is 6.5 cm tall.

### Toy Dishes

For the use of the dolls, reenacting a tea ceremony, or playing house in general, were 28 miniature toy dishes. In form, 10 were cups, seven were saucers with wells, there were two teapot lids, two teapots, two bowls, one plate, three "dishes," and two pitcher or vase-like shapes. Many different sets were represented. Fourteen were undecorated white porcelain; other porcelain specimens were three with molded designs, and another which was molded and gilt. One hexagonal teapot lid, 2.7 cm in diameter, was painted over the glaze with an orange border and green leaves, and had a small knob (Cat. 1219, AU-1). Seven of the total were recovered in Feature 29. Other features with more than a single occurrence were Features 17 and 33, each with two examples. The miniature teapots had three perforations between the body and spout, replicating the number and arrangement on the full size vessels.

Included in the group, but with less certainty of their function, are six footed, bowl-shaped items of clear glass. They are 3.7 cm in diameter and stand 2.4 cm high. They are not much smaller than some of the porcelain wine or spirits cups and could have been used by adults for that purpose.

### Other Toys

Playthings other than the marbles, dolls, and dishes include:

<u>Cat.</u>	<u>Location</u>	<u>Item</u>	<u>Remarks</u>
361	AU-1	Toy gun	Ferrous
1069	AU-1	Clicker	Enamel over metal, insect shape
4943	Feat. 17	Harmonica	
7103	Feat. 40	Harmonica	Reeds
5085	Feat. 24	Toy shovel	Ferrous
6101	Feat. 42	Jack	
7183	Feat. 39	Wheel	From toy vehicle; lead ?

## Gambling

In a limited spatial environment, unwelcome elsewhere, and unable to afford other leisure pastimes, the Chinese who worked hard for long hours looked within their own community for companionship and recreation. Often, excitement and release were sought in gambling halls (Minnick 1988:224-228) where games known in the homeland were transported. In fan tan, a simple elimination game, the bettor would attempt to guess how many objects would remain from a pile after groups of four were removed. The objects might be beans, coins, or "a handful of white buttons" (Lydon 1985:205), or it might be played with a heap of cash coins (Suydam 1936:160). The game rooms might be associated with a shop, kitchen and dining rooms, opium, and prostitution; many had lookouts, security, and pay-offs as fan tan and lotteries were illegal in California in the 1890s.

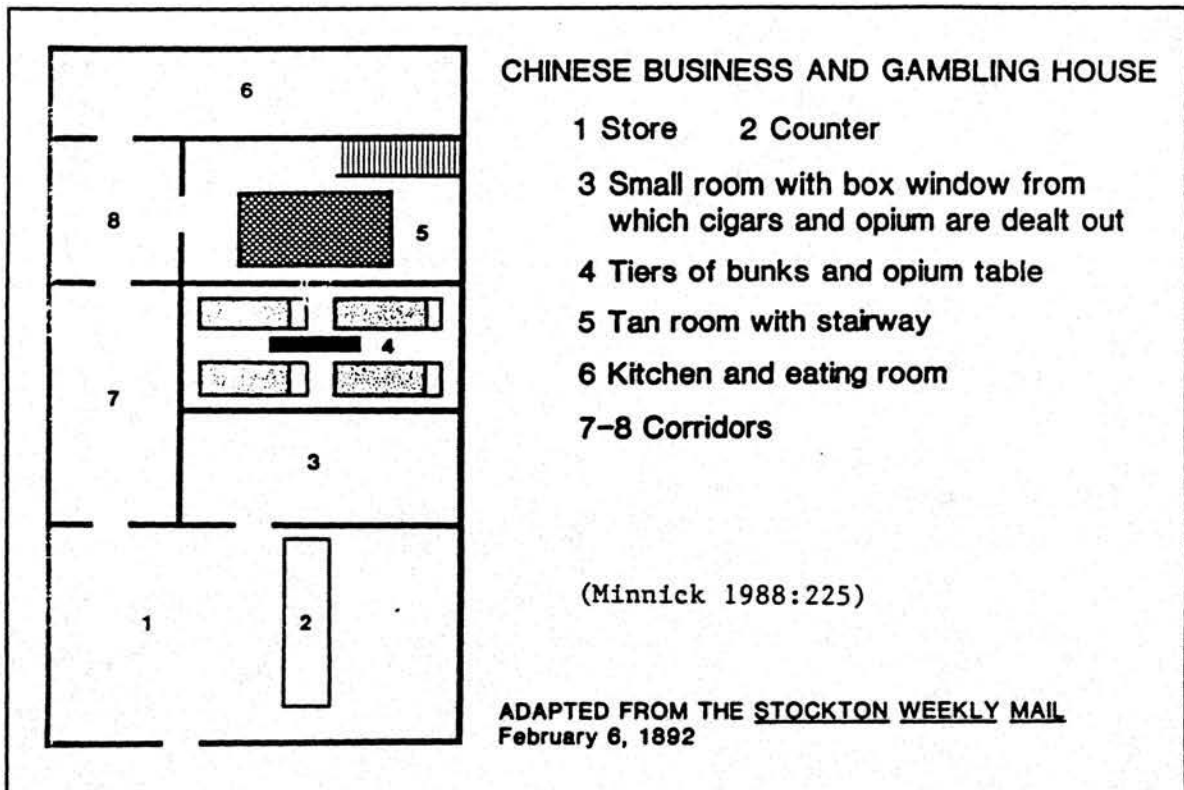


Figure 5.1. Typical Gambling Business

The lottery required the player to pick from the first 80 characters in a classical poem, and the proprietors randomly called 20 winning characters twice a day. Only after English became commonly spoken, did the lottery forms use numbers rather than the characters. No direct physical evidence for the lottery was



recovered, unless the abundance of ink bottles resulted from this use of pen-or-brush and ink. Both the white buttons and ink bottles have been associated in other places with laundries (e.g., Ventura), but none was known to be present on this block to explain the frequency - or association - of the two categories.

### Gaming Pieces

The markers used in a variety of games are typically glass disks, averaging about 1.1 cm in diameter and approximately 0.5 cm in thickness. They tend to be slightly convex on one side and flat on the reverse; the latter characteristic may be a result of the manufacturing process or a deliberate intent to make them rest more securely on the playing surface. Many reports have described them as either white or black, but on holding them against a light, those which appear dark may actually be blue, green, red, or black. The light-colored ones are sometimes clear. Of the 1377 examples recovered, 878 (64%) are white or clear, opposed to 499 (36%) which are dark (Table 5.6).

Table 5.6. Glass Gaming Pieces

Color	Number
White	816
Clear	62
Black	152
Blue	178
Green	157
Red	<u>12</u>
Total	1377

The counters were pervasive throughout the site, with the preponderance recovered from Features 1-32 and Analytical Units 2 and 3. Proveniences containing 40 or more examples were:

Feature 1	41
Analytical Unit 2	146
Feature 22	71
Analytical Unit 3	193
Feature 29	207
Feature 30	99
Feature 32	43
Features 51 and 55	46

These markers could have been used in the game of GO, fan tan, the Chinese pebble game (Wei ch'i), dominoes, and others which involved a talley. In a modern set of GO, each player is supplied with 180 "stones," so-called because the black counters were originally made of slate. In fan-tan, the "white pearls" were 1/5 the value of the "black pearls" (Culin 1896:154), and at most other sites which have

yielded more than a few, the white pieces do outnumber the black or dark ones.

The number of plain white buttons of roughly equal size, not associated with a laundry or other context, suggests that these, too, were used as gaming markers; this use is suggested by Culin (1891:15). It is possible that as many as five small, flat pebbles (three of them slate), one lead disk, and two ceramic fragments - all of the appropriate size - were also used as gambling tokens.

### **Dice**

"Everyone played dice" (Chen 1980:61). The 10 Chinese dice were readily recognized by the oversized single spot on one face. Made of bone, they are present in two size ranges. The larger group (6 examples) measured between 10.8 x 10.9 x 11.1 mm and 15.0 x 14.6 x (broken) mm. Four smaller examples ranged from 6.8 x 7.7 x 7.9 mm to 7.2 x 7.8 x 7.8 mm. The dimensions are obviously not uniform, and the corners were beveled or worn. At least three were burned. One each was recovered from Features 29, 33, and 40; two from Feature 2 and Trench N-23. Most occurred in the area depicted as Analytical Unit 2.

### **Chinese Chess**

Two of the flat, round counters used in this traditional game were recovered, one each in Features 1 and 2. Measuring 15.7 and 18.0 mm in diameter, these were flat disks 2.0 mm thick. Both were stamped with the character translated as horse (Ma). In Chinese chess, the pieces are arrayed in three rows. In the back row are pieces representing chariot, horse, elephant, sergeant, general, and reverse. The middle of the board is the "river" which, once crossed, cannot be recrossed (Suellen Cheng, personal communication 1991).

### **Dominoes**

The 153 dominoes were all made of a dense dark wood. The dots on the obverse were infilled with red, white, or both. The reverse was plain in all cases. They tend to split along the long axis. The assemblage included 108 whole examples, and 45 halves, none of which could be matched or rejoined. On most, the corners were rounded, and these ranged in size from 0.8 x 2.4 x 7.2 cm to 1.1 x 2.7 x 7.7 cm. Two specimens had distinctly square (or unworn) corners; they measured 0.9 x 2.4/2.5 x 7.5/7.6 cm.

An anomaly not previously reported was observed on five specimens, four from Feature 51 and one from Feature 44. Each has one drilled and infilled hole at each end. The dominoes occurred predominantly

in the area covered by AU-1; proveniences with more than one or two included Feature 17 - 6; Feature 29 - 4; Feature 30 - 6; Feature 39 - 4; and Feature 51 - 4.

An intact, boxed set found in Tucson contained 31 pieces (Lister and Lister 1989:75).

No artifacts specifically associated with mah-jong or lotteries were found, unless some of the many ink bottles related to the lottery tickets.



#### Opium Paraphernalia

The smoking of opium is represented by parts (bowls, connectors, or saddles) of 110 pipes, and 65 lamps (chimneys, fonts, wick holders, or bases). The typical rectangular brass cans which contained the opium were also present, but often deteriorated beyond quantification.

The pipe bowls occur in all grades from coarse earthenware to highly burnished stoneware, and in colors which include gray (the most abundant), tan, orange, black, rust/brown, and dark red. The examples sufficiently intact were classified according to shape and method of manufacture in the Wylie and Fike typology (1988, 1990). The four typical manufacturing methods are:

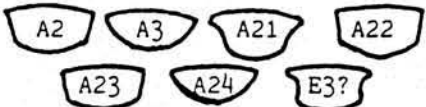

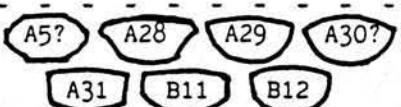
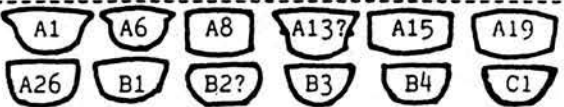
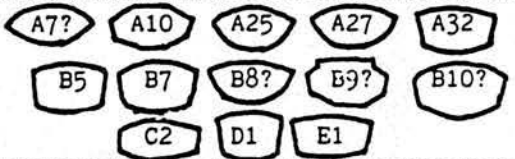

- I. Wheel thrown in one piece;
- II. Wheel thrown in a solid piece and the interior carved out;
- III. Two-piece mold with a separate top (smoking surface) attached with slip; and
- IV. Two-piece mold with separate top attached with a welded coil (Figure 5.2).

At least 50 separate bowl types have been recognized so far on the basis of overall form, clay, and manufacturing technique (Wylie and Fike 1993:274). The most basic classification begins with shape of the smoking surface: A - circular; B - octagonal; C - hexagonal; D - four-sided; and E - elaborate. Specimens which could be assigned to manufacturing and morphological groups include the following:

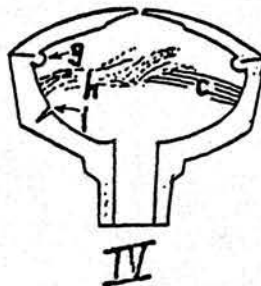
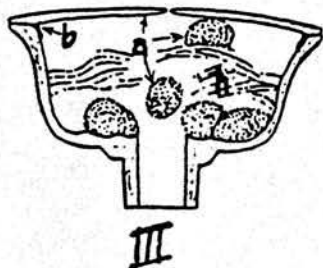
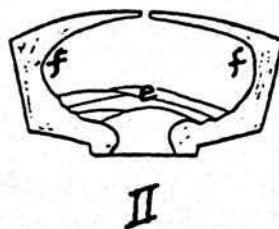
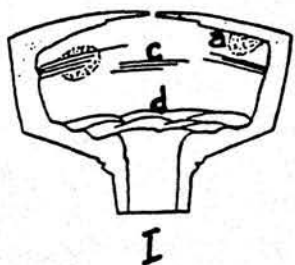
Figure 5.2

Opium Pipe Bowl Summary and Identification Guide

(Wylie and Fike 1990)

CONSTRUCTION TECHNIQUE	DISTINGUISHING ATTRIBUTES	A=Circular B=8-sided C=6-sided D=4-sided E=Elaborate
I	Grey earthenware with grey-green sides & polished grey tops. Stem with grooved flange.	
II	Rose-brown (Yixing?) stoneware. No stems.	
II	Grey stoneware. No stems.	
III	Orange to light grey earthenware. Slipped. Stemmed.	
IV	Rust-brown stoneware. Polished dark grey exterior. Unstemmed (or stems made separately.)	
UNKNOWN	(Various)	

CONSTRUCTION TECHNIQUES AND ASSOCIATED MANUFACTURING FEATURES



Feature Key:

- a) Finger prints
- b) Slip-welded joint
- c) Turning striations
- d) Rippled & distorted clay
- e) Carving tool marks
- f) Smoothly carved surface
- g) Coil-welded joint
- h) Wiping mark
- i) Tool prong mark

Construction Types:

- I - Wheel-thrown in one piece
- II - Wheel-thrown solid with carved interior
- III - Molded in 2 pieces with slip-welded top
- IV - Molded in 2 pieces with coil-welded top

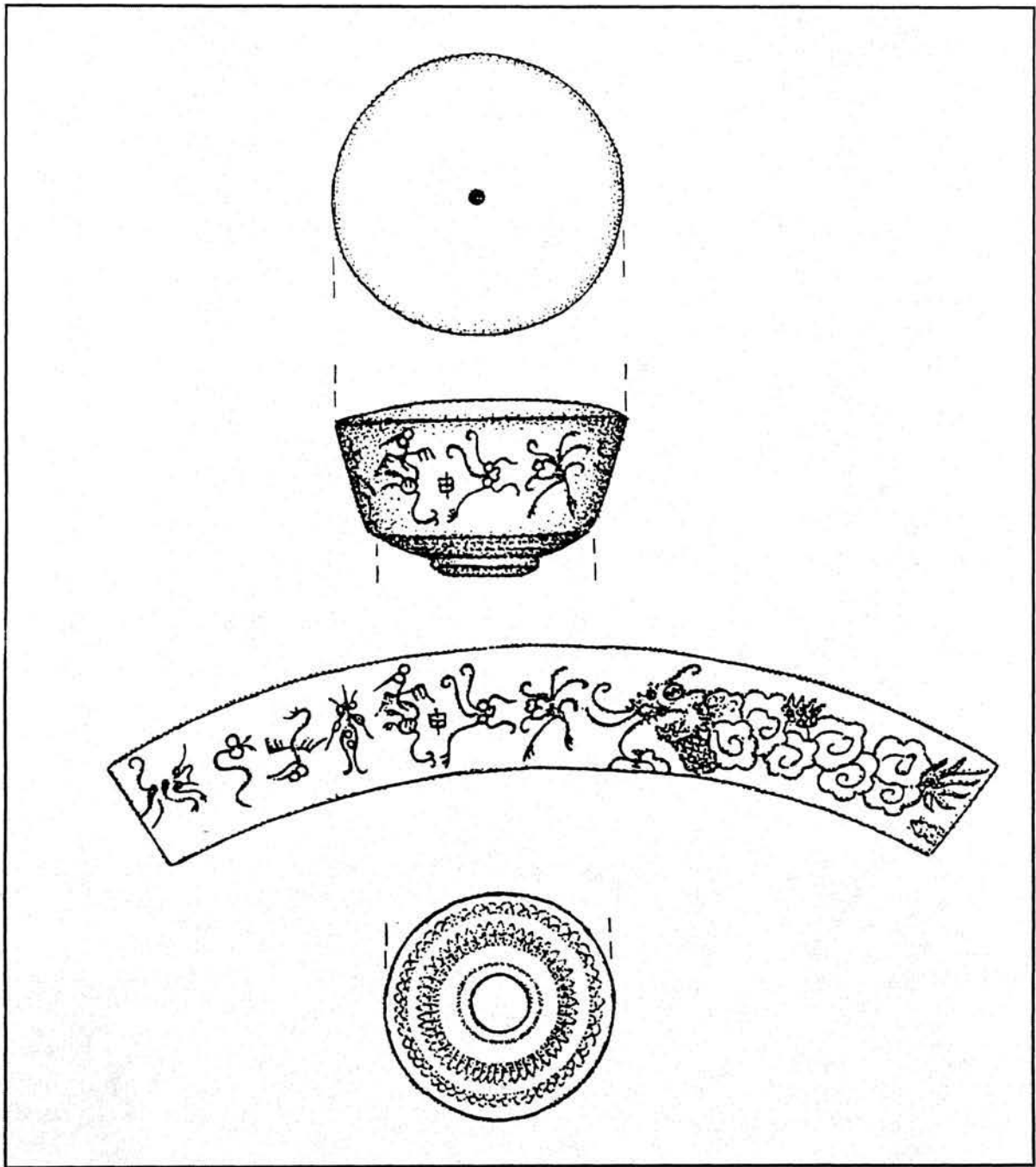


Type	Construction	No. Examples
A	I	3
A 2	I	36+
A 3	I	7
A 6	III	2
A 8	III	1
A 15	III or IV	2
A 25	IV	1
A G-33	III	1
B	III or IV	1
B 5	III or IV	1
B G-14	IV	1
B G-15	III or IV	1
C	III or IV	1
C 1	III	1
C G-3	III	1
D 1	III or IV	1
E G-4	I	1
E G-5	IV	1
E G-6	IV	1

Many bore from one to 10 or more impressed stamps and elaborate representational or symbolic designs. One example (Figure 5.3) seems to depict the Chinese zodiac. Those which could be translated or interpreted are listed in Appendix I. At least two fragments are the detached "lids" or upper smoking surfaces made by construction method II. One of these (Cat. 6566, Feat. 57) is orange, highly polished or slipped, with a metal insert around the smoking hole (Figure 5.4, upper left).

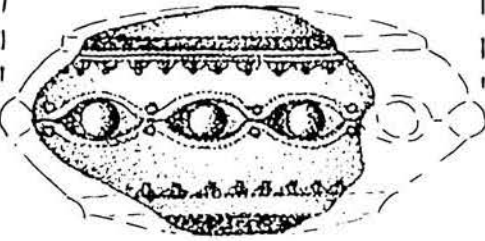
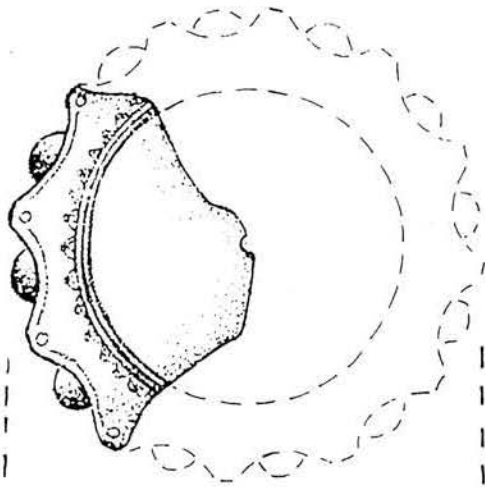
The pipe bowl was attached by a connector which fit into a saddle fitting around the long stem. Some of the bowls had ceramic stems, but on others, these had been removed or replaced by a metal fitting which would be inset into the saddle. There were 10 of the short metal connectors with outer diameters of 2.76-3.23 cm. Three brass saddles were recovered. The complete example (UPT-5954, Feat. 39) was 8.5 cm long parallel to the pipestem, with elaborately scalloped edges and an aperture to receive the fitting of 1.73 cm (Figure 5.5). UPT-2078 (Feat. 12) was shorter and less elaborate, but measured the same in profile height above the pipestem, 3.0 cm., and aperture.

The glass lamp assembly includes a chimney - usually with ground opening, a base with short legs and stylized coin design, and a small disk to hold the wick, which rests upon a fuel oil reservoir (Figure 5.6). These show very little variation among the Chinese sites reported.

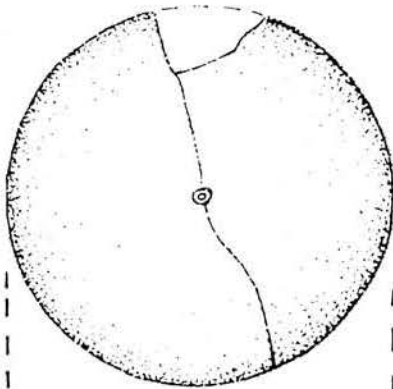


**Figure 5.3. Opium Pipe Bowl, UPT-1476**

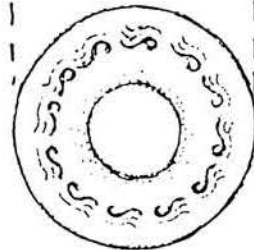
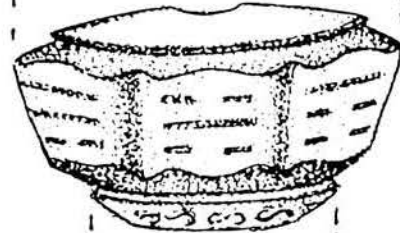
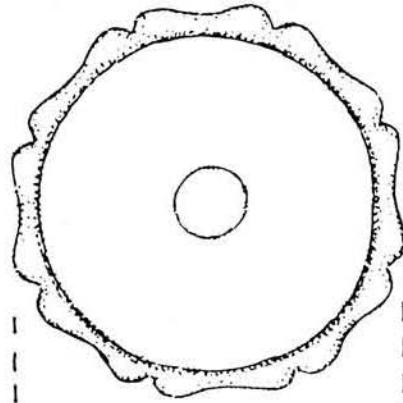
(From top: upper, side, roll-out, and lower views)



UPT-7150



Top of two-piece pipe bowl  
with metal insert (UPT-6566)



UPT-1878



Figure 5.4

Selected Opium Pipe Bowls

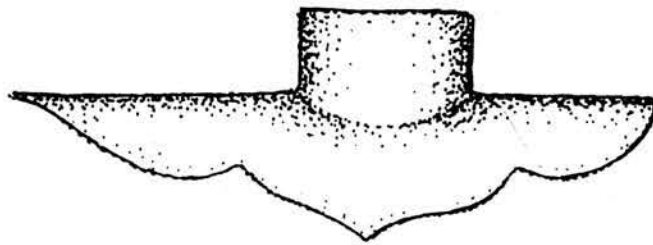


Figure 5.5  
Opium Pipe Saddle  
(UPT-5954)

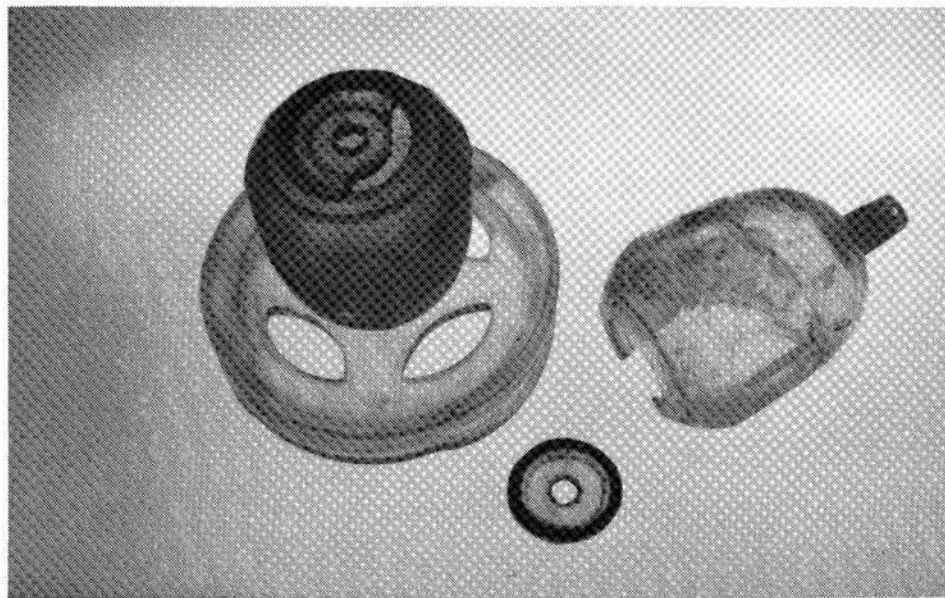


Figure 5.6. Opium Lamp Assembly  
(Left: UPT-6586, 5950, 1865. Center: 4054. Right: 6024/6160)

Of the 18 measurable bases recovered, all but one were 90.5-91.6 cm in diameter; the sole exception was demonstrably smaller, 81.3 cm. All, including the small one, were 24.0-26.5 cm high, to provide air flow and insulation to the unit. Eight of the bases were in Feature 29.



Nine fuel reservoirs were recovered. Two in Feature 40 were whole, 52.2 cm in diameter, with two rows of facets. UPT-6160/6029 is 77.0 cm high, with a stem 10.8 cm in diameter and 15.2 cm long, and opening of 23.3 cm. UPT-5950 is 73.5 cm high, with a stem 11.4 cm in diameter and 11.7 cm long, and opening of 27.0 cm. Others appear comparable in size, with either plain or faceted sides. The seven wick holders are thin disks, 2.87 to 4.0 cm in diameter, with central holes of 0.64-0.73 cm. One example (UPT-4054, Feat. 18) has a painted red border; this one is notably thin, 0.14 cm, compared to the uniform thickness of 0.3 cm for all others.

The brass boxes, represented mostly by scraps, measure 8.3 x 6.5 x 4.2 cm, the typical size of a five-tael container. Lids are 4.2 x 6.5 cm, and sealing strips are 1.5 cm wide.

While most of the imports probably arrived in these cans, there were many grades of opium and diverse ways, legal and otherwise, of transporting it. Mr. Tam described that some entered in powder form, packed in fist-size increments and known as "dirt form." This would have to be melted in a wok, and then filtered through cloth to remove the impurities; as it cooled, the substance would congeal and be packed into small jars. Other opium was smuggled through Mexico, as an impure form wrapped in heavy, waterproof paper known as "sandpaper." This would also have to be processed into a more expensive, purer grade. At one time, one U. S. pound was equivalent to 12 Chinese ounces, with 10 g = 1 ounce. In another account, the opium came in small wax balls, each good for one smoke, stored in brass boxes (Mr. Kamansky).

### **Tobacco Pipes**

This diverse group summarizes all smoking equipment other than elements securely associated with opium. The category includes bowls, stems, and bits, ascribed to both Chinese and Euroamerican origins. A minimum of three unglazed, white ball clay pipes from AU-1 could have been made in either Europe or America; one bowl fragment had a spur, but none of the stems was complete enough to reveal a maker's mark. Two terra cotta pipe bowls (AU-1) were of the elbow type, with a 45+ degree angle between the bowl and stem. Both bowls were plain, and the proximal ends had thick rims where the stems would have been inserted (Figure 5.7).

Three wooden bowls, heavily charred, were like those advertised by Sears Roebuck (1897:333) as "Bulldog" style. The most complete of them (Cat. 7052, Feat. 55) has three incised lines at the point of



Figure 5.7. Tobacco Pipe (UPT-733)

greatest circumference, and the portion of stem which is present is square in cross section. One wood stem with an oval bit and one of amber or simulated amber would also have come from similar two-piece pipes. An amber stem, square below the bit (Cat. 1847, Feat. 2) has a screw insert for attachment, and appears the same as one illustrated in 1895 (Montgomery Ward 1895:505).

Four glass bits and two tiny bowls represent Chinese tobacco pipes. The former are aqua (3 ex.) or green, probably intended to simulate jade. One of the bowls is glazed light brown with two incised lines, 1.53 cm in outer diameter; the other is a notably hard, unidentified material, 1.3 cm in diameter. In China, comparable pipes still being sold have a stem 34.0 cm long with a brass bowl and the same glass bit.

Of the Chinese tobacco pipe parts, two were recovered within AU-1, two from Feature 31, and one each from Feature 17 and Feature 39.

#### **Ammunition**

Ammunition remains recovered during the Metro Rail project are nearly all from pistol-specific cartridges (Table 5.7). Exceptions include the remains of 16 44-40 Winchester cartridges. Nine of the 44-40 examples are complete cartridges, eight from a single provenience (UPT-5308, Feat. 33); one additional example is a shell case with an unfired primer (UPT-6609, Feat. 49). The 44-40 Winchester was introduced as a black powder cartridge in 1873 for

the Winchester Model 1873 lever-action repeating rifle. Colt soon introduced a revolver that also used the cartridge. Most of the American manufacturers chambered rifles and pistols for this cartridge; rifles until 1937, and pistols until about 1942 (Barnes 1989:89). Three 12-gauge shot shell cases were also found. A 12-gauge Peters Premier shot shell case was produced from 1897 to 1935 (Vinson 1968:91), and a 12-gauge Leader shotshell case was produced

Table 5.7. Ammunition

<u>Cartridge Size</u>	<u>Qty.</u>	<u>Description</u>
44-40 Winchester	16	One of the oldest centerfire cartridges, the first effective combination cartridge for interchangeable use in rifles and revolvers. A great favorite and still used for brush hunting to 100 yards (Barnes 1989:89).
.44 Short, rim	1	An old, and once popular rimfire cartridge produced for use in derringers for self-defense. Nearly useless beyond 15-25 yards but frequently fatal at point-blank range (Ibid:366).
.44 Bull Dog	1	Originally for the British Webley Bull Dog pocket revolver, solely a short-range, self-defense round of little value for anything else (Ibid:247).
.44 Webley	2	Popular for use in pocket or self-defense pistols, strictly short range (Ibid:244).
.44 S&W American	1	One of earliest center-fire revolver cartridges, used by the U. S. Army 1871-1873, can be used for short-range hunting (Ibid:244).
.44 S&W Russian	2	Good accuracy to 200 yards, a favorite of western characters (Ibid:245).
.44 S&W Special	1	Similar to and largely replaced the .44 S&W Russian with the advent of smokeless powders, for many years one of the most accurate and powerful revolver cartridges (Ibid:246).
.41 Long Colt	5 (6?)	Short range with good stopping power, popular but not as accurate as the .38 Special (Ibid:242).
.38 S&W Special	2	Also known as .38 Colt Special and .38 Special. Considered one of best balanced all-round handgun cartridges ever designed, widely used for match shooting (Ibid:238).
.38 S&W	12	Widely used, well-suited to lightweight pocket guns, good short range (Ibid:239).
.38 Long Colt	1	A U. S. Army cartridge 1892-1911, similar to .38 Special but not as accurate (Ibid:238).
.38 Short, rim	2	An early black powder pistol cartridge allowing the development of lightweight pistols (Ibid:365).
.32-20 Winchester	1	Designed as a rifle cartridge but popular for handguns to the present (Ibid:228).
.32 Automatic	1	Suited to small low-cost pistols for self-defense, one of the most popular cartridges ever developed (Ibid:225).
.32 Long Colt	1	Originally a black powder cartridge, about the same as the .32 S&W but not as accurate (Ibid:228).
.32 S&W	2	Widely used for European and American low-priced, pocket-type revolvers. Considered minimum caliber for self-defense (Ibid:226).
7-65 Luger	1	The original cartridge for the Luger pistol, can be used for small game but relatively ineffective as a self-defense cartridge (Ibid:224).
.22 CB Cap, rim	4	Effective range not much more than 40 yards, a generally useless cartridge that has been discontinued (Ibid:358).
.22 (unident.)	1	
12 Gauge Shot	3	Considered the best all-round shotshell size for general purposes, it can duplicate the performance of most 16 through 10 gauge shotshells (Ibid:382).

from 1894 to after 1909 (Dietz 1980). The latter example is marked 1901 and was likely manufactured during that year. The make of the third specimen was not identified.

The remaining 42 examples range from additional .44 caliber pistol sizes down to two .22 CB cap shell cases. Twenty-three of these were recovered from Analytic Unit 1 (AU-1). More than one-third of the examples represent unfired cartridges, 21 of which remain complete or nearly complete. Three additional shell cases are missing the primer, suggesting that they were expended outside of a weapon under circumstances such as a fire would provide.

The high percentage of pistol-specific cartridges and the high percentage of unfired cartridges present are both in sharp contrast with the collections of ammunition remains usually encountered in rural contexts such as homesteads, ranches, and farms where the function is related to hunting. The cartridge sizes recovered here cover a wide range, with comparatively few examples of any given size. Most fall within sizes commonly associated with weapons designed for self protection.

The use of this ammunition for self defense, aggression, or even suicide is further suggested by the causes of death contained in the burial records. Weapons would naturally be fewer in number than the cartridges, and the whole or broken examples were so corroded that little identification can be offered. UPT-361 (AU-1) has been grouped with the toys. UPT-6405 (Feat. 43) appears to be a pistol, and UPT-2853 (Feat. 33B), another handgun. Other parts include a trigger guard (UPT-6489, Feat. 39); a handle, UPT-6802 (Feat. 44, level 4); and UPT-5114 (Feat. 31), a fragment.

### **The French Connection**

Although there is no evidence from the census or other primary sources that individuals of French origin were actually living on the property during the years of Chinatown, their presence within the general vicinity is made manifest through a number of distinctive artifacts. Jean Louis Vignes had arrived in Los Angeles in 1829 and set out the pioneering Aliso Vineyard bounded on the west by Alameda Street and on the north by Aliso, just south of this study area. His nephew, Pierre Sansevain, arrived in 1839, followed ca. 1849 by another nephew, Jean Louis. The latter acquired the Vignes properties in 1855, and in 1857, Sansevain Brothers made the first California champagne (Newmark 1930:198-199). The first tannery in Los Angeles was established in 1854 at the corner of Aliso and Alameda, by two Frenchmen (Thompson and West 1880:69). A major *fete* was held in the vineyards - perhaps on this parcel - in 1859. There was enough of a French community to support a French theater in 1859, and to found the French Benevolent Society in 1860. Marchessault was elected mayor in 1859, 1861-1864, and 1867-1868. The French Hospital was founded in 1860; ironically, this hospital is now in the heart of "new" Chinatown. A weekly French language newspaper, *L'Union Nouvelle*, was published in 1879 (Newmark 1930:516). Other enterprises in the area included the Taix French Bread Bakery (antecedent to the restaurant of the same name), opened on Commercial Street in 1882

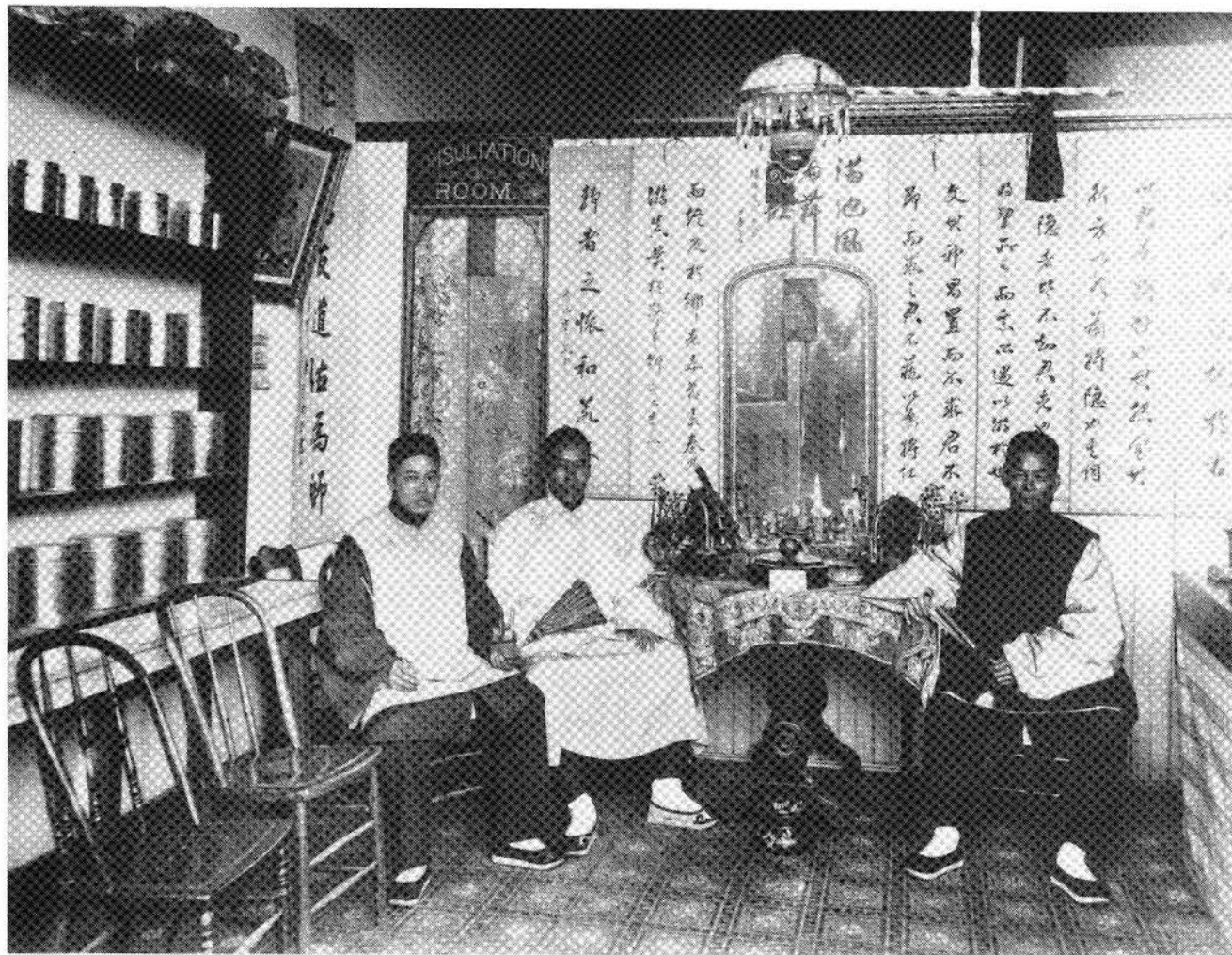


by Marius Taix, and the Hotel de France, which was present by 1883 on the southeast corner of Alameda and old Aliso Street, just south of the Keller property. This was a less conspicuous national minority, but there was French occupation on and around this property in the years prior to the settlement of Chinatown.

Many French had come to Los Angeles during the 1850s, attracted by the prospects of gold, then by opportunities in raising both sheep and grapes. By 1859, there were already 600 French in the city, representing 20 percent of the total population. A French native, Jose Mascarel, was elected mayor in 1865. The "French Quarter" extended from First Street north to Aliso Street, and from Los Angeles Street east to the river (Berger 1987:II-20).

Among the cultural materials which would probably not have been available in general commerce are the leather pouch seemingly from a Parisian bistro, and early ceramics from a remote Alsatian pottery. These suggest personal possessions rather than store inventories. Two small faience jars were brought or sent from Sarreguemines and another from Luneville. Information from the Musée de Sarreguemines suggests that these were terrines which contained paté de foie of goose or duck, or other preserved food products (G. Greff, personal communication 1991). The potteries date back to the eighteenth century, and the backstamps are typical of ca. 1875. The trifold leather pouch (UPT-7184, Feat. 52) is stamped "Brasserie Victor/Ligeron Sur/12 Place de la Bastille," and may have been used to hold receipts or deposits of a business enterprise. In Feature 2 was a medallion from the "EXPOSITION UNIVERSELLE/REPUBLIC FRANCAISE/Schlos...& Co." This might have been brought back - or sent - from any of three such Expositions in the nineteenth century.

Other French products were cosmetic and marketed broadly by American wholesalers. There were three ceramic jar lids of preparations made by Maison Dorin (AU-1, two ex.; Feat. 2); these occur on many archaeological sites of the period and were imported at least by 1882 (Morrison and Plummer 1882:425-427). Another lid from Feature 2 was printed "Gelle Frères/Parfumeurs," a company of the 1890s with an outlet in New York (Devner 1970:54). Another product, name missing, came from "82 rue de Watt...ies/Paris." It is possible that these, and many of the American toiletry products (e.g., Colgate), may be discards from the brothels which lined both sides of Alameda Street.



**Figure 5.8. Chinese Drug Store and Doctor's Office**

(Courtesy, Regional History Center, University of Southern California #7166)

## 6. HEALTH AND HYGIENE

### Toothbrushes

Although toothbrushes were just coming into use in England about 1750, there were much earlier versions in China (Hammond 1989:41). Dentistry was practiced early in China, with arsenic used to treat diseased teeth as early as ca. A.D. 200, a silver amalgam used for fillings by A.D. 659, and full dentures constructed as early as the twelfth century. The toothbrush in its present form, with the bristles perpendicular to the handle, was invented by the Chinese in the 1490s (Ring 1985:81-83).

Oral hygiene in Chinatown is represented by 117 whole or recognizable toothbrushes. Of the total, 52 are handmade, Chinese, whole or nearly so, and 37 are head fragments of similar Chinese types (Figure 6.1). Seventeen are whole examples or marked handles of European manufacture, with four additional fragments which appear to be the same. Seven handles are of indeterminate origin. All save a single ivory example are made of bone.

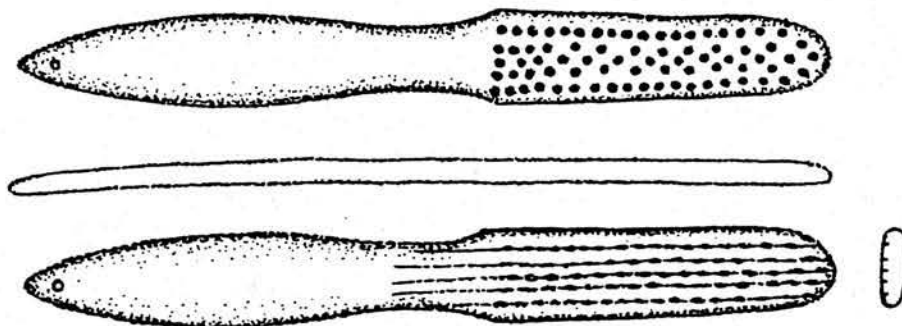


Figure 6.1. Chinese Toothbrush  
(UPT-7007)

The primary attribute of the Chinese group is that the reverse of the head is scored in five (rarely, four) lines parallel to the length, so that the holes for the bristles extend clear through the head. The cut lines extend down the handle below the bristle holes and often, below the shoulder, suggesting that they were incised early in the manufacturing process. An average number of bristle holes in five rows is 92; in four rows, 72. It has been suggested that this technology of an open back permits the toothbrush to be renewed by inserting new bristles. Seven of the handles (including the ivory example) are carved; designs represent the bat, coin, endless knot, flower, and rope (Figure 6.3). All of the group are perforated at the proximal end as for suspension, and three of the group have remnants of metal chains attached. Most of the handles taper to a point, with only a few rounded ends. One example is beveled along both sides, producing an hexagonal cross section. They vary in length from 13.3 to 14.4 cm.

An example purchased in San Francisco Chinatown in 1986 exemplifies the same shape and technology; of highly polished and bleached bone, it is pointed and perforated at the handle and 11.5 cm long (Cat. ACC-86-8, Asian Comparative Collection, University of Idaho). The intact bristles illustrate that a bundle was inserted from the front through to the back side, bent over, and inserted back up through the next hole to the front; presumably, they were all trimmed at the same time. This specimen was stamped with "Hong Kong" in English and a series of Chinese characters translated as "Made by Liang Xin with the trademark of double crosses."

The Euroamerican group tends to be longer, and the bristle holes are not cut through to the back (Figures 6.2, 6.4). Length range of the unbroken examples is 15.5 to 17.5 cm. Most have four rows of bristle with 74 to 118 bristle holes; one has 40 holes arranged in three rows. The mode of manufacture is quite different; holes are drilled longitudinally from the end, the bristle holes are drilled from one face, and the holes at the end are capped or plugged after the bristles have been inserted. The handle ends are variously shaped: round, tapered, square, blunt, and oblique, but only three are perforated for hanging.

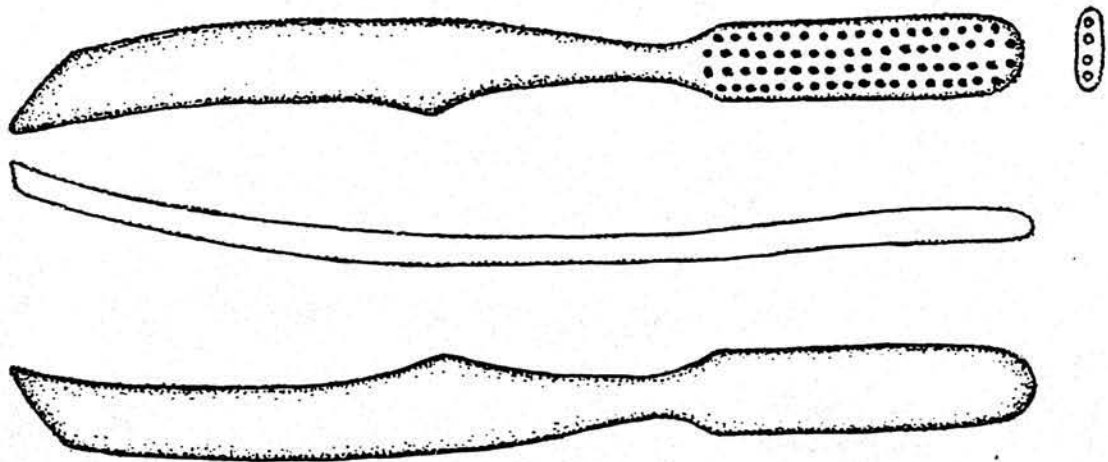
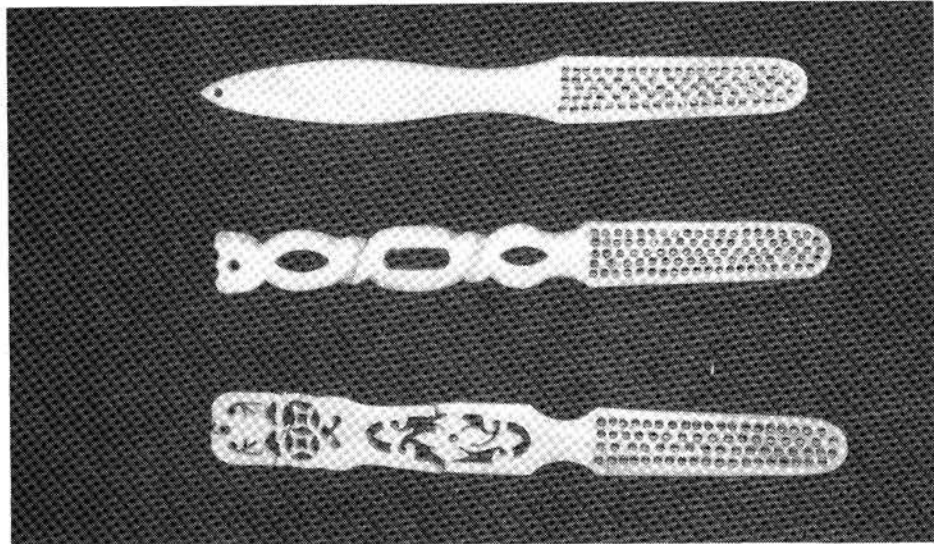


Figure 6.2. French Toothbrush  
(UPT-2002)

Fourteen handles are marked:

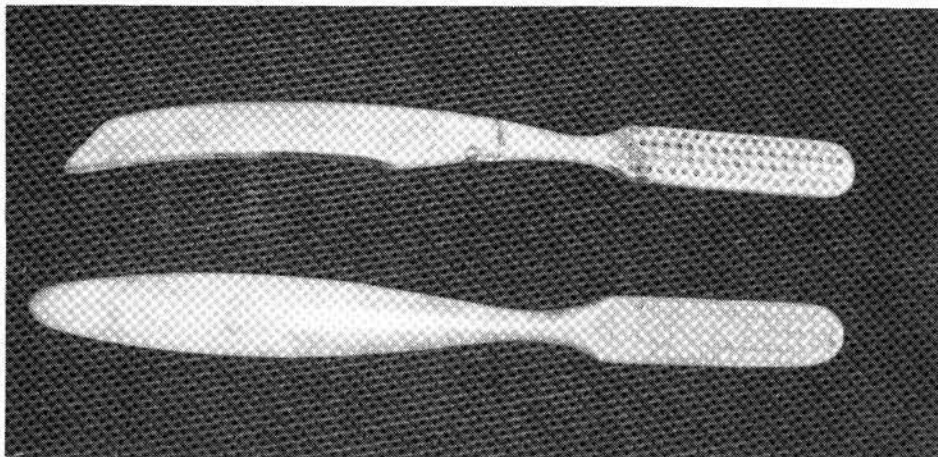
- |                               |                          |
|-------------------------------|--------------------------|
| EXTRA FINE FRANCE - 1         | EXTRA FINE - 2           |
| EXTRA FINE PARIS FRANCE - 3   | SUPERFINE - 2            |
| (Design) PARIS EXTRA FINE - 1 | THE PERFECTION BRUSH - 1 |
| SUPERIEURE - 1                | TRADE (design) MARK - 1  |
| FINEST QUALITY                | MARGHERITA -1            |
| WARRANTED SECURE - 1          |                          |





**Figure 6.3 Chinese Toothbrushes**

(top to bottom: UPT-7007, 3279, 1051)



**Figure 6.4. French Toothbrushes**

(top to bottom: UPT-2002, 1390)

The predominance of French imports is reflected in an 1898 catalogue which illustrates all of the handle shapes in an assortment which is meant to be displayed on a wire rack. Those identified as French cost as little as 45 cents a dozen; they are made of bone with four rows of bristles (Brittain 1898:122). Of 14 varieties offered in 1883, including some specified as French, 10 had four rows of bristles, two had five rows, and one each had three or six rows. The most expensive, at \$2.00 per dozen, utilized badger bristles (Lauer 1883:29).

No significance could be determined from the spatial distribution; the features or general proveniences which contained Chinese toothbrushes contained the European imports as well. For example, Feature 2 yielded 12 Chinese examples and one European; Feature 17 contained four Chinese examples and two French; and Feature 29 had eight Chinese and two European specimens. Locations containing more than a few fragments, and thereby suggesting domestic discards, include Features 2, 11, 19-21, 29, 32, 33, 39, 41, 51, and AU-1. Features 27, 40, 43-50, 52, 53, 56, 58, and 59 yielded none at all.

The practice of dentistry is represented by dentures and fillings. There were five upper dentures made of a vulcanite material, in use after 1851 when Nelson Goodyear developed the process which changed flexible rubber into a rigid, unyielding substance (Ring 1985:242-243). One was a portion of a full upper denture (Cat. 1628, Feat. 2); another replaced right canine 1, left premolar 1, left molars 1 and 2 (Cat. 4310, Feat. 38); and another (Cat. 6194, Feat. 41) replaced right molars 1 and 2, right premolar 4, left premolars 3 and 4, and left molar 1 (Donald Corbett, personal communication 1991).

The porcelain used in facing a denture (Cat. 1959, Feat. 11) came into use during the 1880s, and the plaster casts used to make an impression of the teeth and gums (Cat. 880; Cat. 6189, Feat. 40) were used in America as early as the 1840s (Ring 1985:246, 265). A loose denture tooth was a worn premolar (Cat. 39092, Feat. 29).

Isolated human teeth and fillings included:

- Cat. 1223 - gold molar cap
- Cat. 3504 (Feat. 23) - right premolar 3 or 4, gold foil filling on mesial marginal ridge; some wear and stain
- Cat. 6079 (Feat. 42) - right molar 1 or 2, gold foil filling on mesial lingual marginal ridge; moderate wear, some stain; probably more than 50 years old
- Cat. 6988 (Feat. 41) - left molar 1 or 2, severe distal occlusal decay, probably resulting in abscess, heavy stain; probably around 20 years old
- Cat. 7070 (Feat. 51) - right molar 1 or 2, moderate wear, heavy calculus; more than 50 years old (Donald Corbett, personal communication 1991).

## Eyeglasses

Eleven oval glass lenses were recovered, six of them pairs within the same provenience. In profile, they range from nearly flat with minimum correction, to highly concavo-convex. One pair (Cat. 3210, Feat. 29) is still set within a metal frame with part of the bridge. In size, they vary from 3.4 x 2.3 cm to 4.2 x 3.1 cm. One pair is a uniform light gray (Cat. 1177), and another pair (Cat. 6537, 7064, Feat. 51) is very dark gray.

## Chinese Medicinal Vials

There were a minimum of 666 typable whole or nearly intact small glass containers which held herbal pills and powders, or a total of 695 when all catalogued entries were counted. Some still retained cork stoppers in place. They were first sorted by shape and color. Since no handmade containers of this type are absolutely uniform, they were further classified into groups within a range of sizes. The classification is described as follows (Figure 6.5):

Type 1. The distinctive characteristic of this group, the most abundant, is the gather of glass around a hollow tubular core. The hollow within the body is the same diameter as the neck. Color, size, and cross sections are variable.

1a. Accounting for 72 percent of the total collection, this category occurs primarily in aqua, with 25 percent in pale green. The cores were dipped in molten glass and then formed into rectangular shapes. The body is tapered, wider at the shoulder. The range of sizes from base to shoulder is 3.2-5.6 cm; the length of unbroken necks is 1.0-1.4 cm; and the neck diameters vary from 0.6-1.0 cm. The average base-to-shoulder is 4.8 cm. The width at midpoint is 1.1-1.4 cm, and the thickness is 1.4-1.5 cm. Eight of the vials are marked or labeled.

1b. Made by the same technology as 1a, this group differs by being shaped into a round cross section. The 14 examples occur only in aqua. Base-to-shoulder measurements are 3.7-4.2 cm, smaller than the 1a sample. Unbroken necks are 1.0-1.6 cm long, and 0.7-0.8 cm in diameter. The midpoint body diameter is 1.4-1.5 cm. One example (Cat. 2146) has Chinese characters embossed on the base.

1c. Two examples are clear glass, and distinctly oval in cross section. Base-to-shoulder lengths are 3.95 and 4.95 cm; necks are 1.0 and 1.3 cm. long, respectively; both necks are 0.8 cm in diameter. At the midpoint, the widths and thicknesses are 1.3 x 1.6 cm and 1.2 x 1.5 cm. One contains a fine red powder.

1d. Two examples in aqua glass have the same core center as those above, but have been shaped into a "melon" or 8-lobed cross section. From base to shoulder, they are 3.95 cm and 4.1 cm; both

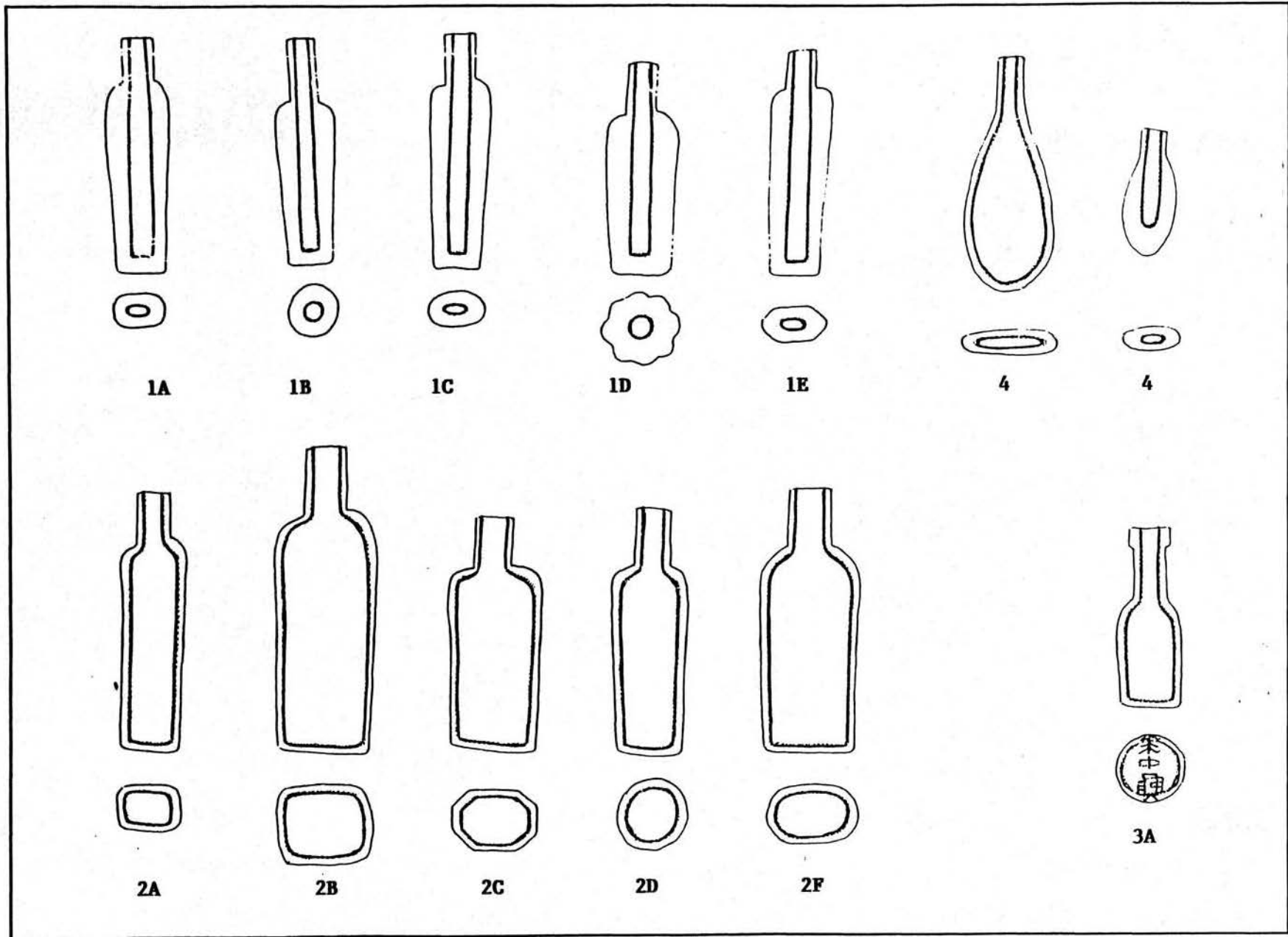


Figure 6.5. Typology of Medicinal Vials



necks are 0.4 cm in diameter. The bodies are 1.6 and 2.1 cm in diameter, respectively. Both examples have three Chinese characters embossed on the base, which seem to be identical (Cat. 1183 and 2392).

1e. The three aqua vials of this type were made by the same method, but are hexagonal in cross section, with two parallel sides or faces wider than the other four sides. Base-to-shoulder dimensions are 4.9-5.3 cm; necks are 1.0-1.3 cm long, with diameters of 0.8-0.9 cm. The body widths are 1.4-1.6 cm, and thicknesses are 1.4-1.8 cm.

Type 2. The distinguishing characteristic of this type is the hollow, blown body which incorporates the neck. The body cavity is thus larger than the neck diameter and of a different shape. All are aqua.

2a. The most abundant of the Type 2 class (88 out of 147), this group is rectangular in section and base. They fall into three categories of size:

(1) Nine are relatively short and squat, with base-to-shoulder length of 3.3-5.1 cm; necks averaging 1.3 cm long with diameters of 0.9 cm. Width and length of the body at midpoint are between 1.4 x 1.6 cm and 2.0-2.3 cm. There are characters on two of the vials.

(2) A larger group, otherwise similar, consists of 38 examples which measure 5.3 to 6.2 cm in base-to-shoulder length. The necks are longer, ranging from 1.5 to 1.8 cm, and 1.0 cm in diameter. Body dimensions are comparable to 2a(1). Two have characters.

(3) Falling between the two groups above in overall height, the final 41 appear to be distinctive on visual examination with thinner walls and greater relative body capacity. They are more uniform in base-to-shoulder height from 5.5-5.7 cm, with necks 1.0 cm in diameter and 1.3-1.7 cm long. The bodies are 1.7 x 2.1 cm at the midpoint. Cat. 6884 contained tiny red pills, and Cat. 3757 and 5500 were embossed.

2b. Otherwise similar to 2a, these 26 vials are of clear glass with very thin walls and nearly square bases. They have a broader range of sizes: base-to-shoulder height may be 3.5-7.1 cm; neck length is 1.3-1.7 cm; and neck diameters are 1.0-1.4 cm. At midpoint, the bodies range from 1.7 x 2.2 cm to 2.6 x 3.4 cm. Eight of the group contain a red powder.

2c. Occurring as either aqua (14) or clear (11), this group is octagonal in cross section and base. They tend to be relatively large within the overall type, with base-to-shoulder height of 4.5-7.1 cm, and necks from, 1.3 to 1.7 cm long. Neck diameters are

1.3-1.7 cm. - The size range of the body at midpoint is 2.4 x 2.6 cm to 3.1-3.9 cm. Two examples were marked with Chinese characters in gold (Cat. 5848, 5849), and three others (Cat. 3711, 4466, and 7205) contained red powder.

2d. Three vials are round with base-to-shoulder height of 3.5-4.8 cm, neck length of 1.6 cm, and neck diameters of 1.0-1.1 cm. Body diameters at midpoint are 1.8-1.9 cm. One aqua example (Cat. 2489) has embossed characters on the base.

2e. Two vials of brilliant emerald green are oval in cross section, broader at the shoulder and tapering to an oval base. Base-to-shoulder heights are 5.1 and 5.5 cm. Both necks are 1.4 cm long with a diameter of 1.0 cm. At the midpoint, the bodies are 1.3 x 1.7 cm. Cat. 5499 has Chinese characters in gold on one side.

2f. Also oval like 2e above, three aqua vials are straight-sided, i.e., do not taper toward the base. They measure 5.1-5.5 cm from base to shoulder, with necks 1.5 cm long and unusually large at 1.5 cm in diameter. Midpoint body dimensions are 1.8 x 2.6 cm.

Type 3. The 18 vials in this group are round, clear, molded glass with long necks and hand tooled finishes. All have embossed characters on the base, wall, neck, or in combination. The glass is somewhat bubbly.

3a. This is a relatively uniform group of 17 clear, molded, hand tooled small glass vials which are round with well defined square shoulders and a lipped finish. Height from base to shoulder varies from 2.5-3.2 cm, and the body diameter is relatively uniform at 1.7-1.8 cm. Fifteen of the group are embossed on the base with three characters which appear to be the same as those on the Riverside specimens (GBF (II):205, Fig. 4c). One vial has a different mark on the base, plus two rows of characters on either side of an elongated neck. One is unmarked.

3b. A single example (Cat. 7270) is taller than 3a, but distinguished primarily by the unique finish. Two mold seams are visible on the body and lower portion of the neck; the expanded finish has a flared lip (broken) and was hand tooled. The neck is relatively short, but the finish is elongated and flared as if for a prescription lip. While the mouth is missing, the finish is bulbous above the neck and seems intended for a cork seal. The vial is 3.5 cm from base to shoulder and would have been about 7.0 cm tall if whole. The body is 2.3 cm in diameter; the neck is 1.2 cm in diameter and 2.7 cm long. Five characters are embossed on one side, and three characters on the opposite side.

Type 4. Four vials, all of clear glass, are distinctive in their tear-drop shape. The smallest (Cat. 5866) was made by dipping or applying glass to a central tube to create the finished shape; the

interior diameter is the same as the neck. Shoulder-to-base height is 2.4 cm, and the body dimension is 0.95 x 1.45 cm. The others, which have an expanded cavity broader than the neck, are described as follows:

No.	Base-to-shoulder	Body at widest point
Cat. 5856	3.5	1.2 x 2.3 cm
Cat. 2145	4.6	1.1 x 2.7 cm
Cat. 5826	4.9	0.9 x 2.4 cm (red pills)

The vials were inspected before washing, and 36 proved to carry some form of identification, 23 with embossed characters and 13 with applied labeling. The clear round bottles with drawn necks (Type 3) were typically embossed on the base. The rectangular aqua vials (Type 2a) were more often identified on the sides with characters applied in gold, cinnabar, or ink. Those which could be translated are listed in Appendix I; two are explicitly sourced to Hong Kong.

The vials were encountered everywhere on the site. The features or proveniences which contained 10 or more are summarized in Table 6.1, and the total distribution by type and provenience is presented in Table 6.2.

Table 6.1. Medicinal Vial Distribution

Location	Number	Location	Number
Feature 1	28	Feature 30	13
Feature 2	15	Feature 32	17
Feature 11	10	Feature 33	16
Feature 16	26	Feature 39	46
Feature 18	17	Feature 41	17
Feats. 19-21, 23	43	Feature 42	14
Feature 22	23	AU 1	81
Feature 29	113	AU 2	68
		AU 3	81

The clear tear drop shape (Type 4) did not usually contain preparations for internal use, but often held liquids used to apply externally for aches or pains. The remedies were sometimes made with an oil base and could be used in conjunction with accupressure or for motion sickness (Mr. Toy and Mr. Tam, personal communications 1991). Some of the vials of this type in the UPT collection did contain tiny red pills, and the same have been illustrated in the Tucson collection (Lister and Lister 1889a).

One use for the aqua vials was to contain travel medicine or medicine against heat. Prof. Tong suggested that this is still used today, and he would always carry some in his pocket while travelling; as needed, he would just place a drop in the mouth (personal communication 1991).

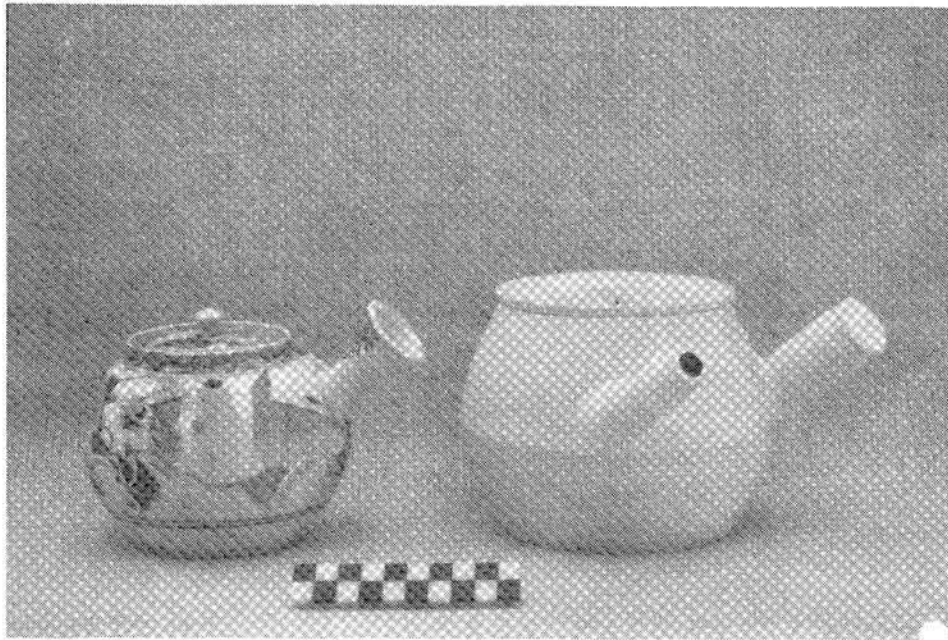
Table 6.2  
Chinese Medicinal Vials by Type

Type	Aqua	Clear	Light Green	Dark Green	TOTAL	Em-bossed	Writing	Contents
1a	465		11		476		8	
1b	14				14	1		
1c		2			2	2		red powder-1
1d	2				2	2		
1e	3				3			
2a	88				88		2	
2b		26			26			red powder-8
2c	14	11			25		2	red powder-3
2d	1	2			3	1		
2e				2	2		1	
2f	3				3			
3a		17			17	16		
3b		1			1			
4		4			4			red pills-1
<b>TOTAL</b>	<b>590</b>	<b>63</b>	<b>11</b>	<b>2</b>	<b>666</b>	<b>22</b>	<b>13</b>	

### Homeopathic Vials

The slender clear glass vials associated with homeopathic remedies numbered at least 16, in addition to many fragments. In various sizes from 4.4 to 7.5 cm long, 14 conform to the pattern advertised in 1880 as "round mouths, heavy lips, 'patent tool' finish (Whitall, Tatum 1880:30); in modern terminology, the finishes would be called patent lip, square and flat on top. They were meant to be sealed with a cork, and one example still has the cork in place. Two vials differ in weight, finish, and presence of an embossment. These (Cat. 1396, Feat. 1) are 6.5 cm long, extra weight, case vials with a blown back finish (Putnam 1965:121). Both are embossed "Dr. Birney's Catarrhal Powder," a remedy sold from ca. 1894-1905 (Devner 1968:14; Fike 1987:154-155).





**Figure 6.6. Chinese Herbal Steamers**  
(Left: UPT-3538. Right: Purchased 1990)



**Figure 6.7. Los Angeles Pharmacy Bottle**  
(Viola & Lopizich Pharmacie Francaise, UPT-5431)

### **Other Hygiene Products**

Nine examples of health-related bulbs, syringes, tubes, and applicators could be related to personal hygiene, self-treatment, or grooming although positive identification of the product was not possible from the fragmentary condition of the items. One syringe attachment, for example, resembled those advertised as either a hot water bottle (Sears, Roebuck 1935:438) or a bulb syringe (Montgomery Ward 1895:106). Another bulb with narrow pipe could have been a cosmetic atomizer (Montgomery Ward 1895:260). The tubes and pipes were hard rubber, and the bulb syringe sets advertised typically came with an assortment of pipes suitable for rectal, vaginal, and infant uses. One glass applicator rod was attached to a stopper, and another to a small rubber bulb as a medicine dropper.

### **Herbal Steamer**

From many fragments, one globular, blue and white porcelain spouted vessel with a lid was reconstructed (Cat. 3538). The unique configuration, with the spout at right angles to the handle, rather than opposed, led to identification as the pot used to steam herbal preparations. Counterparts in coarse earthenware (Figure 6.6) are still available in Chinatowns in either brown or white. The archaeological example is wheel made, 10.0 cm high, with a diameter at the base of 8.0 cm, and at the rim, 7.7 cm. The foot and a band of 1.0 cm at the heel are unglazed. All decoration is painted in blue under the glaze: a double line border above the heel, and floral patterns and diagonal lines on the body, rim, handle, spout, and lid. The spout is vented with nine neat round holes arranged in a diamond pattern. The handle is hollow and flared. The lid, unbroken, is 7.0 cm in diameter with a small knob and a rim pattern which matches the border on the neck. The lower surface is unglazed and it fits well on the unglazed ledge inside the rim of the pot.

### **Proprietary and Prescription Medicines**

The glass bottle collection provides ample evidence that the pragmatic Chinese consulted local physicians, used their prescriptions (Figure 6.7), and purchased proprietary remedies. The names of many patent medicines and local pharmacies are listed in Appendix VII. The drug store addresses, where they can be derived from embossments on the containers or verified from city directories, suggest that the Chinese did not shop much beyond the streets adjacent to Chinatown. Some of the local shops patronized include the following:

John U. Bodenmann, Broadway. pre-1900  
Viole & Lopizich, 427 Main Street. 1891-1912  
Godfrey & Moore, Pharmacists, cor. First & Spring Sts. 1890+  
C. F. Heinzeman, 122 N. Main Street. 1884-1900  
McLain & Gleason, Druggists, cor. Temple & Spring Sts. 1884-1890  
McLain & Leland Drug. Co. ca 1904  
Boswell & Noyes Drug. Co. ca 1896  
Sale & Son Drug Co. 1887-1920.

Proprietary products made locally include DEAN'S DELIGHTFUL DENTIFRICE, dated 1902-1905, and ABEL'S WHITE PINE BALSAM. The latter was a cough and cold remedy; the label was filed with the Patent Office in 1884, and this bottle probably dates 1891-1895 (Frank Sternad, personal communication 1992).

Other nineteenth century patent remedies which were marketed nationally are listed in Appendix VII.



**Figure 6.8. Chinese Kindergarten ca 1900**

(Courtesy, Seaver Center for Western Research, #7166)



## 7. THE HOUSEHOLD

### Cooking

#### Chinese Stoves

Only after matching by color and paste, and reconstructing fragments, was the first group of red/orange pieces from Feature 2 (Cat. 2776) recognized as an old type of portable clay stove. The most complete example has a base diameter of 19 cm, overall height of 19.5 cm, and height from the base to the interior ridge which supports the grate of 6.5 cm. The rim is burnished, in contrast to the very coarse paste, and stamped as shown in Figure 7.1. The grate is made of an unglazed coarse gray clay, with punched holes. It would most likely have been fired with charcoal.

Fewer fragments of a comparable stove with a base diameter of 19.0 cm were recovered in Feature 29 (Cat. 3181), and a second, smaller example also occurred in Feature 29 (Cat. 3021). The latter was 15.0 cm in base diameter, with total height of 9.0 cm and height from base to grate of 4.0 cm.

At least 13 additional grate fragments were recovered; those large enough to yield a diameter measured, variously, 9, 16 (3 ex.), 18, and 19 cm. Obviously, several sizes of stoves were present. The fragments occurred in Features 2 (4 ex.), 16, 29, 30, 39, 41, 42, and 54, and in AU-1.

Charcoal, wood, and even grass were burned in such a portable stove. In the homeland there was typically a brick stovetop as part of the kitchen, with one large hole for using the wok and one or two smaller holes used for boiling; the heat was captured from the chimney and used to heat the bed platform and the rest of the house (Mr. Toy and Mr. Tam, personal communications 1992).

In use, the cooking utensil would rest on the three flaring wings, the space between the top of the wings and the rim affords ventilation for the fire, the fuel rests on the grate, and the squared hole above the base provides both the draft and access for later removing the ashes. Such stoves might be either an auxiliary to the main built-in cooking structure in a Chinese home, or the sole stove for a poorer family, or when cooking was done outdoors. They ranged in size from about 4 inches to 2 feet in rim diameter; the center for production at one time was in Chang-shu, Kiangsi province (Hommel 1937:137-138). They were shaped in molds, then trimmed and polished on the wheel. The maker's chop would be impressed on the rim from a wooden block, tapped with the trimming knife. Smaller stoves fitted with a lid with only a small opening were used by jewelers for melting precious metals (Ibid.:139-140).

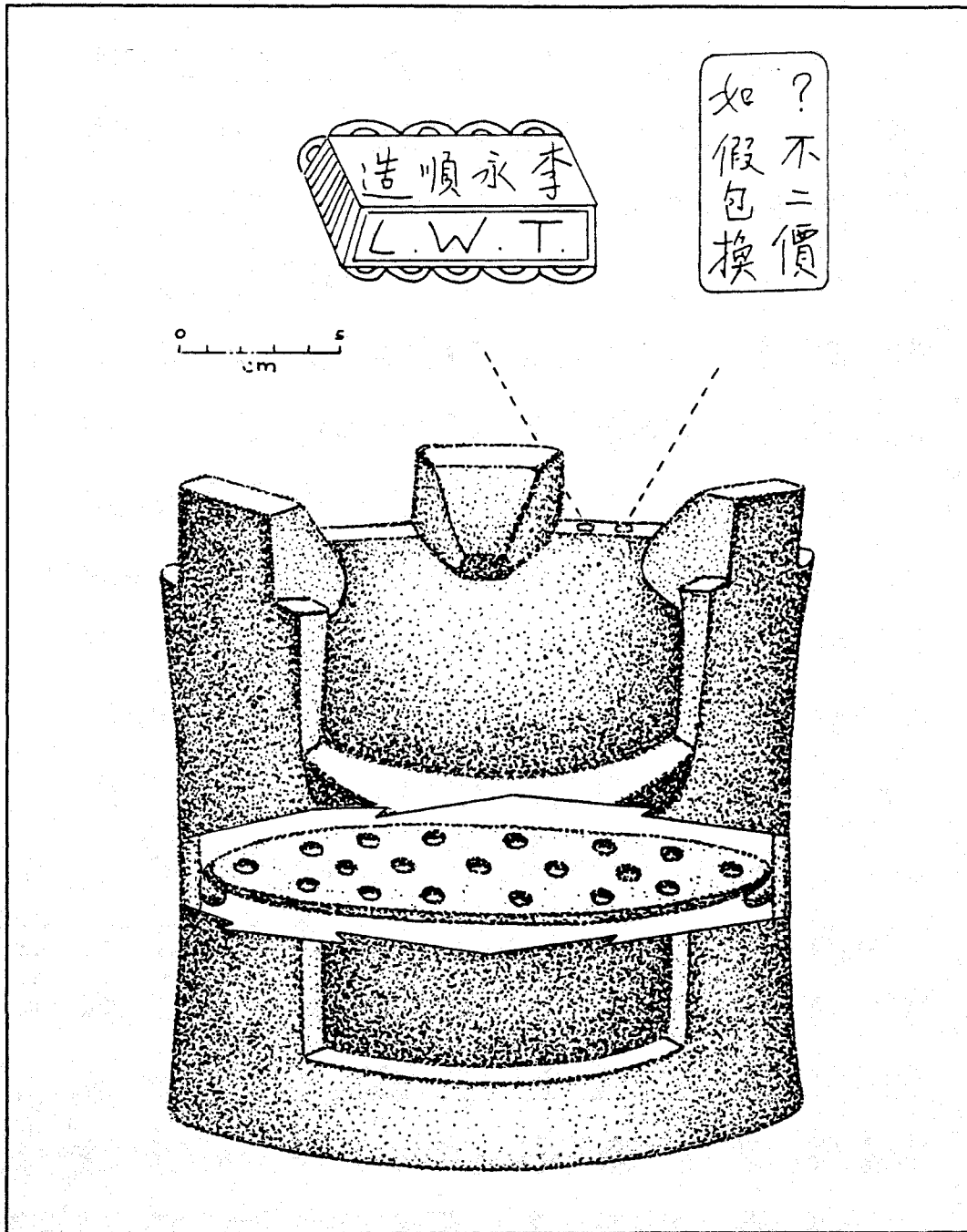


Figure 7.1

Clay Stove (UPT-2776)

## **Wok**

Although most of the ferrous objects were deteriorated beyond positive identification, one nearly intact wok was recovered in Feature 57 (UPT-7163). It is 38 cm in diameter, and 10 cm high. No associated tools, like a skimmer, whisk, or ladle, survived.

## **Euroamerican Pans**

Among the enamel cooking wares were a gray pan 21.5 cm in diameter and 4.5 cm high (UPT-6768/7166) from Features 52 and 57; and a gray coffeepot 17.5 cm tall, also from Feature 57 (UPT-7165). A white enamel bowl with diameter of 12.5 cm and height of 6.5 cm (UPT-6393, Feat. 43) was stamped on the base by a maker (name illegible) from Prussia, Germany.

## **Kitchen Tools**

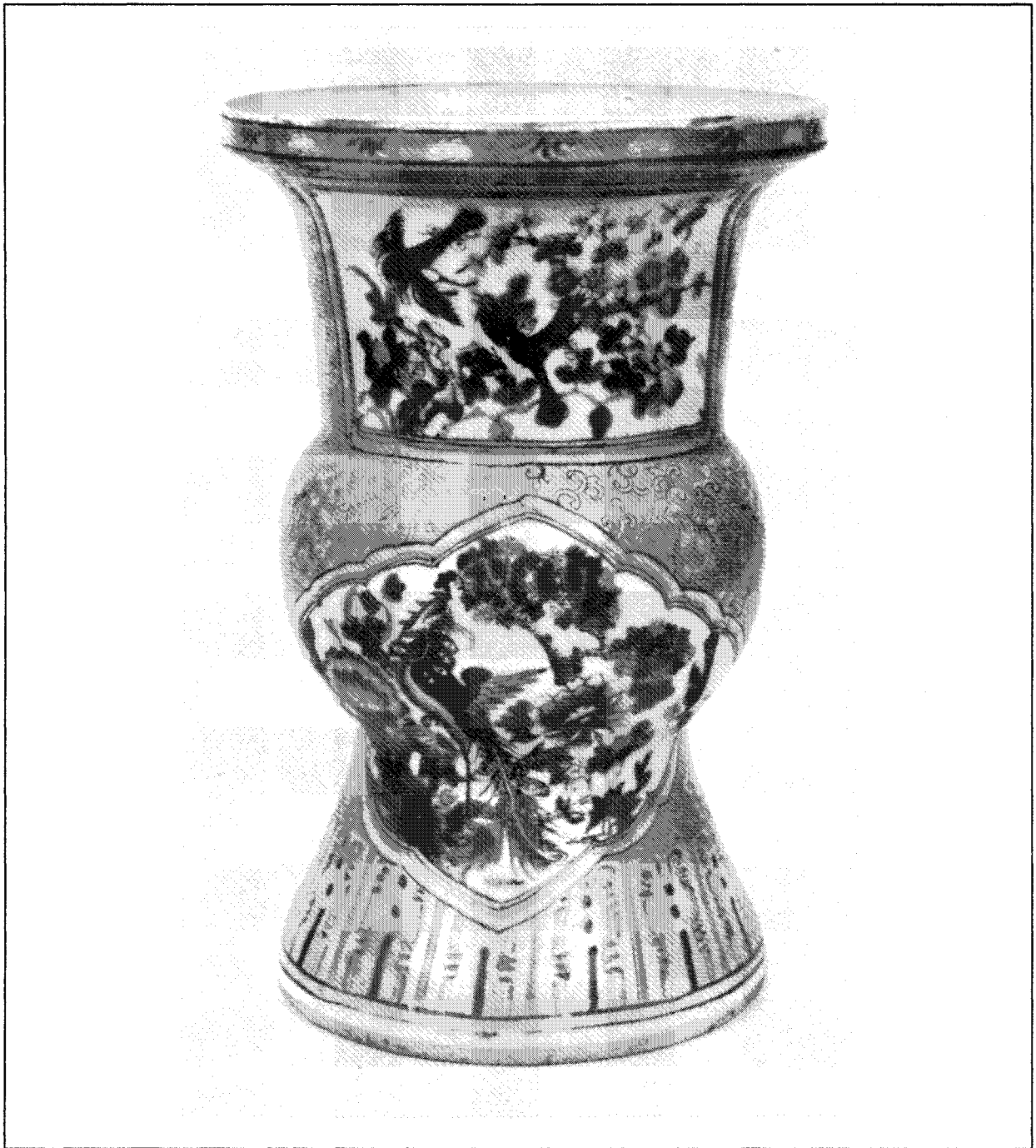
Four cleavers were recovered (Feats. 39, 42, 49, and 58), and two whetstones (both, Feat. 39) which may have been associated. The only Euroamerican implements were a corkscrew, meat hook, five knives, two spoons, and two forks; all of these were recovered from the surface or Features 39 (3 ex.), 40, 42, 44 (2 ex.), or 47 (2 ex.).

## **Spittoons**

### **Chinese**

Traditional Chinese spittoons, consistent in size, shape, and pattern, are represented by 21 fragments; from color distinctions at the rim and one smaller diameter at the foot, at least seven individual specimens were present. Since these have been misidentified elsewhere, and are not presently available in Chinatown stores, full description is warranted. The shape, from the top down, is a flat mouth rim, tapering upper part, bulbous body, the "floor" of the containment vessel, and a high, straight-sided, flaring foot. All but the foot ring is carefully glazed inside and out, and the exterior is elaborately painted as follows:

...decorated on two sides with ogival and trapezoid panels reserved in white containing, in the trapezoid panels [upper portion] birds and flowers, and in the ogival panels [on the body] flowers and birds with in one case a phoenix added, in the other pair of pheasants, on a rose-pink ground featuring scrolling lotuses in yellow and turquoise enamels, with borders of lotus panels on the splayed base, ju-i lappets on the underside of the mouth-rim, and stylized flowers and leaves on a rose-pink ground on the rim" [Willetts and Poh 1981:117].



**Figure 7.2**

**Chinese Spittoon**

(Willetts and Poh 1981:117)



The same designs and ogival reserves also occur on a tall, slender vase of baluster form with zooform handles (Willetts and Poh 1981: Fig. 175), but the shape of the spittoon with its flared rim and a solid interior surface above the high foot, is diagnostic.

The example illustrated by Willetts and Poh (1981: 117) is 39.5 cm tall, and ascribed to the 19th-20th century (Figure 7.2). The most complete Metro Rail reconstruction is 39.2 cm high: 11.5 cm for the upper portion and rim, 17.5 cm for the round body, and 10.2 cm for the splayed foot. Diameter of the rim is 22.6 cm, and of the base, 20.4 cm. The porcelain is pure white, and up to 1.0 cm thick on the foot. The reserves and motifs are identical to the illustrated example. The color variations which contribute to the minimum number are these: the mouth rim has a ground in pink or turquoise; the ogival panels may be bordered in either green or blue; and the base design may be bordered in either pink or blue. The design elements are the same. A comparable example appears under the table in a photograph of the George Macy tea-tasting department in Shanghai dated ca 1890 (Howard 1984:139), and another is on the floor in a formal portrait (Pastron, Pritchett, and Ziebarth 1981[2]:Fig. 9.01).

The fragments were most abundant in Feature 29 (5 ex.), with three in Feature 39, two in Feature 36, and single examples in Features 16, 17, and 42. Although the government is making strenuous efforts to curb spitting as a health hazard, spittoons are still common on the streets and in buildings in China today.

### **Euroamerican**

From the 29 additional fragments, it is estimated that a minimum of 16 Euroamerican cuspidors and spittoons are present. Mostly earthenware, they vary in color and decoration. Nine are molded, most with foliage but one in a basketweave pattern. A minimum of two are glazed in the yellow-brown typical of Rockingham ware; others are green, brown, mottled green and blue, mottled green and orange. Six fragments are sponged in blue, and three are spattered.

The only unbroken example is a Rockingham cuspidor of the molded shell pattern (Cat. 367), 27 cm in diameter and 14 cm high.

### **Fasteners**

#### **Chinese Closures**

Three brass Chinese locks and one folding key were recovered, one each from AU-1 and Features 15, 29, and 41. The keys to such locks, used to secure chests or boxes, do not work by turning tumblers. Instead, each key has a distinctive cross section on a straight shank. The key is inserted into the matching aperture at one end of the lock, and simply pushes against the opposite end

until that end is released. The movable part has one exposed cross-bar, and the portion within the body of the lock has a tapered spring on both the archaeological examples and a modern counterpart.

Used to secure, but not to lock, boxes or books are small closure tabs with one blunt and one pointed end. The eight examples are all bone, and range from 24.4-36.7 mm in length and 5.0-10.0 mm in maximum width. Each has an elongated perforation at the straight end where a cloth, cord, or other means of attachment was fastened. The perforations were made by first drilling two or three holes and then connecting them. In use, the pointed end would be slipped through a loop on the box. Such fasteners are still in use, although more commonly made today of plastic.

### Miscellaneous

#### Ink Stones

One ink stone and the hardwood (teak or ebony ?) fitted stand for another illustrate traditions in calligraphy. The former (UPT-5476, Feat. 29) is made of a shale-like material, measuring 12.8 x 9.2 cm, with a circular depression of 5.5 cm in the middle (Figure 7.3, right) and foliate carved reliefs at each end. The quality of the lithic material led Prof. Chou to comment that it was a "regular one," not an expensive variety. In use, the water would be placed on the wider end, above the applied leaf; the ink stick would then be used to take a small amount of water, and bring it to the central depression for mixing. UPT-6890 (Feat. 44) is a carefully carved shallow wooden tray of the same shape, slightly broader at one end, which would have held a comparable ink stone (Figure 7.3, left). It is 12.7 cm long and 9.8 cm wide.

#### Brush Handle

Also related to calligraphy is a wooden brush handle (UPT-6864, Feat. 44) of the size used to paint broad characters. It was possibly made of bamboo (Prof. Chou). The four characters may denote success and competition, or success in finishing (Mr. Tam).

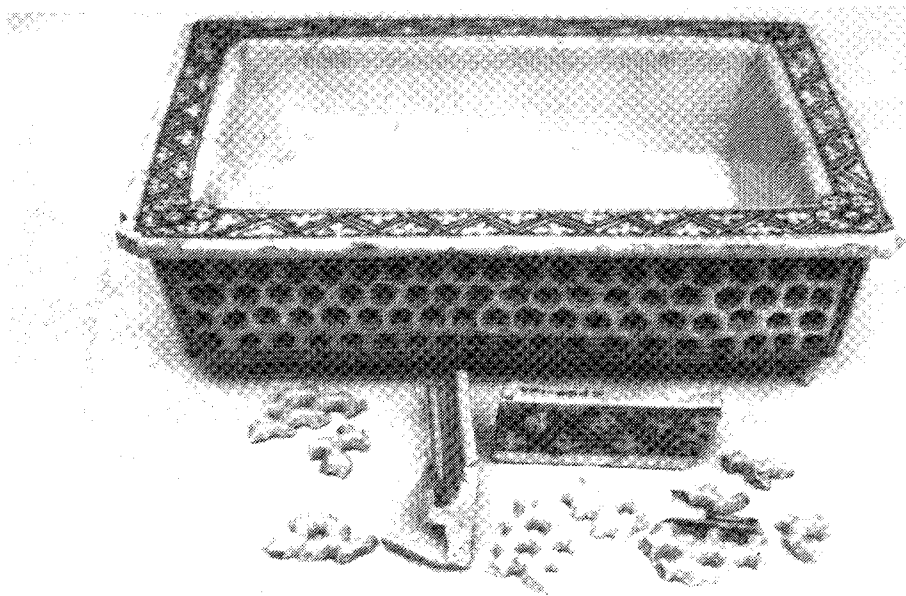
Also related to classical calligraphy would be the small porcelain boxes (below) which held dry, compressed ink.

#### Boxes

A minimum of three small rectangular boxes and one matching lid were recovered. The unbroken example (Cat. 2860, Feat. 29) measures 10.0 x 7.5 cm and 2.7 cm high. It is unglazed on the foot, the rim, and the recessed ledge which received the lid. The overall design, in blue under the glaze, is the sweet pea floral pattern



**Figure 7.3**  
**Ink Stone and Holder**  
(UPT-6890; UPT-5476)



**Figure 7.4**  
**Bulb Planter**  
(Fragments are UPT-6543)

enclosed by double lines on each side. The two other partial examples (Cat. 6889 and 6890) would be similar. These are interpreted as containers for the dry compressed ink.

### **Bulb Planter**

Thirteen fragments from a single provenience (UPT-6543, Feat. 51) represent a minimum of one rectangular vessel traditionally used as a bulb planter (Figure 7.4). Although enigmatic in themselves, the sherds are identical in paste, size, decoration, and form to an unbroken example in a private collection. The latter is 23.3 x 15.7 cm measured at the rim, and stands 5.5 cm high on four stepped feet. The base is glazed with a hexagonal red stamp painted over the glaze. The sides are double-walled, the outer walls bordered with two blue lines and pierced in four rows. The upper rim is 2.3 cm wide, painted under glaze with a diamond border and five-petaled flower at each corner. The interior is glazed but undecorated. The fragments are identical in all regards, including the border design.

### **Pillow**

An elaborate rectangle is penetrated for decorative and firing purposes, but is not a box since it lacks an open side. Partially reconstructed from 17 fragments in Features 39 and 41, Cat. 6190 is 15.0 cm long, 13.3 cm wide, and 6.6 cm high. This is approximately half the length of many pillows in private collections and exhibits, although the width and height are within the same range; experts confirm that pillows did come in this smaller size. Another comparable detail is that on all examples, one smaller end has an unglazed "foot" with a large opening.

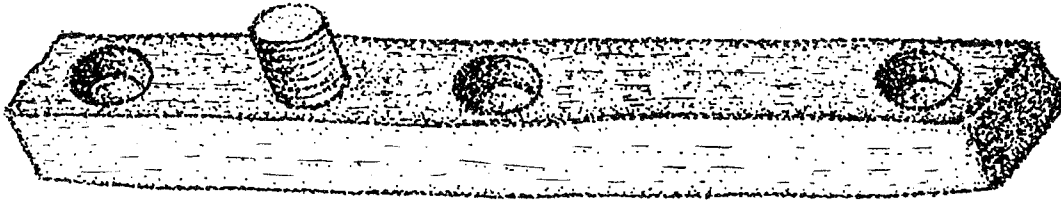
The body of Cat. 6190 is notably fine and white, and the painting in blue under glaze is intricately executed with fine detail. The essential motif is the dragon, among foliate elements or clouds on the borders and isolated on the short sides. The upper and lower surfaces are cut out with the double coin design. The open space on the unglazed end is a scalloped oval shape, surrounded by blue flowers and scrolls.

### **Unidentified**

One wooden article (UPT. 6866, Feat. 44) has not been identified by Chinese consultants or from the literature reviewed. It is a slender item, rectangular in cross section, with four holes drilled on one face, and one round wooden plug in place in one hole (Figure 7.5). It is 12.8 cm long, 1.5 cm wide across the face, and 1.3 cm high or thick. The holes average 1.0 cm in diameter. The whole appears to be hand made with cut, not broken, ends. It could have been used as a talley in gaming.



Figure 7.5. Unidentified Wooden Object



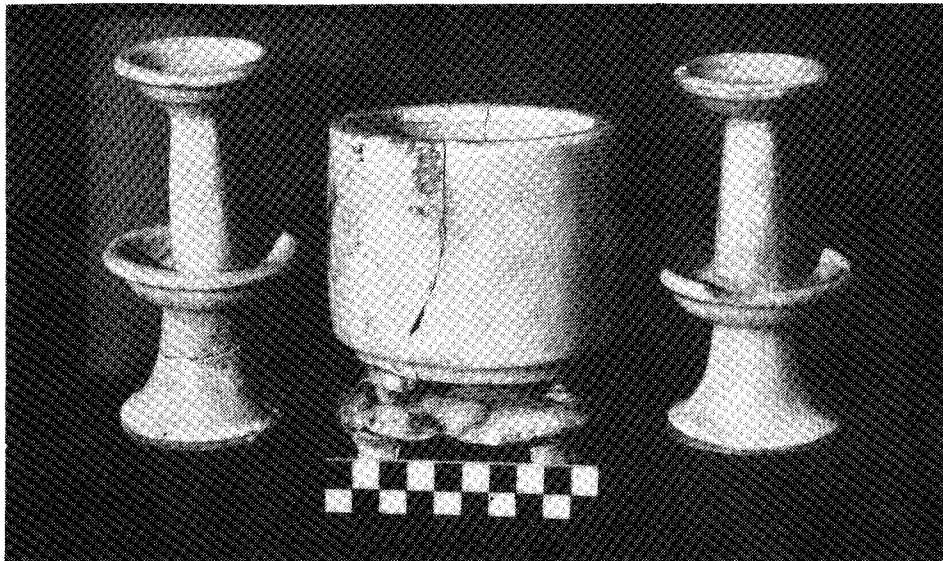
### Ceremonial Vessels

Three pieces, each group identical in size, form, and manufacture, compose the ceremonial assembly used on a home or temple altar. The set includes candlesticks, an incense burner, and the stand for the burner (Figure 7.6). All are glazed the same dusky off-white with a somewhat mottled appearance, over a white-slipped body. The incense jars are cylindrical, 10.8 cm high and 10.8 cm in diameter, with three applied pyramidal feet, which fit into three depressions on the bases. The bases are 10.5-10.7 cm in diameter, and stand 2.5 cm high, on their own three pyramidal feet. The feet recreate a shape used on ancient bronze vessels. There were a minimum of four incense jars and four stands, plus fragments representing an unknown additional number.

The candlesticks number 10, suggesting that two were used to flank a central incense burner. Made in two parts and most often broken at the middle where they were joined, they measure 14.5-15.0 cm in height. The base is hollow, 7.1 cm high above the foot, and terminates in a broad ring 7.7-8.0 cm in diameter. The base and interior of the lower half is unglazed. Rising above this, the upper part is another 7.4-7.7 cm high, ending in another ring 5.9-6.0 cm in diameter. The top has only a small aperture. Both rings are dish-shaped, and contain excess, puddled blue glaze. The clear glaze, slightly crazed, has been applied over a white slip and blue-green painting which seems to have reacted with the glaze.

The two intact candlesticks are Cat. 4301 (Feat. 38) and Cat. 7018 (Feat. 57). The former stands 15.0 cm high, with base diameter of 7.0 cm; the middle ring is 7.7 cm, and the top ring is 5.9 cm. Showing only little variability, the latter is 14.5 cm high with the same base diameter, a middle ring of 8.0 cm, and a top ring of 6.0 cm. The unglazed bases are hollow up to the middle ring, and the upper portion is perforated from the top down to the middle ring.

Figure 7.6. Ceremonial Vessels  
(UPT-301, 4302, 5023, 7018)



The jars are cylindrical; Cat. 4302 (Feat. 38) measures 10.8 cm high, with rim diameter of 10.8 cm, thickness at the base of 0.5 cm and at the rim, 1.05 cm. Bases are glazed and have three stepped feet. The interiors are unglazed and would have held sand to support sticks of incense.

The bases for these jars have three round indentations to match the feet of the incense burners and three swirls in the clay. They, too, have three feet, attached below each of the indentations. The under side of each base is unglazed. Cat. 3237 (Feat. 29) is 10.5 cm in diameter and 2.5 cm high. Cat. 5023 (Feat. 22) is 10.7 cm in diameter and 2.4 cm tall.

Since they were associated in use, all pieces were combined to illustrate the distribution. Feature 29 yielded 10 whole or fragmentary examples; Feature 17 contained seven; Features 22 and 39, three each; and Feature 2, two. Most of the others were recovered from the general area of AU-1.

### Figurines

#### Chinese

a. A soapstone sculpture (Figure 7.7) representing the god of longevity, Shou Lao, was recovered intact and in situ (UPT-2835, Feat. 17). It is 11.3 cm tall. The base has two round holes, as if the figure was mounted, and a Chinese character. The face has



**Figure 7.7**  
**The God of Longevity**  
(UPT-2835)

the prominent forehead, arched eyebrows, and benign smile typical of this symbol. One arm holds a rod or staff, and the other cradles the peach (P'an-t'ao) which blossoms every 3000 years (Williams 1976:209). The folds of the flowing robe show traces of red pigment.

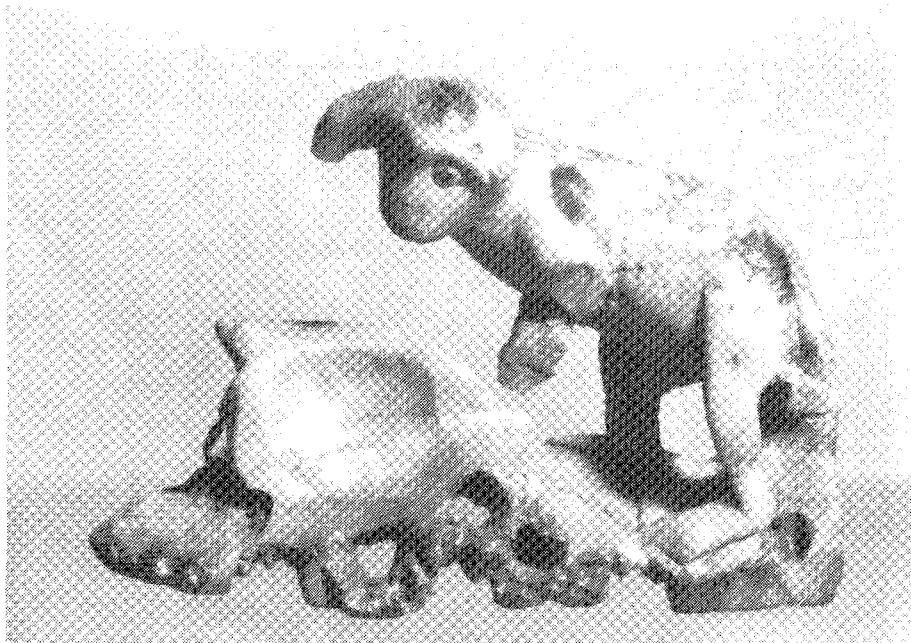
b. A soapstone monkey was partially reconstructed from fragments in Trenches 18 and 19 (Cat. 1221, 2372). It is posed semi-erect in front of a basin, on a carved oval base (Figure 7.8). The height is 8.6 cm, length of the base is 8.6 cm, with width of 3.3 cm. Pupils and eyelashes have been painted on the face. The lithic material is pale tan, with large black inclusions. The monkey is believed to bestow health, protection, and success by keeping away malicious or evil spirits (Williams 1976:278). Cat. 1811, a pair of tiny soapstone paws, could have come from a similar monkey.

c. Ceramic monkeys are depicted in two intact, unglazed figurines and additional fragments of others. Two unbroken seated figurines represent two different sets of the "see-no-evil, hear-no-evil" symbolism (Figure 7.9). Cat. 2856 (Feat. 29) is 5.0 cm high, tan in color, has a hole in the base for attachment, and had been joined to other figures at the legs on both sides. The limbs are crudely applied, but the molding of the facial details and body fur is distinct. The paws are covering the mouth. Cat. 5841 (Feat. 39) is 5.5 cm high, with the paws covering the ears. The modeling of face and fur is similar, but this one shows no evidence of having been joined to another figure. The paste is gray and the surface is black, possibly a result of burning. The monkey has traces of white in the grooves of the surface patterning which may be deliberate overpainting or a result of deposition. Small black fragments found in the same provenience appear to represent a second figure which was part of the same set.

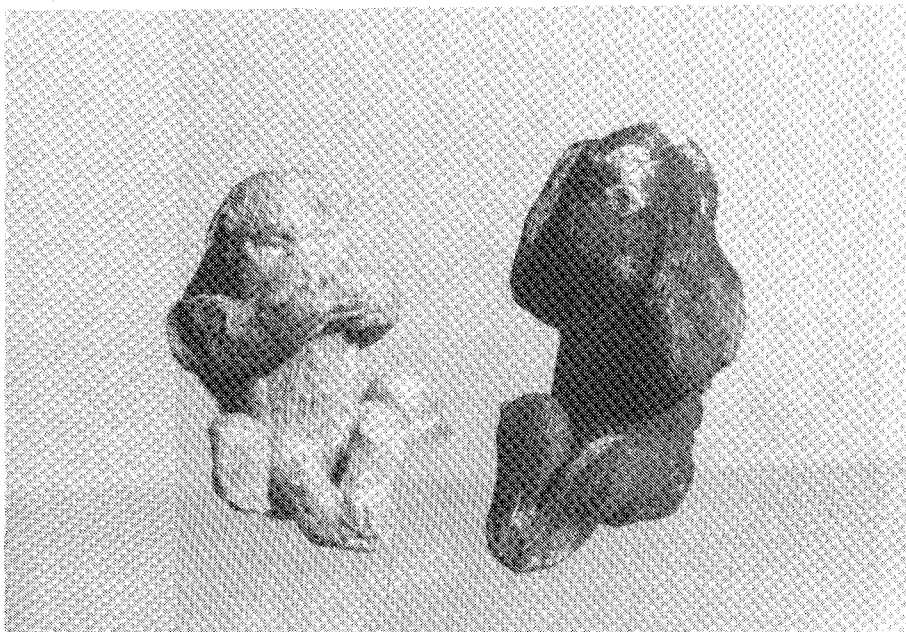
d. A clay sculpture executed with fine detail (Figure 7.10) represents a figure holding a bundle of 11 faggots mounted on an animal which might be an ass or, from the rider's position on the rump, a water buffalo. Cat. 1289 was recovered in fragments from Feature 1; the heads of the rider and animal, arms of the rider, and limbs of the mount are missing. The rider is seated on a folded saddle cloth, with his pants legs rolled up. The mane, body hair, and genitalia of the animal are rendered with minute detail. If whole, the figure would stand about 12 cm high and would be about 14 cm from head to tail. One informed consultant believed that it was made in Fu Chien or Yu Chan city, Guangdong Province, approximately 60 miles from Canton, and would date ca. 1820-1850s (Kamansky, personal communication 1991).

e. A small clay head (Cat. 1754, AU-1) represents a woman with a distinctive Manchu headdress. Including the flaring headdress, the head is 3.5 cm across the face and 3.5 cm from the topknot to the chin at the point of breakage. Each ear is pierced, as if there had been attachments, and the head was part of a larger figure.

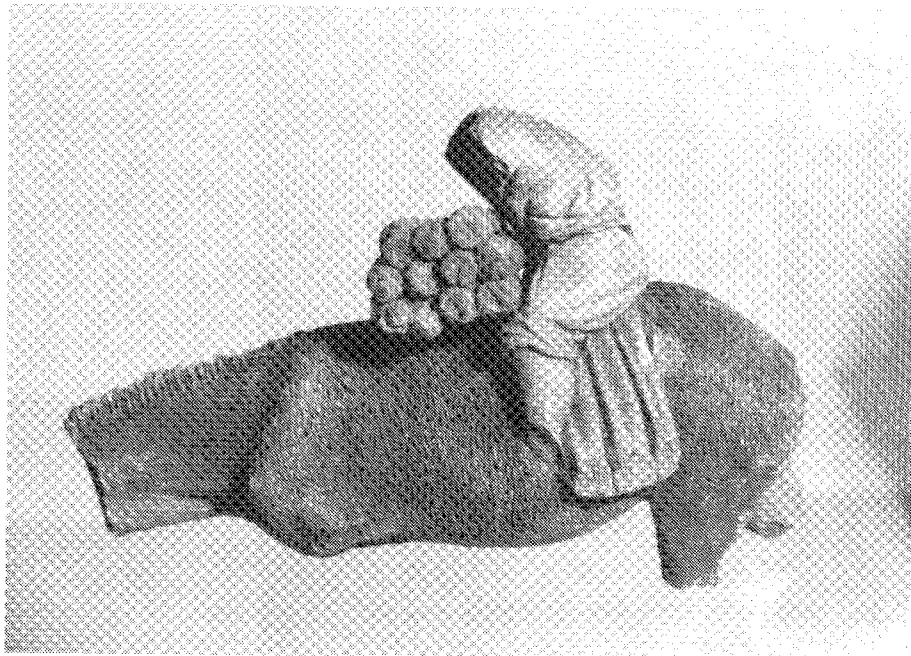




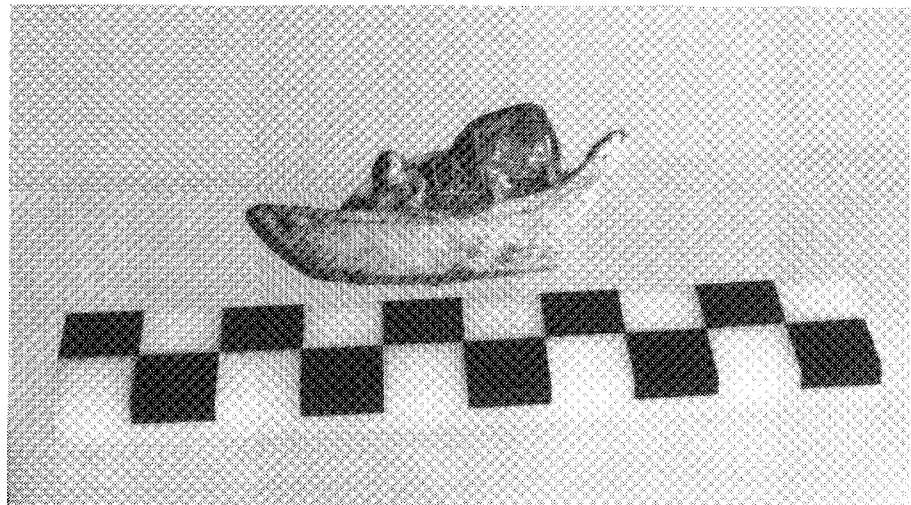
**Figure 7.8. Soapstone Monkey**  
(UPT-1221/2372)



**Figure 7.9. Clay Monkeys**  
(UPT-2856, UPT-5841)



**Figure 7.10. Wood Gatherer, Mounted**  
(UPT-1289/1711/2149)



**Figure 7.11. Sampan**  
(UPT-6128)

Such sculptures were typically painted or glazed (Kamansky, personal communication 1991); the headdress on this example was apparently painted black, and there are traces of pink on the cheeks.

f. A very complex clay figurine was found in many fragments in Features 31 and 32 (Cats. 4263, 5191, 5196, 5210). The head and lower portions are missing, but the representation seems to be a female dancing or in some other motion. The torso is bare-breasted, with a shield or cummerbund rising from the belt to the level of the nipples. One arm is holding a shawl which crosses the back over one shoulder, and the lower portion is covered with a swirling drapery. Unglazed, the fragments show traces of red and green pigmentation. The figure has not been identified, and is not typical of other Chinese sculptures; it does have a near-Eastern (Hindu ?) feel.

g. Cat. 3458 (Feat. 29) is an animal head which appears to be the Foo dog or temple lion often found guarding the threshold of official buildings. In Buddhism, this is an emblem of valor and energy (Williams 1976:254). Only 2.5 cm in diameter, this fragment is crudely modeled and covered with a red-brown glaze.

h. Four unglazed reddish brown earthenware fragments (Cat. 62, 255) have a molded pattern of bricks surrounding a gate or doorway. They may have been part of a model of a city wall, compound, or some structure, or possibly a toy.

i. A tiny sampan with high stern (Figure 7.11) has been modeled and glazed a pale greenish-gray (Cat. 6128, Feat. 42). The awning is depicted as woven wickerwork. Although the seams are indistinct, it was possibly made in a longitudinal, two-piece mold. The length is 5.0 cm.

### **Euroamerican**

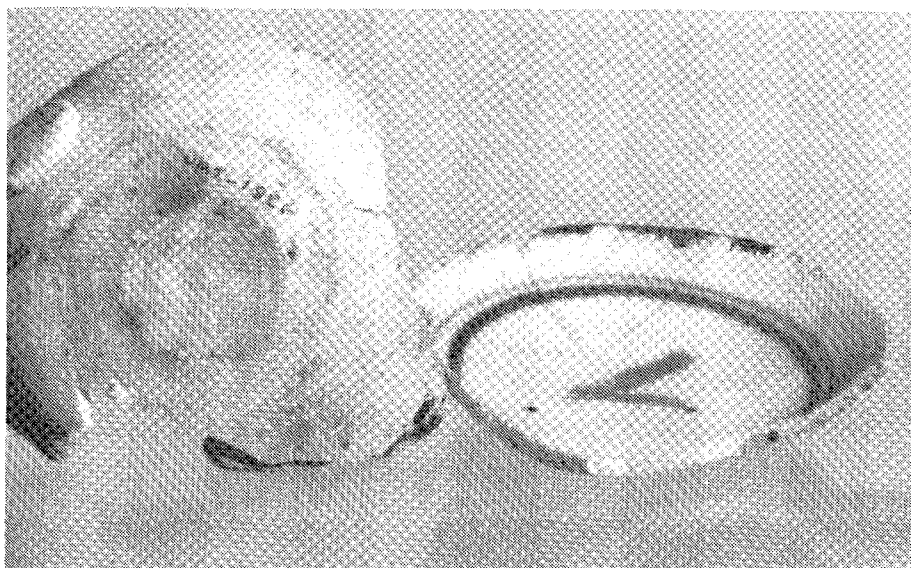
a. A bisque (porcelain) head wearing a broad-brimmed straw hat with a bow and streamers (Cat. 4399) was part of the surface collection. Measuring 4.8 cm across the width of the hat and 5.3 cm from top of the hat to the chin at the point of breakage, the head is hollow and not detailed on the back. The hair is parted in the middle and curly; the mouth is closed. This could have been a doll.

### **Lighting**

#### **Chinese**

Seven small porcelain dishes, unrecognized by any of the Chinese consultants, appear identical in size, shape, and decoration to those illustrated as oil lamps set on top of candlesticks which

Figure 7.12. Oil Lamps  
(UPT-1826, UPT-4666)



resemble those described above, or as candle holders in a possibly ceremonial setting (International Photographic Salon 1957:77, 87). The photograph depicting use as lamps was taken in Vietnam, and the view holding candles in Hong Kong, dates unknown. The examples recovered are 7.0 - 8.3 cm in diameter, 2.0 cm high, with diameter at the foot of 2.5 cm. The under side is unglazed and unmarked, and all have evidence that one handle was attached just below the rim (Figure 7.12). The upper side has a dry rim of about 0.5 cm, a double blue border below the rim, and a single Chinese character in blue in the center. The glaze is a pale blue. The dishes were recovered from Features 2, 17, 22, 24, 31, and AU-1. They are larger and deeper than the condiment dishes, and differ also in having no glaze on the lower side, a flat base without ring foot, and evidence for a handle.

The rims of three specimens are encrusted with a dark substance, probably a product of burning. It is noteworthy that a Euroamerican butter pat of approximately the same size and shape has been put to the same purpose and has the same tarry encrustation on the rim. The Chinese have traditionally used small vessels such as these as lamps, inserting a wick and burning peanut oil or animal fat (Chou, personal communication 1990), and employing a suitable Euroamerican dish in the same manner would be consistent with Chinese thrift and pragmatism.

### **Euroamerican**

Kerosene lamp parts included globes, fonts, and burner assemblies. An intact night lamp ("Nutmeg") was stamped with the patent date of



1888, and identical to Figure 7.13 (Plume and Atwood 1906:40). Two other burner assemblies probably came from the same type or make, and there were numerous regulators, wick holders, and glass chimneys. Gas jets and burners, and oil lamp chimneys are other evidence of illumination.

### Electrical

At least some structures in the community were apparently electrified around the turn of the century. Marked and dated electrical porcelains include tube insulators, cleats, rosettes, and other fittings (Appendix VI).

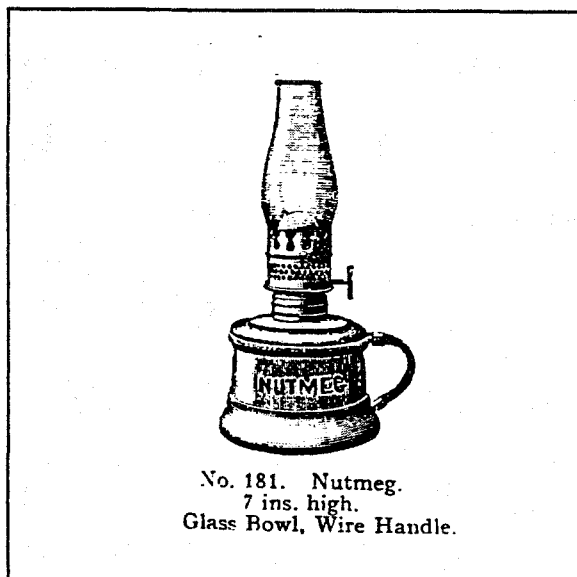


Figure 7.13. Nutmeg Lamp  
(Plume and Atwood 1906:40)

## Structural Remains

### Bricks

Brickmaking came early to Los Angeles, in response to increasing demands for building materials in an area which lacked wood. The first bricks were burned by Capt. Jesse Hunter in 1852. The second brickyard was established by Joseph Mullally in 1854. In 1859 alone, 31 brick structures were finished, requiring 4,300,000 bricks in their construction. In 1861, the "old adobe buildings on the corner of Commercial and Main streets" were demolished, to be replaced by "a fine substantial brick block" (Thompson and West 1880, passim). Urban redevelopment was already well under way. The Los Angeles Pressed Brick Company was founded in 1887, located north of Macy Street, just two blocks from Chinatown.

Bricks, isolated, aligned, or mortared together, occurred nearly everywhere, and most were broken and dislocated during demolition. All the early technological processes were recognized - soft-mud, stiff-mud, and dry-pressed. Many had very coarse inclusions and soft edges; a number were misfired and misshapen. Only samples were retained. Most were fired red, although a few fire bricks were observed. Legible stamps are listed in Table 7.1.

Table 7.1. Makers' Marks on Bricks

Stamp	Probable Maker	Date
Atlas	Atlas Fire Brick Co. ?	1921-1927 (G 205)
Dougl.../Excel	Pacific Clay Products	1921-1942 (G 232)
G. McB	Gladding McBean	1875-1962 (G 240)
L.A.P.B.Co.	Los Angeles Pressed Brick Co.	1887-1926 (G 259)
L.A. Paving Brick Co.	?	?
J. Mullally/Los Angeles	J. Mullally	1854-? (T&W 69)
Simons	Simons Brick Co.	1902-1941 (G 296)
St L B & C Co.	St. Louis Brick & Clay Co. ?	1927-1935 (G 227, 301)
...CP	Tillotson Clay Products, Inc.?	1953 (G 305)

Ref: Gurcke 1987; Thompson and West 1880

The physical remains correspond to the historical photographs and eyewitness descriptions of the buildings (e.g., Sterry 1922). While most of the pictures were taken in the twentieth century and probably with deliberate intent to record the best aspects of the tidiest blocks, the excavation results and a few views combine to suggest that many of the first buildings were wood frame, and that the replacements, or newer structures, were built of brick. The predominance of cut nails over round wire nails, and bricks which are early by both embossments and technology are evidence that most of the structures date to the last quarter of the nineteenth century. The use of personal, portable lighting devices suggests that electrification was not available at the time of construction or affordable to all even later.

Floor tiles included one-inch white, hexagonal, unglazed examples, and round ones of 13/16 inch and 1.5 inch diameters. Two rectangular specimens were embossed:

A. E. Tile Co. Mark of American Encaustic Tiling Co., in business 1875-1935; this mark was filed in 1905 (Lehner 1988:21). 6 x 1 x 0.5 inches. Feat. 21.

S.E.T.W. Mark of Star Encaustic Tile Co., 1886-1939. Monogram filed in 1905 (Lehner 1988:21, 480). Maroon. AU-1.

### Doorknobs and Locks

There were 37 doorknobs, some paired examples still connected on the shank. Of the whole ones, 12 were white, 8 brown, and 11 black or extremely dark. There were four ferrous door locks and the same number of backplates or keyholes; other hardware included hinges and one knocker. Padlocks may have served a number of purposes, and keys to either doors or padlocks numbered 22. At least three were made by the Eagle Lock Co. of Terryville, CT, and appear identical to those illustrated in the 1908 Sears catalogue.

## 8. SUBSISTENCE

Faunal remains from Features 2 and 3 were submitted to the Zooarchaeology Laboratory of the Institute of Archaeology, UCLA, to test the assumption that the ethnic character of the deposit would become apparent in both the proportions of species and the methods of dismemberment. The weight of this limited sample amounted to 6964 grams. Selected fish remains were identified by Mark Roeder, Paleo Environmental Associates, and reptile remains were examined at the Natural History Museum in San Diego. A sample of 90 seeds was identified by Elizabeth Honeysett. The detailed reports of mammals, birds, and seeds are appended in full with quantifications and species accounts.

The array of species proved to be distinctive, in contrast to faunas from Hispanic or Euroamerican sites in southern California. Here, pork was the favored mammal, as opposed to beef. Chicken was the next favorite meat, with duck, turkey, goose, and pheasant present, in that order. Turtles, both local pond species and others which were imported, were utilized, and imported cuttlefish bone was recovered from all features. Of minor importance, but visibly cut and cleavered, were ground squirrel, cat, and rabbit. Local fish species included horn shark, salmon, barracuda, corvina, spotfin and yellowfin croaker, white sea bass, ocean whitefish, sandbass, bonito, and halibut. From southern Baja California or the Gulf of California came parrotfish and shortfin corvina. Types of yellow croaker and pufferfish were imported from South China, probably in dried or salted form.

Selected examples of more complete bones from Feature 16 were compatible with the sample from Features 2 and 3. The former yielded a pig cranium, juvenile turkey, cut and cleavered adult domesticated goose, cleavered Canada or snow goose, uncut whole chicken long bones and pelvis, and several types of duck bone, one about mallard size and another, smaller and more like pintail or other wild duck.

A minimum of three individuals were identified by Dr. Robert M. Sullivan as *Gecko gecko*, an Asian lizard. One crocodile tooth could not be identified to genus or family, and two large snake vertebrae are colubrid, probably *Pituophis* sp.

Molluscan remains included crab, black abalone, California and wavy chione, Pacific oyster (not native), Pismo clam, common littleneck clam, and California lucine. Oysters were being brought into Los Angeles as early as 1857, when commercially produced ice was available (Thompson and West 1880:67).

More than half of the macrobotanical remains represented two genera of the squash family, winter-melon and bitter-melón. Ten examples each of Chinese olive and lychee seeds were collected, along with

peanut shells and peach pits. One shell fragment was identified as the white nut of the Ginkgo or maidenhair-tree, cultivated as a sacred tree in Buddhist temple courtyards, served as a delicacy at feasts and also used in folk remedies.

Two facets of the analysis must be emphasized: first, that the sample represents only a small portion of the total recovery from all features, and second, that the mammals, birds, fish, reptiles, and mollusca which have left skeletal remains behind comprise only a very small part of the traditional Chinese diet. To the meat fraction must be added all of the preserved vegetables, grains, and other foods which were imported in the stoneware jars, plus the fresh produce grown and sold locally. There is little evidence, in the form of glass or tin containers, that much of the diet came from locally purchased products, and almost none that self-sufficiency was bolstered by canning or preserving at home. Fresh vegetables, always a major component in the Cantonese cuisine, would have been abundantly available from the Chinese predominance in truck gardening, vending, and later, produce brokering, while there is documentary evidence that chickens and pigs were commonly raised in any available space. Eggshells were abundant in the deposits, and two milk glass nest eggs are further evidence of this backyard economy. They were recovered from AU-1 and Feature 4; the latter is embossed by the Cambridge Glass Co., formed in 1903 (Toulouse 1971:107). Overreliance upon animal bone in attempting to reconstruct the subsistence pattern would bias the interpretive effort; fresh meats have not traditionally constituted a major fraction of the total intake, and the archaeological remains - other than the sample of identified seeds - do not reflect the consumption of fresh vegetables.

### **Selected Fish Remains from Chinatown** by Mark A. Roeder

#### Introduction

Except for the recent studies of the fish at Riverside Chinatown, little has been known about fish species utilized by the Chinese at their settlements in southern California in the late nineteenth and early twentieth centuries. The excavations at CA-LAN-1575H yielded a large quantity of fish remains. The identifications are important in documenting the species consumed, the involvement of Chinese in regional fisheries, commercial fish distribution, and the degree to which imported species were shipped from the homeland. The presence of exotic species, that is, varieties which do not occur locally, has important implications on Chinese trade and trade networks with other areas.



## Method

A sample of the fish bones, bony parts, teeth and scales recovered from the washed sample was provided for study. This constitutes only a small portion of the total recovery, and the balance is curated for reference and future analysis at the Zooarchaeology Laboratory, University of California, Los Angeles. More than 1000 specimens were contained within this sample, and identified with reference to comparative material (John E. Fitch Collection) housed at the Ichthyology Section, Natural History Museum of Los Angeles County; the author's private collection; and that of Dana Bleitz housed at the Center for Public Archaeology, California State University, Northridge. Dr. Peter D. Schulz, California Department of Parks and Recreation, provided comparative skeletons of several species of fish obtained in China.

Most of the elements were isolated vertebrae which are difficult to speciate with confidence (Ritchie 1986). Salls (1988) has suggested that vertebrae can be identified to the species level, but the process is very time-consuming. Even with local species, it takes a great deal of time to identify elements to the species level from vertebrae alone (Glassow 1965:6). While fish otoliths (earbones) are much easier to identify than vertebrae and skull elements, only the larger ones would be captured by the screen size employed by necessity during rapid recovery excavation (Fitch 1967).

Fish skeletons available for comparative purposes from other regions such as Pacific Mainland Mexico, the Gulf Coast of Louisiana and Texas, the Eastern Seaboard, and South China are few in number, and only a few specimens of Chinese marine fish were available. It is known that fish were imported from all of these areas (Collins 1987; Schulz 1982, 1984), and such remains may be present in the collection curated for future study.

## Fish Fauna by Geographic Origin

Table 8.1 lists 13 kinds of fish utilized by the Chinese at this site and their geographic origin.

### Southern California/Northern Baja California

Most of the fish identified probably came from this area (abbreviated SCNBC). The reason for including northern Baja California is that in the late 1880s and early 1890s, a fleet of Chinese junks based in San Diego Bay fished for bonito and barracuda along the coast from north of San Diego to 200-300 miles southward, off the coast of Mexico. Of the 159 San Diego fishermen at the time, at least 52 were Chinese (Collins 1892). It is quite possible that the fish products were salted before they arrived at the Union Station area. Ice was scarce. The Chinese fishermen at

San Diego salted and dried most of their catch to ship to San Francisco for subsequent export to China (Ibid. 1892). In commenting on the nationalities of commercial fishermen in Los Angeles County, Collins stated, "The Chinese have no foothold" (1892:38). The same author listed barracuda, whitefish, roncador (probably refers to spotfin and yellowfish croakers), and smelt (probably including top and jack smelt, and grunion) as the primary commercial catch at that time in Los Angeles and Orange counties.

Three of the four of the last-mentioned groups were recovered at Los Angeles Chinatown. Collins also listed halibut, bonito, white sea bass, and sheephead as sold fresh at various markets on the Los Angeles County coast. Others, including barracuda, bonito, jewfish (black seabass), and whitefish were salted and dried on Santa Catalina Island; they were cured for the San Francisco market and shipped from San Pedro. Except for the black seabass, all were recovered archaeologically.

Table 8.1. Fish Fauna from Chinatown

Taxa	Common Name	No.	Feature
<b>Southern California/Northern Baja California</b>			
<i>Heterodontus francisci</i>	horn shark	1	2
<i>Oncorhynchus</i> sp. ?	salmon	1	1B
<i>Sphyraena argentea</i>	Ca. barracuda	1	AU-1
		1	3
		2	29
<i>Cynoscion parvipinnus</i>	shortfin corvina	1	21
<i>Roncador stearnsii</i>	spotfin croaker	2	AU-1
		2	1B
		8	2
		1	10
<i>Umbrina roncador</i>	yellowfin croaker	5	AU-1
<i>Atractoscion nobilis</i>	white sea bass	2	2
		16	3
cf. <i>Caulolatilus princeps</i>	ocean whitefish	3	3
<i>Paralabrax</i> cf. <i>P. nebulifer</i>	barred sandbass	1	2
<i>Sarda chiliensis</i>	bonito		
<i>Paralichthys californica</i>	Ca. halibut		
<b>Southern Baja California/Gulf of California</b>			
cf. <i>Scarus</i> sp.	parrotfish	1	3
<i>Cynoscion parvipinnus</i>	shortfin corvina	1	10
<b>South China</b>			
<i>Pseudosciaena crocea</i>	yellow croaker	1	2
		1	12
		1	AU-1
Tetraodontidae	pufferfish	1	2

## Southern Baja California/Gulf of California

The shortfin corvina (*Cynoscion parvipinnus*) is included in the SCNBC region because it was taken commercially in San Diego Bay (Collins 1892). Although now extinct locally, it was caught into the 1930s in southern San Diego Bay (John Fitch, personal communication 1980).

This region was defined for two reasons. One is to reflect species that may have been taken by Chinese junks based at San Diego and other ports in northern Baja California (Collins 1892), which fished in the warmer waters of southern Baja California. The other reason is to reflect dried fish products exported from the mainland Mexico port of Mazatlan (Chace, Collins, and Roeder 1986) which possibly entered the Los Angeles market after 1900. Of the two species listed, the parrotfish was probably taken as an incidental species by Chinese junk fishermen in southern Baja California.

Shortfin corvina was mentioned by Chace, Collins, and Roeder (1986) in the analysis of the Riverside collection as a species imported from the Mazatlan area. Bell and MacKensie (1923) listed "chalangandina" (shortfin corvina) as one of the species taken commercially in this area. They reported that Chinese wholesale buyers bought dried fish (croakers and other species) locally for export to San Francisco and ultimately, China.

## South China

Two species, the yellow croaker (*Pseudosciaena crocea*) and the larger pufferfish (family Tetraodontidae) represented dried fish imported from South China. Yellow croaker and pufferfish have been reported from Riverside Chinatown and other sites in northern California (Schulz 1982, 1984; Langenwalter 1980). Yellow croaker is still available in Asian fish markets in southern California.

## Discussion

Features excavated at the Union Station site have been dated from artifacts and historical sources as deposited from the 1880s to about 1915. Only a small fraction of the total number of fish remains has been examined, so these conclusions are preliminary.

First, most of the fish identified were taken locally. No doubt, with an expanded effort, additional species can be added to the inventory, from both local and exotic sources. The local fish probably came from the fresh fish markets in San Pedro. The presence of parrotfish jaws possibly indicates that fish were obtained from the warmer water of southern Baja California and the Gulf of California. The pufferfish and yellow croaker signify the export of dried fish products from southern China.

Second, only two species, the parrotfish and shortfin croaker, possibly came from southern waters of Magdalena Bay, Baja California Sur, Mexico, in the Gulf of California. On the basis of the Riverside Chinese fauna and historical data of the Mazatlan fish markets, Chace, Collins, and Roeder (1986) speculated that after the collapse of Chinese fishing off southern California in the 1890s, dried fish products found their way into southern California Chinese settlements. If this is the case, it is possible that the archaeological features were deposited prior to 1900.

Another explanation for the array is that a larger sample was excavated at the Riverside site. Many of the identifications from the latter community were based on large otoliths that are readily recognized by excavators and easily identified.

Because of the large number of unidentified fish remains from Los Angeles Chinatown, more comparative material is needed, particularly from the warmer waters of Baja California, the Mexican mainland coast, and South China. Schulz, a specialist on fish remains from historic Chinese communities in northern California, has made trips to China and collected some of the local marine species. This small but valuable collection is in the Department of Anthropology, University of California, Davis. The need is for not only skeletons of marine fish species from China and other areas that were sources of dried fish products, but also osteological material from fresh water species which were cultivated in ponds in China and harvested in other areas.

This first examination of a sample of the Union Station fish remains is important in demonstrating how osteological material can contribute to identifying and sourcing an important component of the Chinese diet. The fish remains are small in size and require fine screening for recovery; they are not as obvious as mammal bones, and without this extra effort, an important part of the subsistence pattern could easily be underrepresented. With more reference collections of species from outside of southern California, much additional insight and detail can be developed about Chinese fishing, marketing, and trade networks.



## 9. CONCLUSIONS

### Synthesis

A total of 59 cultural features was documented during the archaeological investigations. The features roughly correspond to five types: trash deposits; architectural remains; landscape features, e.g., fence posts; privies; and paved surfaces. Most of the architectural features could be correlated with the historical documentation, which in turn allowed a more refined dating and interpretation of the refuse deposits and some of the more ambiguous architectural features, such as the brick alignment of Feature 5.

Locus 1 is the location of several structures that were present on the north side of Apablaza Street and east of Benjamin Street (Dakin 1889). Specifically, the area is listed (west to east) as 305, 307, 309, and 311 Apablaza Street, which are single story wood frame structures in a small block of four buildings. Address 305 is listed as a "Chinese Store" while the others appear to be dwellings. In 1925 the Sanborn maps depict the changes since 1889, with three of the four original structures having been replaced. In addition, the addresses also changed - (west to east) to 519, 521, 523, and 525, respectively. Structure 519 is labeled as a dwelling, 521 Chinese, 523 Chinese, and 525 is listed as a "Chinese Mission" (Sanborn 1925).

The Sanborn (1925) and Dakin (1889) maps provided the means to identify some of the cultural features discovered during the archaeological investigation. By comparing the mapped field locations of the features with the detailed maps, it was possible to postulate probable function. In Locus 1, Features 7 and 9 (fence posts) correspond to the north-south fenceline between 309 and 311 Apablaza Street on the 1889 Dakin map. The burned wooden planks of Feature 13 are oriented perpendicular to the presumed alignment of Features 7 and 9 and may represent fallen fence boards. The brick alignment east of the postulated fence (Feature 5) may suggest a walkway or border in the backyard of 309 Apablaza Street. By 1925 (Sanborn), the fenceline had disappeared and a new building had been erected to the west at 523 Apablaza Street. The remaining features were refuse deposits. Based on temporally diagnostic artifacts, e.g., electrical fixtures, ceramics, coins, and glass, the Locus 1 refuse deposits appear to date from ca 1903-1920.

The small block that this locus occupied in 1889 (Dakin) included three Chinese dwellings and on the western margin, a Chinese store. By 1925, the majority of the structures had been replaced and one is identified as a Chinese Mission. This particular locus appears to have been oriented to a domestic rather than commercial operation for the periods of time with historical documentation.

Locus 2 in 1889 consisted of a single wood frame structure noted as "Chinese" (Dakin 1889) with an address of 315 Apablaza. By 1925, the structure had been replaced by two large structures listed as "Wagon Shed" and "Chinese Vegetable Peddlers" with an address of 541 Apablaza (Figure 9.1). The spelling of the street name with either a "z" or "s" was varied and inconsistent through time, and thus useless as a chronological marker on the historical documents. Feature 17 corresponds to the south foundation of the "Peddlers" structure (Figure 9.2), and the piers depicted on the map are Features 24 and 31.

The locus which was depicted on the 1889 Dakin map as settled with domestic residences, had changed by 1925 to contain three large commercial structures labeled as "wagon shed" and "Chinese vegetable peddlers storage and rooms." A minimum of 37 horseshoes of the very large and heavy draft types, and at least two containers identified as horse medicines, constitute evidence of this. The trash deposits in this locus date from 1900 to 1920 and reflect the presence of workers living and cooking at the corrals.

Locus 3, Emergency Exit 10, is just north (18 m) of the Chinese tenements, in the vicinity of the south side of the Southern Pacific Railroad yard. The features (39-42) discovered in this locus are all refuse deposits and lack any intact architectural elements. The absence of structural remains and the nature of the features (trash pits) are in keeping with the probable usage that a track yard would have. The features within this locus appear to date from 1900 to 1920.

Locus 4 is situated in the area between John (also, Juan) and Benjamin Streets, specifically the back lot (Dakin 1889). The addresses for this area are 10 and 12 John Street, which were two wood frame structures. By 1925, the area had been significantly altered, with the two earlier dwellings (Figure 9.1) being replaced by three new buildings - a "Vegetable Men's Storage," a large open sided building, and a small wood frame structure, all with a single address of 810 Juan Street (Figure 9.1).

Comparison of the scaled field maps for Locus 4 and the 1889 Dakin and 1925 Sanborn maps suggests that Features 44 and 52 correspond to the open north and south sides of the shed-like structure at 810 Juan Street. The location of Features 54 and 57 (privies) corresponds to the location described as "Vegetable Men's Storage" area on the 1925 Sanborn. Whether the two privies and storage area were coterminous is not known, but it is a likely association since it is reported that produce men slept in the open at the corrals.

At least three of the Features (51, 55, and 58) in Locus 4 were under other later Features (47 and 59) and consequently pre-date them. Feature 47 (cement slab) was superimposed on Features 51 and 55, burned structural elements. The fact that Features 51 and 55 were burned suggests one significant reason for their replacement

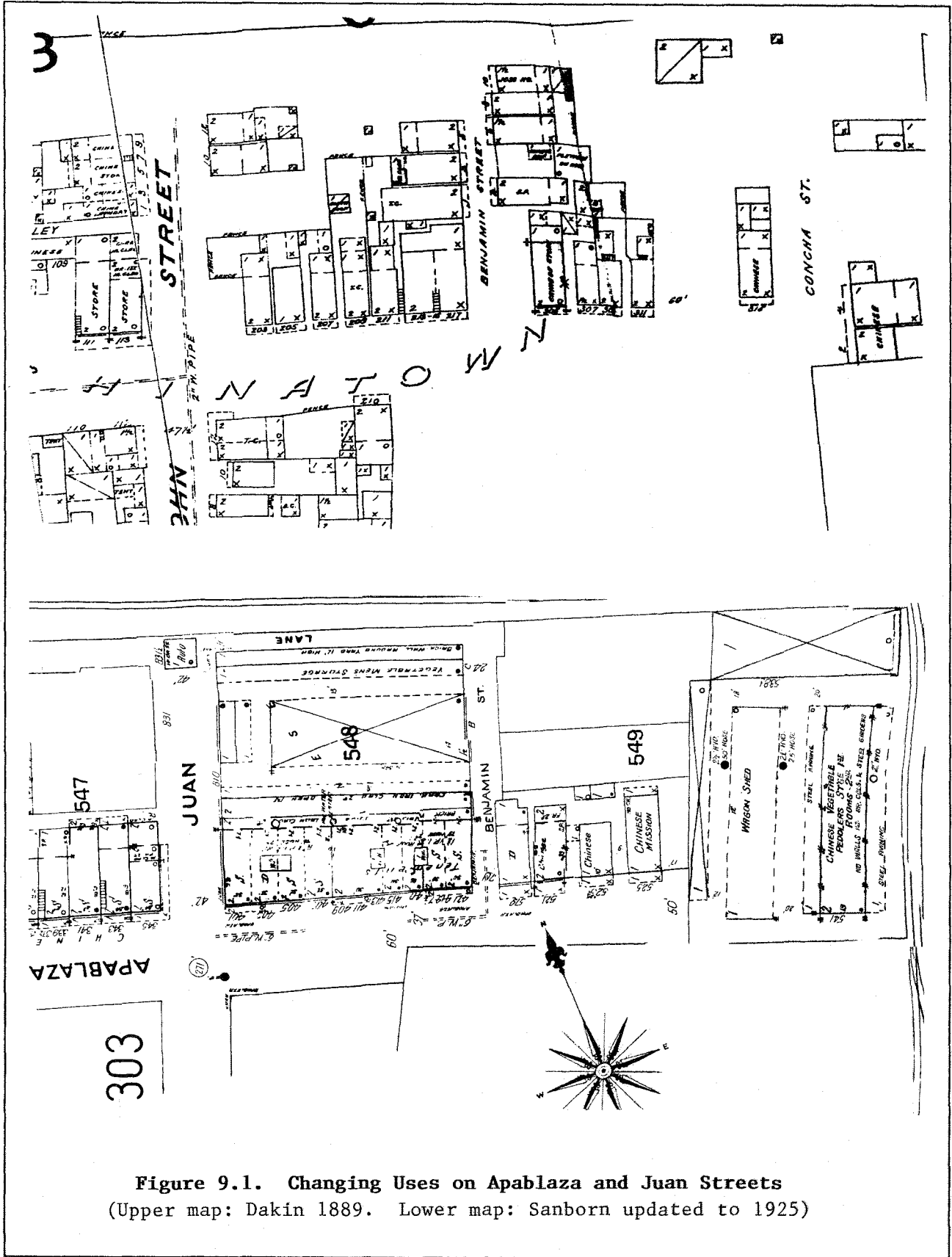


Figure 9.1. Changing Uses on Apablaza and Juan Streets  
 (Upper map: Dakin 1889. Lower map: Sanborn updated to 1925)



**Figure 9.2. Vegetable Peddlers Storage and Rooms**  
(Courtesy, Western History Center, University of Southern California #8921)



by 1925 (Sanborn). Feature 58, a refuse scatter, was found under Feature 59 which was probably a secondary road or "driveway." The Dakin map of 1889 suggests that the parcel was initially utilized for domestic occupation, while the 1925 Sanborn clearly indicates that the area had become a commercial operation related to vegetable distribution. The refuse deposits date from two periods, 1903 to 1911 and 1910 to 1920, reflecting the continuous operation of this parcel in the early 1900s.

The majority of the refuse deposits from all of the loci date from 1900 to 1920 (Table 9.1). This concentration of early 1900s trash deposits is a reflection of the greater density of Chinese who were now living in the new brick buildings that had replaced the wooden hovels of the 1880s. The pervasive tenements of 1900 created housing for those employed in shops or growing and selling vegetables. This latter job market increased from 21 percent in 1900 to 41 percent in 1910. The Dakin map of 1889 and later 1925 Sanborn map depict this change in orientation, with wood frame houses along the east end of Apablaza being replaced with vegetable markets by 1925. In 1933 the large vegetable market at 810 Juan Street (Locus 4) still existed although it was soon to be demolished (*Los Angeles Times*, December 23, 1933).

Dating of the deposition of the features was accomplished by comparing dates and range of dates from four artifact categories: electrical, ceramics, coins, and glass. The present of earlier artifacts is attributed to backfilling of holes, pits, and general cleanup around the structures and is reflective of the overall span of occupation by the Chinese (1880s - 1933). It is certain that additional efforts in areas not investigated will reveal earlier deposits, not contaminated by later intrusive artifacts.

Provenience	Electrical	Ceramics	Coins	Glass	Probable Period of Deposition
Feature 1			1871-1898	1904-1921	1904-1921
Feature 2		1903-1918			1903-1918
Feature 3		1896+		1894-1920	1896-1920
Feature 11		1904+	1901	1894-1915	1904-1915
Feature 12		1890-1906	1890	1884-1890	1906
Feature 15			1861-1909		1861-1909
Feature 16		1931-1954		1905-1915	1905-1915
Feature 18	1901+			1901-1921	1901-1921
Feature 22	1895+			1904-1920	1904-1920
Feature 27				1901-1936	1901-1934

Table 9.1. Temporal Assignment of Features					
Provenience	Electrical	Ceramics	Coins	Glass	Probable Period of Deposition
Feature 29	1894-1911	1905-1931	1876-1905	1907-1925	1907-1925
Feature 30		1890+		1901-1925	1901-1925
Feature 31				1870-1920	1870-1920
Feature 32		1770+		1901-1920	1901-1920
Feature 33				1901-1920	1901-1920
Feature 35			1883+		1883+
Feature 38		1896+		1880-1900	1896-1900
Feature 39		1903-1931		1906-1920	1906-1920
Feature 40		1892-1910		1901-1920	1901-1920
Feature 41		1901-1915		1884-1920	1901-1920
Feature 42		1905-1909	18__-1904	1900-1905	1905-1909
Feature 43	ca 1913			1913-1920	1913-1920
Features 44, 45, 46, and 50	1892+	1883-1889			1892+
Feature 47	1910+			1900-1920	1910-1920
Feature 49		1891+	1912	1906-1920	1912-1920
Features 51 and 55		1880-1900	1912-1920		1912-1920
Feature 53	1903-1911				1903-1911
Feature 54		1875-1900		1897-1920	1897-1920
Feature 56				1887-1908	1887-1908
Feature 57		1883-1889		1890-1920	1890-1920
Feature 58				1906-1908	1906-1908

The co-occurrence of specific types of artifacts is useful for indicating the locations of various activities which would have been conducted in a communal setting rather than in individual households. One example is how opium pipes, opium lamps, Asian coins, and gaming pieces tend to be found in the same deposits, suggesting an origin in a public facility. Table 9.2 illustrates that features in Locus 1 (Features 1-15) and Locus 2 (Features 16-38) have greater quantities of each category, in contrast to Loci 3 and 4. These features were less apt to contain personal items such as jewelry, toys, or other personal possessions. Additional analysis of other artifact groupings could be utilized to identify other patterns of behavior and functional distributions.

Table 9.2. Opium Pipes and Lamps, Gaming Pieces, and Asian Coins

Provenience	Opium Pipes	Opium Lamps	Asian Coins	Gaming Pieces	Total by Row
Analytical Unit 1	34	15	100	34	183
Feature 1	3	1	5	41	50
Feature 2	4	4	14	25	47
Feature 3	3	3	24	35	65
Analytical Unit 2	0	0	38	146	184
Feature 11	5	1	5	18	29
Feature 12	1	1	1	2	5
Feature 16	1	0	0	13	14
Feature 18	1	1	2	14	18
Combined Feature	1	0	16	86	103
Feature 22	0	0	1	71	72
Feature 27	0	2	2	5	9
Feature 29	11	14	17	207	249
Feature 30	0	1	6	99	106
Feature 31	1	0	13	0	14
Feature 32	0	0	11	43	54
Feature 33	0	2	10	16	28
Analytical Unit 3	1	2	15	193	211
Feature 38	0	3	3	6	12
Feature 39	1	4	9	22	36
Feature 40	0	2	0	6	8
Feature 41	1	0	3	18	22
Feature 42	0	0	0	14	14
Feature 43	0	2	0	4	6
Features 44, 45, 46, and 50	1	1	0	4	6
Feature 47	3	0	1	2	6
Feature 48	0	0	0	2	2

Table 9.2. Opium Pipes and Lamps, Gaming Pieces, and Asian Coins					
Provenience	Opium Pipes	Opium Lamps	Asian Coins	Gaming Pieces	Total by Row
Feature 49	4	0	0	4	8
Features 51 and 55	8	2	0	44	54
Feature 52	0	0	0	0	0
Feature 53	0	0	0	0	0
Feature 54	10	1	0	0	11
Feature 56	7	2	1	0	10
Feature 57	8	1	0	1	10
Feature 58	1	0	0	2	3
Feature 59	0	0	0	0	0
A-136	0	0	0	0	0
Emergency Exit 10	0	0	0	0	0
West Entrance	0	0	0	0	0
	110	65	297	1,177	1,649

### Assessment

The earliest years of occupation on the site, such as land use by the vineyardists and the Sisters of Charity, were less well represented in the areas tested, but experience suggests that such deposits are probably present in the vast majority of the UPT block not yet investigated. The historical research has contributed clues to the locations and identity of potentially sensitive areas, but not all were within the impact area. For example, while the ground plan of the Sisters' complex is now known, most of the construction through this corner was accomplished by tunneling; where augering was done, and monitored, in the ramp area, cultural materials of early date were recovered by screening the spoil dirt. Artifacts from the early years are still needed to address questions related to the total span of occupation. Assessment of the potential to illuminate the earliest years through archaeology was somewhat limited by constraints upon the areas which could be tested and the limited nature of the investigation.

However, most of the primary objectives related to assessing the potential for subsurface cultural materials and the depth and integrity of structural remains and features, and recovering significant data from them, have been fulfilled. The probability of earlier privies, trash deposits, structural elements, and



comparable features which might contain assemblages with the desired context is not resolved. One can predict that such resources are present, there would have been many of them in the known years of occupation and, from the depth at which other features were found, that they probably retain their integrity.

It has been dramatically established that the intact remains will be deep. Pictures of the vicinity prior to demolition, and after the import of fill (Figures 9.3 and 9.4), make clear that the cultural horizon has been buried, rather than destroyed by the construction of the 1930s and subsequent improvements. Testing that had been done in the past by others did not penetrate deeply enough to encounter the cultural strata (Padon 1981), and preoccupation with prehistoric sites had perhaps led to the underestimation of the archaeological potential for historical resources (Huey et al. 1981).

The numerous trash deposits may be attributed to several factors. The documents demonstrated the lack of municipal services and that the codes and standards which prevailed elsewhere were not enforced in Chinatown. At the same time, great quantities of foods were being imported in containers which were not recycled, as Euroamerican canning jars would be. Each product would come in another of the stoneware vessels, so there was no need to save them. Rubbish from the produce market and probably, also from households, piled up on the streets (Figure 9.5).

Lacking an institutionalized system of rubbish disposal, many discards would be buried. It is less clear whether the fire-affected artifacts are the result of the fires which swept Chinatown or deliberate burning as reported at 810 Juan Street in the vegetable market (*Los Angeles Times*, December 23, 1933).

The cultural materials recovered have already yielded information about the nature and origin of goods used, consumed, worn, played with, manufactured, sold, and discarded at the site. The analysis suggested that the deposits and structural remains reflect both pre-Chinatown and Chinatown occupations. The outline of some of the various buildings and streets has been established; despite demolition and the subsequent filling, the community settlement pattern is intact under more than 15 feet of fill.

Incorporating all of its elements, the site may be regarded as representative of several different periods and functions, from the early agrarian orientation of the Keller family to the twentieth century Chinese with a variety of domestic and commercial manifestations. The changes in the project area are responses to external conditions which are themselves the patterns of history, and the site reflects these changes.



**Figure 9.3. Project Area in 1930 (Aliso Street in foreground)**  
(Courtesy Western History Center, University of Southern California #14531)



**Figure 9.4. Project Area after Demolition and Filling**

(Courtesy Western History Center, University of California, no number, no date)



Figure 9.5. Trash in the Streets

The assemblage provides raw data, artifacts, and ecofacts that can be used for continuing research and reference. The very much smaller Chinese collection from Ventura excavated in 1974-1975 is still being utilized and cited 19 years later. Avenues of continuing inquiry include more comprehensive study of the faunal materials; identification of all the fish bone; more translations of Chinese embossments and calligraphy to yield the places of manufacture (reflective of trade and import patterns) and insight into the symbolism; census research; customs records; technical elemental studies of pastes and glazes of the ceramics; more information about some of the Los Angeles businesses which were patronized; comparisons to collections from El Pueblo and CA-LAN-7, still unpublished; and comparisons to other Chinatown sites.

What is different and additive from Los Angeles Chinatown is that the community was large enough to sustain itself through the periods of restricted immigration, until new immigrants arrived in the twentieth century. In Ventura, San Diego, the Arizona settlements in Prescott and Tucson, and others, the initial group was small, and around the turn of the century, faded away either through aging or dispersal to seek employment elsewhere. Other kinds of Chinese sites, such as mining or railroad construction camps, were temporary by their nature and skewed toward a male population. In Los Angeles, population growth was sustained not only by the presence of family units, but in terms of both numbers



and diversity, expanded by the arrival of professionals and merchants allowed to enter even after the Exclusion Act of 1882.

The urban Chinatown is distinctly different from labor camps or rural agricultural sites, and must meet different conditions to survive. One writer has concluded that the host city must have a population of at least 50,000, and be in an area with a diversified economy rather than a single industry (Takai 1989:239). While the smaller Chinatowns declined as a result of the immigration laws and shortage of women, Los Angeles supported a flow of new arrivals. Further, as employment opportunities in railroad construction, agriculture, and mining declined elsewhere, there were niches in the urban setting for the Chinese either to work for wages or to operate small, low-capital enterprises of their own.

The usual approaches to measuring acculturation by ratios of Chinese to Euroamerican artifacts or foods may be less relevant to this collection precisely because of the flow of population through Chinatown. The underlying assumption has been that a gradual progression toward social integration would be reflected by fewer imported goods in the later years. In Los Angeles, the availability of goods could not be an explanation for choices, since Chinatown was adjacent to the growing commercial center and products of all kinds could be acquired within a matter of city blocks. The apparently steady ratios of American vs. imported foods and other items of tablewares, clothing, health care products, and recreation apparent in this collection may instead reflect the same level of preference, but by different waves of immigrants. As the more successful of the people tended to move away and disperse into the greater community, they were replaced by new arrivals who were likely to seek out and consume the traditional commodities with which they were familiar. The long hours required to run a laundry or restaurant would also contribute to the social isolation of the proprietor. In other words, the proportions of homeland goods and foods might be the same, but the people who used them were different. This would be particularly true in the twentieth century, and is very dramatic in the many Asian subpopulations in and around Chinatown today. An alternative for the continuing cohesion in the twentieth century is an attempt at cultural survival by perpetuating traditional behaviors as a response to external hostility. These postulates can be tested by further analysis of the data.

What is comparable to other Chinatowns is architecture and the use of space. The community here, as elsewhere, first reoccupied existing structures: in Los Angeles, in the old adobes around the Plaza. As elsewhere, it was displaced from its first location by popular pressure, fear and suspicion, and the trend of commercial development. It was shifted to low value property which nobody else wanted, subject to flooding and adjacent to the railroad, gas plant, and industrial uses such as the lumber and brick yards. With no room for expansion, the settlement pattern recreated life

in urban China by subdividing the blocks with alleys, utilization of balconies to maximize domestic space, building to the front property lines, and contiguous structures.

The regularities further include high-pitched, front-gable roofs on wood frame buildings, long but narrow floor plans so that more structures would have frontage on the street, party walls which obscured property lines or ownership, and the intermingling of shops, residences, and the joss houses. In Los Angeles, where lumber was scarce, brick buildings replaced the earlier adobes and wood frame buildings, but the pattern was the same and reflected the great population density.

The collection also has potential to contribute to studies of the early commercial, industrial, professional, and settlement patterns of downtown Los Angeles - a subject which has not received much attention either historically or archaeologically. In addition to the pharmacies represented by glass bottles, the early breweries, soda works, and other bottlers are well represented. Well known names such as Maier and Zobelein are present, but less familiar producers such as the F. A. Heim Brewery, Crystal Bottling Company, Cascade/Peverly Brothers, Star and Lagomarsino wine companies, and soda producers such as Ramona, Los Angeles, Stoll, Excelsior, Grape Deli, and Pacific are even more numerous. These enterprises, the brickyards, dairies, button makers, and other local manufacturers represented by cultural materials are all appropriate subjects for research, although beyond the scope of this study.

It must be emphasized that this investigation was limited in space to the construction areas of what must be considered a very much larger site complex. It was constrained in time by the exigencies of the construction schedule. And in method, the very nature of general problems in urban archaeology and special circumstances related to the construction of Metro Rail through an operating railroad station prompted some departures from the ideal orderly process of survey, testing, research design, and mitigation of impacts. Given existing conditions, no original surface was visible for survey. No testing was possible; all subsurface field work had to await opening of a particular area and the removal of overburden by the construction contractor. The history and digitized maps were developed in advance, and proved adequate for predicting sensitivity. The research framework in place had underestimated the integrity and density of the cultural materials, so that specific questions about the behavioral contexts had not been developed. Such techniques as stratified random sampling were simply not possible. The area was not large enough to divide into components such as residential, commercial, or industrial; such uses tend to be mixed in the Chinese setting; and changes in the alignment or construction plans made the field work responsive to impacts or emergencies rather than to theoretical design.

The opportunity to interpret units of refuse deposition by correlating the mapped features with historical maps of known buildings, photographs which show the house or shop numbers, and in some instances, even the names of the occupants, is very rare. This kind of ground-truthing will permit interpretive analyses far beyond the inventory or dimensions of artifacts. While history provides an outline of events, and the artifacts illustrate the physical remains of existence, it is only this kind of synthetic effort which can lead to an understanding of the life which went on behind the doors of Chinatown - doors and walls which were both real and cultural.

The archaeological investigation has confirmed the presence and integrity of subsurface cultural resources at a site which had been listed on the NRHP for its historical and architectural values. In summary, the resource has already yielded valuable information and defined directions for pursuing important scientific research, and the integrity of the site implies that additional features, structural remains, and cultural deposits may be present anywhere on the UPT block. The site integrity demonstrates once again that in the urban setting, subsurface cultural remains are not necessarily destroyed simply because something later has been built above them. The historical research has provided new information about the specific locations of earlier occupations, e.g., the Keller house and winery, the Sisters of Charity complex, other domestic and commercial establishments, and other activity or structural areas which may also yield archaeological remains. The excavation data are not redundant of the historical documentation, but additive and essential in addressing research problems beyond the reach of either written or oral sources.

In addition to the continuing research value of a very large collection, the investigation has contributed in many other ways. The construction personnel have been enlightened about both the value of the resources and the legal mandates for their protection. It has been additive to studies in settlement pattern, refuse disposal, changes in the urban landscape, use of historical documents, greater appreciation of the potential of historical archaeology, emphasis on the survivability of buried deposits, and benefits to the public through interpretation, displays, tours, publications, lectures, media exposure, and ultimately, the continuing research into materials derived from this project.





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function - at a particular time and place was to serve as circulating currency (e.g., Kleeb 1976; Hattori 1979). In fact, in the case of the coins under consideration, it is unlikely that they ever were used as money in the New World. Each coin was incorporated into a distinct behavioral system from which it may have been laterally cycled (transferred from one set of activities into another) many times in the course of its use-life. In the New World any given traditional Asian coin was part of one of five behavioral systems. In each of these systems it had a value far greater than its monetary exchange value of less than one-tenth of a United States cent (Akin 1990).

The first behavioral system consisted of the trade represented by coins recovered from aboriginal and early trading post sites from the period before the arrival of Asian immigrants in North America. During the eighteenth and nineteenth centuries the fur trade between China and ports along the coast of North America brought Chinese wen for exchange with aboriginal peoples. The wen is an attractive cast brass coin with a large square hole in it, making it especially suitable for sewing onto clothing and basketry. Wen have been recovered from aboriginal and trading post sites in Alaska, British Columbia, Washington, Oregon, and California (e.g., Akin 1988, Keddie 1978, Beals 1980).

This period of exchange between Asia and the Native American population of the West Coast of North America began by 1770, and possibly somewhat earlier in some areas, and was largely ended by 1850, though some aboriginal uses of coins continued into the twentieth century.

The second behavioral system involves activities generated by the traditional beliefs of the Chinese, and other Asian, immigrants. Coins play an important role as talismans, offerings, and symbols in Chinese folk religion (Huang 1981). Examples include small groups of coins tied with red thread. Coins were used as good luck pieces that could be attached to key chains, instruments, or other items of personal importance. The coins that make up "coin swords," groups of coins tied onto a central iron rod in the shape of a sword, were used in some Buddhist rituals and as offerings and gifts for special occasions (Armentrout-Ma 1984:3). Larger and earlier coins, such as the coins of Kang Xi, have long been preferred for most talismanic and religious uses, which is why they are often recovered in sites like the Los Angeles Chinatown.

The third behavioral system consists of gaming activities. The game most closely associated with both Chinese wen and Vietnamese dong was fan tan. Fan tan was very popular with both Chinese immigrants and their work associates and neighbors. Games were organized primarily in special shops in Chinese neighborhoods, but work crews often organized games in temporary work camps associated with their migratory labor. Coins were used

in these games solely as game pieces and markers, never as currency. They were imported for this purpose by game operators (Culin 1891:5). Smaller, thicker coins of fairly uniform size seem to have been preferred in gambling, so most are from the Ch'ien Lung reign (1736-1795) and its immediate successors (Ping Lee, personal communication 1989). During the 1880s, zinc Vietnamese coins came into circulation in Kwangtung, and they were very soon put to use in the United States in the game of *fan tan* in which different coins represented different game functions (Culin 1891:6).

The fourth behavioral system is part of the practice of Chinese folk medicine. The two main traditional medical practices requiring coins are coin rubbing and the preparation of teas. Coin rubbing, rubbing different parts of the body with the edge of a coin, is a treatment for "hot" diseases and is related to the more familiar cupping and acupuncture (Walterspiel and Roberts 1987; Roberts 1988). Chinese medical treatment also includes the preparation of a variety of teas that incorporate coins as ingredients. The tea "prescriptions" required coins of different metallic composition, and therefore different coins, for the treatment of different ailments (Ching 1987).

Coins used as decorations were part of the fifth behavioral system. Coins have been used as buttons, as decorations on clothing, baskets, furniture, and for some other decorative uses. Most such coins seem to have been affixed in China to items intended for sale to non-Chinese. Some items with coins as decorations were so popular that they have been used in almost every house of every older town in the western United States, sewing baskets being the prime example. Additional holes may have been drilled into the coins to facilitate attaching them to other objects.

#### How Coins May Have been Used in the Los Angeles Chinatown

The zinc Vietnamese coins, which are found throughout the site, have not been reported as having decorative or talismanic uses in the American West. Their uses appear to have been limited to gambling and medicine, and contemporary reports of their importation mention only their large-scale use in gambling (e.g., Culin 1891). It is reasonable to conclude that while a few of the Vietnamese coins may have been used to prepare medicines requiring zinc, the overwhelming majority of them were used in the game of *fan tan*, and possibly in other gambling activities that used coins, such as *mah jong* and dominos. Like the other Asian coins used in gambling, they functioned as counters and game pieces, rather than as currency. Their distribution within the site would seem to indicate that gambling at Los Angeles Chinatown was quite as common as contemporary Euroamerican reports indicated. The Vietnamese coins were found almost everywhere any coins were

found, and in many places where no other coins were recovered (Table 3).

The uses of the Chinese coins would have been more varied, although many of them must also have been used in gambling. The Japanese coin and the brass Vietnamese coin of the Canh Hung reign should be considered together with the Chinese coins, as they would have circulated at the same value in Guangdong and could not have been distinguished from other brass coins by most Chinese immigrants. Larger and earlier coins were favored for many religious and talismanic purposes, and it is likely that the wen from the Kang Xi reign served these purposes at some time during their American travels.

One Chinese coin with the reign name of "Shun Zhi" (1644-1661) had four evenly spaced holes piercing it, and may have been used for decorative or talismanic purposes, or some combination of the two. When wen were strung together for any reason, the strings were usually passed through the center hole. If one of these coins was actually pierced, it probably was attached to something made of cloth or wood.

The post-1889 struck Guangdong wen were used in the same ways as other brass Chinese coins, especially in gambling. They were not highly regarded as talismans in the same way that a Kang Xi coin would have been, but they saw some talismanic use nonetheless, as their shiny, even surfaces were very attractive. Often they were used to decorate coin swords. While the Guangdong cent may have been a simple souvenir, it should be noted that it is just the right size for coin-rubbing, and has the required smooth edges which were lacking on American coins of similar size.

#### **USING THE COINS FOR SITE DATING**

The discussion of how coins were used to provide supporting evidence for the dating of this site, or portions of this site, will follow an introductory review of the principle of dating through the use of assemblage analysis.

##### Using Coin Assemblages to Date Sites

Generally speaking, coins are among the most useful tools available for dating sites of the historical period. Often even the most transitory of occupation sites can be fairly securely dated to within a narrow range on the basis of only a few coins. However, the most common Asian coins found in archaeological sites in North America, the Chinese wen and the Vietnamese dong, pose special problems for use in site dating.

In addition to the fact that the coins do not carry a year date, the ability to use them to date sites is complicated by the fact that in China they routinely stayed in circulation as money

for centuries. Coins that had been buried and lost for centuries could be found and used at the local marketplace. This, of course, makes them even more difficult to use for dating purposes.

However, when recovered coins can be identified as part of an assemblage with a distinctive profile, we can decipher not only the behavior that was associated with the coins, but other characteristics of that behavioral system, such as period of importation. Viewing the numismatic material as parts of behavioral systems makes cross-cultural dating methods applicable in situations not previously recognized (Akin 1990).

An example of how this works can be provided by the Riverside Chinatown site. In the summer of 1985 some sections of the old Riverside Chinatown were excavated, and 239 Asian coins were recovered from the site. Most were recovered from areas that could be dated to the period from January 1886 until July 1893 by combined stratigraphy and historical documentation. The composition of the assemblage was, when first identified, surprising, as it turned out to be more than half Vietnamese. Vietnamese coins dating between 1802 and 1883 were found throughout the site (Akin and Akin 1987).

The residents of the Riverside Chinatown were part of the large agricultural workforce employed before and shortly after the 1893 Exclusion Acts. Almost all of these laborers came from Guangdong Province which adjoins Vietnam. The Riverside Chinatown site of 1886 was first occupied at about the same time that the Vietnamese coins were becoming very common in Guangdong. By six years later, Vietnamese coins had become ubiquitous at Riverside Chinatown, which argues for very close ties of trade between Riverside Chinatown and the ports of Guangdong. But the extensive survey, conducted by the California Asian Numismatic Survey, of coins from California Chinese sites with known occupations before the 1880s, revealed no zinc Vietnamese coins in the sites predating the 1880s.

The reason why California Chinese sites before the 1880s had no zinc Vietnamese coins is simply that Vietnamese coins, at that time, circulated only in Vietnam, and there was no commerce to speak of between Vietnam and California. However, during the 1870s and 1880s, Chinese bankers became increasingly active in Vietnam. As the French colonial officials minted modern colonial coins during the 1880s for circulation in Vietnam, Chinese bankers were buying up the zinc *dong* (which look like the Chinese *wen*) and transporting the zinc *dong* to Guangdong, where they placed them into circulation. There was a shortage of small change in Guangdong at the time, so the zinc *dong* were tolerated in circulation. In 1889 the Chinese government mint in Canton began production of high-quality machine-struck brass *wen*, and within a few years the market for the Vietnamese coins disappeared. So it was only for a short, tightly defined period that large quantities



of zinc Vietnamese *dong* circulated in Guangdong Province, center of trade and emigration to California.

The implications are clear. If Chinese *wen* and Vietnamese *dong* are found mixed together in an assemblage from a California archaeological site, there is fair certainty that they were imported between about 1885 and the late 1890s (Akin 1990).

#### Dating the Los Angeles Chinatown Site

Coins of China, Vietnam, and Japan all remained in circulation for long periods. Some Chinese coins were found in circulation, and were in use as currency, during the 1870s that had been minted as much as 2100 years before (Schjoth 1965:vi). For this reason the information that must be used for site dating purposes has to be the dates when the coins were imported into the area rather than the actual ages of the coins themselves. The ratio of Vietnamese to Chinese coins at this site, almost 9:1, would indicate that a large number of all the Asian coins recovered were imported into the Los Angeles area from Guangdong between 1885 and the late 1890s as part of the general circulating currency of that period. Therefore the coins were probably in use, and the site occupied, no earlier than 1885. The numismatic evidence thus supports conclusions derived from the historical research and artifact analysis.

As the Vietnamese *dong* were less favored and fell out of use faster than the *wen*, any well defined area that had a significantly higher ratio of *wen* to *dong* present was probably more recent. The coins recovered from Features 17, 29, and 39, had such a relatively higher ratio. This suggests that the portions of the site associated with those features were the youngest of the area excavated. Further support for a later date for these features comes from the presence, in Feature 17, of struck coins from the Guangdong provincial mint, the most recent of the Asian coins at the site.

#### **CONCLUSION**

The assemblage of coins recovered from the Los Angeles Chinatown has provided important information regarding activities enjoyed by the occupants. In addition, by comparing the composition of the coins in circulation in Guangdong to the composition of the assemblage recovered from this site, numismatic support for the relative dating of various portions of the Los Angeles Chinatown has been established. As the number of sites grows where a detailed analysis of the Asian coins is produced, the understanding of the communities which used them will be increase.

TABLE 1: Vietnamese Coins from CA-LAN-1575H

REIGN	DATES	NUMBER IN SITE
Cahn Hung	1740-1787	1
Chieu Thong	1787-1789	0
no data	1790-1802	0
Gia Long	1802-1820	54
Minh Mang	1820-1841	121
Thieu Tri	1841-1847	3
Tu Duc	1848-1883	93
unreadable	-	8

TABLE 2: Chinese Coins from CA-LAN-1575H

REIGN Pinyin* Rendering	Traditional Rendering	DATES	NUMBER IN SITE
Wan Li	Wan Li	1573-1619	1
Tai Chang	-	1620	0
Tien Chi	-	1621-1627	0
Chung Chen	-	1628-1644	0
Shun Zhi	Shun Chih	1644-1661	1
Kang Xi	Kang Hsi	1662-1722	7
Yong Zhen	Yung Cheng	1723-1735	0
Quian Long	Chien Lung	1736-1796	15
Jia Qing	Chia Ch'ung	1796-1820	4
Dao Guang	Tao Kuang	1821-1850	2
Xian Feng	Hsien Feng	1851-1862	0
Tong Zhi	T'ung Chih	1862-1874	0
Guang Xu	Kuang Hsu	1875-1908	8
Xuan Tong	Hsuan T'ung	1908-1911	0
unreadable	-	-	3

\*Pinyin is the official romanized alphabet of the People's Republic of China. Although its use within is limited, it is the standard way in which the actual sounds of Putonghua (Mandarin) Chinese are communicated to foreigners. Diacritical marks have been omitted.

TABLE 3: Distribution of the Coins by Feature

FEATURE	COUNTRY OF ORIGIN			TOTAL COINS
	Vietnam	China	Japan	
Feature 1	3	2	0	5
Feature 2	13	1	0	14
Feature 3	24	0	0	24
Feature 4	14	0	0	14
Feature 6	1	0	0	1
Feature 7	1	0	0	1
Feature 10	20	2	0	22
Feature 11	5	0	0	5
Feature 12	1	0	0	1
Feature 17	5	4	0	9
Feature 18	2	0	0	2
Feature 20	6	1	0	7
Feature 22	1	0	0	1
Feature 23	9	0	0	9
Feature 24	12	1	0	13
Feature 27	2	0	0	2
Feature 29	11	5	1	17
Feature 30	4	2	0	6
Feature 31	12	1	0	13
Feature 32	11	0	0	11
Feature 33B	10	0	0	10
Feature 34	0	1	0	1
Feature 35	1	0	0	1
Feature 38	3	0	0	3
Feature 39	4	5	0	9
Feature 41	0	1	0	1
Feature 41A	2	0	0	2
Feature 49	0	1	0	1
Feature 56	1	0	0	1
Track Area	58	0	0	58
panel 46E	1	1	0	2
Trench N23	27	3	0	30
Surface (Phase 2)	0	1	0	1

(References for this paper are located in the main bibliography, which begins on page 261).



### APPENDIX III

#### ANALYSIS OF HUMAN SKELETAL REMAINS UNCOVERED AT METRO RAIL PROJECT A-135 (89-52954, Specimen 26)

Judy Myers Suchey, Ph.D.

On July 25, 1989, human skeletal remains were uncovered during construction at the Union Station. The law requires the Coroner to determine not only whether skeletal remains are 1) recent and of forensic interest but also, 2) whether the remains are Native American (Senate Bill No. 297 and Senate Bill No. 447). Being the forensic anthropologist for the Office of the Chief Medical Examiner-Coroner, County of Los Angeles, this is my responsibility. Generally, I can make this determination using information from:

- 1) morphological aspects of the skeleton (face, sexual dimorphism)
- 2) burial position
- 3) associated artifacts
- 4) stratigraphic location of the burial.

When archaeologists are associated with the finding of the remains, I utilize their assistance in assessing items 2, 3, and 4 (see above).

As described in the report of monitoring archaeologist Gregg V. Richie, Greenwood and Associates, the finding of the human skeletal remains resulted in destruction of much of the data. The original construction worker removed almost the entire skeleton prior to reporting it. Only small fragments of bone were left in situ (document slides 1, 2, 3). The skeletal remains seen in document slides 4-28 were all removed by the construction worker. Further destruction of the skeletal remains occurred by improper action of the AMTRAK police. As reported by Richie:

Amtrak police Sergeants Breeden and Sanchez and Officer Johnson accompanied Greg Martinez back to the baggage handling area after he had made his call to the Coroner's Office. They immediately began their own investigation. Sgt. Sanchez identified the bones as being that of an ape and believed they were not important. He began photographing the remains from various angles, as well as the trench, during which, he carelessly stepped into the middle of the bones, crushing one of the large cranium fragments. Fearing the bones might be damaged even more from laying out in the open, Jeff Frye placed an orange and white sawhorse barrier over them. Sgt. Sanchez was asked to leave the site after he almost stepped on the bones on two more occasions while taking photos.

I arrived at the site on July 26, 1989, accompanied by Coroner Investigator Carrier. Viewing the condition of the skeletal remains (texture and amount of mineralization) and the location of



the burial, I assessed the remains to be of antiquity and not a recent homicide. The next step of the Coroner's investigation is to provide information whether the remains are Native American. With the help of Gregg Richie, I excavated the bone fragments which remained in situ (document slides 1-3). We carefully labeled each fragment so that the bones could be identified as to side (right or left) using comparative laboratory material. This would enable us to reconstruct the burial position. The bone fragments were identified as follows:

1. right radius and ulna midshaft
2. left radius and ulna midshaft
3. left capitate, left navicular
4. left lunate, left distal tibia
5. right calcaneus
6. phalanges (siding not attempted)
7. tarsal bone (siding not attempted)
8. left hamate.

Using this information and the sketch made by Gregg Richie (monitor report of July 27, 1989), it is seen that the burial was tightly flexed. Only item 8 (left hamate) appears out of place and this may be the result of rodent activity or other disturbance.

From July 27-August 9, 1989, attempts were made at reconstructing the skeletal fragments in order to assess the morphological features. Mrs. Melissa Culp assisted with this process, spending many hours sorting pieces searching for fits between the many fragments. The shape of the cranium (document slide 4) could be seen as being long headed. It was impossible to reconstruct the face or the pelvis. Both areas are needed in order to assess the ethnicity. The pelvis is necessary for sex determination in order to assess the robusticity of the individual.

Given these circumstances, the burial could be either Chinese or Native American Indian. The excavation is in Chinatown and the artifacts recovered at the site are of Chinese origin. No Native American artifacts have been found to date at the Metro Rail site. Examination of the teeth indicates an individual of Mongoloid descent. The central incisors show marked shovelling (document slides 5-8). Both Chinese and Native Americans would be expected to exhibit this trait. Distinguishing between Chinese and Native American would rest on three areas:

1. assessment of facial morphology (impossible due to the destruction of the skeletal data prior to the arrival of the Coroner).
2. assessment of body size (impossible due to the destruction of the skeletal data prior to the arrival of the Coroner). In order to assess body size the sex must be known. The destruction of the pelvis prevents the sex determination of

the skeleton. The right humerus can be estimated as being 29.8 cm in length. If female, she would be about 5' 2" (mean stature by Trotter and Gleser White female formula; no formula for female Mongoloid). If male, he would be about 5' 4" (mean stature by Trotter and Gleser Male Mongoloid formula). This skeleton could be a Native American female or a Chinese male. The cranial morphology (brow ridges) are used in this determination. The skeleton is unlikely to be a Native American male or a Chinese female. Knowing the sex of the skeleton would be of extreme value in the determination of the ethnicity.

3. assessment of tooth wear (attrition pattern), document slides 9-14.

For the above reasons (destruction of the evidence of the facial morphology and the body size assessment), attention was then focused on an analysis of dental attrition. Few Chinese individuals have been excavated in California so there is a lack of comparative data on Chinese attrition patterns. I know of no published literature. At this point, I contacted Professor Rodger Heglar who personally examined historic Chinese skeletal remains in the San Francisco area. I made an appointment to see him Aug. 24, 1989 at the San Diego Museum of Man (he is now residing in the La Jolla area). According to Heglar, the dental wear is not similar to the Chinese he had examined. The Chinese he examined did not show asymmetric crown wear of the molars. Heglar states that the Metro Rail skeleton also shows considerable more wear than he has experienced (Rodger Heglar, personal communication 1989). At this time the Metro skeleton was also examined by Charles F. Merbs, Professor of Anthropology at Arizona State University and Rose Tyson, Curator of Physical Anthropology at the San Diego Museum of Man. Merbs commented that the molar wear is typical of prehistoric agricultural groups (Charles Merbs, personal communication 1989). Tyson commented that the cranial shape (longheaded) would point to American Indian rather than Chinese (Rose Tyson, personal communication 1989).

#### CONCLUSION

Having assessed the available evidence, and having contacted noted authorities who have either worked with historic Chinese (Heglar) or have examined many California Native Americans (Merbs and Tyson), a determination of ethnicity still cannot be made. The archaeological context is Chinese; no Native American artifacts have been found. The only available avenue for morphological assessment is dental attrition. That doesn't match the observation Heglar made in San Francisco but comparative data from the Los Angeles area are lacking. If the wear is "typical of agriculturalists" (Merbs), why should we see it in southern California where hunting and gathering was the subsistence pattern.

A radiocarbon date was obtained in order that the Coroner could comply with Senate Bill No. 297 (determination if the remains are Native American). A proximal femur fragment (document slide 17) was provided which had been kept in tinfoil to avoid contamination. AMTRAK paid for the determination, since the actions of Sgt. Sanchez, even after being warned several times by the archaeologists, resulted in destruction of the key evidence of the cranium and face.

The Radiocarbon Laboratory, University of California, Riverside, made its determination on the total acid insoluble fraction of bone, after pretreatment to remove the carbonate portion which often includes contaminating diagenetic carbonates. After normalizing, the radiocarbon concentration could not be distinguished statistically from the modern reference standard (UCR--2455). In other words, the individual did not live within the last 40 years, but could have lived at any time between A.D. 1650 and A.D. 1950. Given the variations in atmospheric radiocarbon activity over the last 300 years, the age could not be determined more closely.

End Note: All documentation, slides, and reports are on file, Office of the Chief Medical Examiner-Coroner, Los Angeles.

## APPENDIX IV

### ANALYSIS OF THE FAUNAL REMAINS

by  
Zooarchaeology Laboratory, Institute of Archaeology, UCLA

This report concentrates on a sample of the faunal remains excavated from the UPT Project (Chinatown, Los Angeles). Inferences can be made about the diet of the former inhabitants of the site and are evidenced from remains of both domestic and wild fauna. Faunal remains from three faunal assemblages representing three separate features are compared to infer changes in the diet over time and to detect differences in the use of animals in the represented areas of the site.

#### THEORETICAL QUESTIONS

The major question concerning the faunal remains is: Do the faunal remains reflect the continuance of Chinese dietary traditions, or do they evidence major dietary changes reflecting the adoption of traits and patterns of the surrounding Los Angeles population? Currently, we do not know whether these remains are from domestic residences or from commercial establishments, or how the features are chronologically related. Information derived from this analysis together with other recovered artifacts and ecofacts will be used to answer these questions.

#### HISTORICAL OVERVIEW

Descriptions of the historical background, and the excavation and recovery methods, are covered elsewhere. We know that this part of Los Angeles Chinatown existed from about 1880 to 1934; the three features which constitute the basis for this report are currently assumed to be part of the early phase: 1880 to A.D. 1895.

#### METHODOLOGY

The Zooarchaeology Laboratory of the Institute of Archaeology at UCLA received the well-labeled excavated bone from Greenwood and Associates. The remains had been recovered from the quarter-inch screening of the excavated matrices. The bones were identified to the highest taxon possible by qualified zooarchaeologists through the use of the Laboratory's comparative collection.

The bone was in good condition; it was non-friable and had been washed for identification. The bone was highly fragmented; the average weight of individual fragments was 1.5 grams. The bone was received in 35 provenience bags to be combined into three analytical units: Features 2, 2B, and 3. Initial sorting had

separated some of the bird and mammal from turtle, cuttlefish, and shell; 60 percent of the bone fragments was unsorted.

The fish bone had been removed previously from the bone assemblage for a separate analysis. The shell analysis represents only a small sample of all shell recovered.

Careful and close examination of each bone fragment with 10x hand lenses determined the use of butchering implements; modifications were classified as to cuts by cleaver, cuts by knife, or to edges sawed by hand or machine. The computer program "dBASE III PLUS" was used to catalog, sort, and tabulate the identification data.

## RESULTS

The analysis of the UPT bone assemblage includes an annotated species list followed by 15 tables which compare the faunal contents of the three features, and seven figures to illustrate the recovery of anatomical parts. Six appendices are attached. The analysis is accompanied by two floppy disks containing the DBASE III files.

### TABLES AND APPENDICES:

- TABLE 1: COMPARISON OF FEATURE TOTALS
  - Table 2: SPECIES OF THE TOTAL UPT ASSEMBLAGE
  - TABLE 3: SPECIES OF FEATURE 2
  - TABLE 4: SPECIES OF FEATURE 2B
  - TABLE 5: SPECIES OF FEATURE 3
  - TABLE 6: UNIDENTIFIED BONE, ALL FEATURES
  - TABLE 7: UNIDENTIFIED BONE, FEATURE 2
  - TABLE 8: UNIDENTIFIED BONE, FEATURE 2B
  - TABLE 9: UNIDENTIFIED BONE, FEATURE 3
  - TABLE 10: MODIFIED BONE, ALL FEATURES
  - TABLE 11: MODIFIED BONE, FEATURE 2
  - TABLE 12: MODIFIED BONE, FEATURE 2B
  - TABLE 13: MODIFIED BONE, FEATURE 3
  - TABLE 14: BURNED BONE
  - TABLE 15: PERCENTAGES OF MODIFIED BONE FOR EACH FEATURE
- 
- APPENDIX 1: DBASE III PLUS Printout of individual fragment identification, Feature 2
  - APPENDIX 2: DBASE III PLUS Printout of individual fragment identification, Feature 2B
  - APPENDIX 3: dBASE III PLUS Printout of individual fragment identification, Feature 3.
  - APPENDIX 4: dBASE III PLUS Printout of modified fragments, all features.
  - APPENDIX 5: dBASE III PLUS Printout of unidentified fragments by feature and class



APPENDIX 6:- dBASE III PLUS Printout of UPT Invertebrates  
and "Shell analysis for UPT Site" by Mimi Horner

**FIGURES:**

- Figure 1: Distribution of the anatomical parts of the pig.
- Figure 2: Distribution of the anatomical parts of the cow.
- Figure 3: Distribution of the anatomical parts of the ground squirrel.
- Figure 4: Distribution of the anatomical parts of the cat.
- Figure 5: Distribution of the anatomical parts of the chicken.
- Figure 6: Distribution of the anatomical parts of the turkey.
- Figure 7: Distribution of the anatomical parts of the duck.

Table 1. Comparison of Feature Totals: Percentages of Features, Weight, Fragments, Identified Bones, and MNI										
F#	#SPC	#GRAMS	%GRAMS	#FRAGS	%FRAGS	NISP	%IDENT	#UNID	MNI	%MNI
2	14	1014.1	14.56	937	20.80	612	65.31	325	46	23.12
2B	19	3734.8	53.63	2149	47.69	1098	51.09	1051	70	35.18
3	18	2215.2	31.81	1420	31.51	873	61.48	547	83	41.71
TOTAL		6,964.10	100.00	4,506.00	100.00	2,583.00	177.88	1,923.00	199.00	100.01

F# = FEATURE NUMBER  
 #SPC = NUMBER OF DIFFERENT SPECIES REPRESENTED IN THE FEATURE  
 #GRAMS = WEIGHT OF RECOVERED BONES  
 #FRAGS = NUMBER OF BONE FRAGMENTS  
 NISP = NUMBER OF IDENTIFIED SPECIMENS (BONES AND BONE FRAGMENTS)  
 %IDENT = % OF NISP FOR EACH FEATURE: TOTAL = AVERAGE FOR ALL FEATURES  
 #UNID = NUMBER OF UNIDENTIFIED BONE FRAGMENTS  
 MNI = MINIMUM NUMBER OF INDIVIDUALS

**FAUNA OF LOS ANGELES CHINATOWN**

The species used by the occupants of the represented Chinatown features were predominantly domesticated animals and birds, with minimal use of local wild fauna such as the California ground squirrel, pond turtles, and rabbits. The fauna of Los Angeles Chinatown are listed in the order of the bones most frequently recovered for the combined features. Comments about the individual fauna follow the list.

**MAMMALS**

- Pig (Sus scrofa) NISP:958
- Cow (Bos taurus) NISP:78
- Squirrel (Spermophilus beecheyi) NISP:45
- Cat (Felis domesticus) NISP:38
- Gopher (Thomomys bottae) NISP:4
- Rabbit or Hare (Leporidae) NISP:2
- Rat (Rattus norvegicus) NISP:2

**BIRDS**

- Chicken (Gallus gallus) NISP:958
- Duck (Anas sp.) NISP:95
- Turkey (Meleagris gallopavo) NISP:92

Goose (Chen sp.) NISP:21  
Pheasant (Phasianus sp.) NISP:5

#### REPTILES

Pond turtle (Clemmys marmorata) NISP:99  
Turtle (Chelonia) NISP:7  
Pond Turtle Family (Emydidae) NISP:6  
Snake (Colubridae) NISP:1

#### INVERTEBRATES

Cuttlefish (Sepia sp.) NISP:119  
Crab (Cancer sp.) NISP:18  
Littleneck Clam (Protothaca staminea) NISP:9  
Black Abalone (Haliotis cracherodii) NISP:8  
California Lucine (Epilucina californica) NISP:5  
Pacific Oyster (Crassostrea gigas) NISP:4  
Unidentified Clam (Pelecypoda) NISP:3  
Wavy Chione (Chione undatella) NISP:2  
Pismo Clam (Tivela stultorum) NISP:2  
California Chione (Chione californiensis) NISP:1  
Cockle (Chione sp.) NISP:1

#### PIG (Sus scrofa)

As it was in China, pork was the main meat eaten by the occupants of Los Angeles Chinatown as evidenced by the bones recovered in the sample features. Examination of epiphyseal fusions indicated that the recovered pig bone was predominantly that of juvenile animals from 1 to 2.5 years of age. Adults over 2.5 years and immature pigs under 1 year of age are represented in smaller numbers. The bone was frequently cleavered into one to three-inch lengths (See Appendix 4). The pig was by far the chief meat source in China, outranking all other land animals combined (Anderson 1988). The tradition of using pork as the main protein base is well demonstrated in the features of Los Angeles Chinatown.

#### COW (Bos taurus)

The use of beef probably represents a departure from the traditional Chinese diet. Beef is rarely eaten in China today (Anderson 1988; Barer-Stein 1979). It is avoided by traditional Chinese because of an Indian-derived respect for the cow, introduced by Buddhism.

#### SQUIRREL (Spermophilus beecheyi)

Nearly complete mandibles and teeth of eight squirrels were identified as the California Ground Squirrel. The squirrel bones were larger in size than any of our comparative specimens. This size differential compares with squirrels identified for CA-ORA-600H, another historic site in Orange County. Although the faunal analysis of Riverside Chinatown stated that ground squirrels found

in the site were not used for food (Langenwalter 1987), cut and cleavered bones evidence their use for food at UPT. The use of a ubiquitous and easily obtainable local animal seems typical of the enterprising Chinese who probably would not ignore such an available and tasty food source.

CAT (Felis domesticus)

The cut and cleavered remains of three domestic cats were part of the UPT bone assemblage. Cats, rats, and mice are known to have been part of the diet in China, but only rarely. Anderson (1988) suggests that the use of cats may be more for medicinal than gustatory reasons. He also states that the consumption of cats and dogs is part of southern (Cantonese) cooking in the rice region.

GOPHER (Thomomys bottae)

The recovery of only four gopher bones from the three UPT features suggests that these strata were little disturbed by gophers. The gopher bones were not modified, and there is no indication that they were used for food.

RABBIT OR HARE (Leporidae)

Two bones of Feature 2B were unmistakably of the rabbit family. They compared more favorably with the domestic rabbit (Oryctolagus cuniculus) than to either the wild hare (Lepus californicus) or the wild rabbit (Sylvilagus sp.). The one individual which is represented may either have been an acquired domestic rabbit or may have been the opportunistic capture of a rabbit or hare.

RAT (Rattus norvegicus cf.)

One unmodified rat mandible was recovered. Like the gopher, it was probably intrusive.

CHICKEN (Gallus gallus)

Next to pork, chicken was the most used meat of the UPT features. Most of the recovered bones were from adult birds. As in China, chickens were one of the major domestic meat sources. They were excellent converters of cheap, inferior food into meat. Most of the chicken bones recovered were those of adults. Only one of 98 recovered tarsometarsi contained a rooster's spur which suggests that the flock may have been chiefly hens kept for both eggs and meat. Similar to casual flocks kept in rural America (personal experience) and China (Anderson 1988), the chickens of Chinatown were probably seldom given poultry food but shared the kitchen garbage with the pigs, adding what plant and insect foods they could peck and scratch out of their backyard environment.

**TURKEY** (Meleagris gallopavo)

We assume that the occupants of UPT used domestic turkeys although the bone fragments could also be those of the wild turkey. The turkey is an American bird introduced to China in the eighteenth century as something new in the Chinese diet (Anderson 1988), but it remained a minor addition to the domesticated animals of China.

**DUCK** (Anas sp., cf. Anas platyrhynchos)

The duck bone compared very favorably with the Mallard specimens; however, in size it was larger than the Mallard. This might indicate that the UPT occupants were using domesticated mallards. The bones of the feet compared closely to the cooked duck feet purchased this year from a Chinese delicatessen in Alhambra.

**GOOSE** (Chen sp.)

The bones of the geese of UPT were closer in comparison to the Snow Goose (Chen hyperborea) than to the Canada Goose (Branta canadensis) specimen or to a domesticated goose (Anser anser) purchased from a poultry market in today's Los Angeles Chinatown. Whether the UPT geese represent the Chinese Knobbed Goose or the wild Snow Goose which winters in California, cannot be determined as these species are nearly identical morphologically (Langenwalter 1987).

**PHEASANT** (Phasianus sp.)

Five bones of one pheasant were in the Feature 2 assemblage. These bones compared most favorably with the Ring-necked Pheasant (Phasianus torquatus).

**TURTLE** (Clemmys marmorata)

Most of the turtle bone was identified as the Western Pond Turtle. Six turtle bones could be identified as belonging to the pond turtle family (Emydidae) but were too fragmented to confirm as the Western Pond Turtle. Seven turtle bones were of a species not native to California or the United States and could only be placed in the order, Chelonia. Since turtles of every sort were eaten in China (Anderson 1988), the people of Chinatown would have utilized the local turtles to supplement their traditional imported species.

### SNAKE (Colubridae)

Only one incomplete snake vertebra was recovered from the UPT assemblage. This compared favorably with the corn snake, but on the basis of one partial bone, the genus could not be positively identified. It is assumed that this was an isolated non-cultural bone, not part of food remains.

### CUTTLEFISH (Sepia sp.)

Cuttlefish remains were recovered from all features but most of the cuttlebone fragments were in Feature 2B. Neither the common cuttlefish (Sepia officinalis) nor any other Sepia species occurs around North and South America (Boletzky 1983). The UPT cuttlefish (an edible mollusk of the squid family) was most likely imported from China. Spier (1958) reports that as long ago as the early 1850s, dried cuttlefish was imported by the Chinese of California as a traditional food item. The use of cuttlefish was common at Riverside Chinatown as well as at UPT (Goodman 1987). To aid in the conversion of cuttlebone fragments to a minimum number of individuals (MNI) which might have been present, a fresh cuttlefish was purchased in Chinatown, weighed, measured, and cooked to record the amount of edible meat and to extract the cuttlebone.

There are almost no distinguishing features that will indicate whether one is dealing with one cuttlebone or more than one. In some cases wear, color, and dorsal shapes and patterns can indicate the number of cuttlebones which are represented. In other cases an estimate of the number of cuttlefish was based on the weight of a whole cuttlebone vs. the collective weight of small fragments. The size of the whole or nearly whole examples is approximately the same as those currently sold as a source of lime for cage birds; those packaged by the Hartz Mountain Corporation are obtained from Thailand (Glass, personal communication 1989).

In addition to the meat, the cuttlebone (the internal shell) is added to poultry food. According to Grzimek (1972), the cuttlefish used to be significant in medicine as well. Its meat was believed to be an aphrodisiac, its eggs a cure for bladder catarrhs, and the ground-up cuttlebone was used in healing eye infections, asthma, and similar ailments.

### CRAB (Cancer sp.)

Fragments of crab claws were recovered from all three features, chiefly in Feature 3. These claws compare favorably to Cancer productus, however, more parts of the crab are needed for positive identification. The claws compare to large crabs found in markets today. Crabs are found from British Columbia to Baja California in tide pools and deeper sandy bottoms.



LITTLENECK CLAM (Protothaca staminea)

The common Littleneck Clam is abundant in shallow burrows 3 to 8 cm below the surface in coarse sand or sandy mud in bays and coves, and in gravel under large rocks on the open coast from the Aleutian Islands to Baja California.

ABALONE (Haliotis cracherodii)

Black Abalone is commonly found under large rocks and in crevices from the high intertidal zone to a depth of six meters. The black abalone was important in the California commercial abalone fishery before 1900, in a period when the bulk of the catch was taken by the Chinese and dried for export to the Orient (Morris 1980).

LUCINE (Epilucina californica)

A common shellfish found on rocky rubble and sand of the low intertidal zone to offshore depths of 80 meters.

OYSTER (Crassostrea gigas)

The common Pacific (or, Japanese) Oyster is found cemented to rocks and shells in bays and on mud flats in the low intertidal zone. Its range is from British Columbia to Southern California. This species was introduced in Hawaii and on the west coast in the historical period, and the importation negates any consideration of prehistoric use.

WAVY CHIONE (Chione undatella)

CALIFORNIA CHIONE (Chione californiensis)

COCKLE (Chione sp.)

These cockles are common shellfish found just below the surface in sand and mud flats in the low intertidal zone and offshore to 50 meters. Range: Santa Barbara County to Peru, South America.

PISMO CLAM (Tivela stultorum)

A common clam found in the low intertidal zone and offshore to 25 meters on broad sandy beaches exposed to strong surf, from Half Moon Bay to Baja California. The Pismo Clam provides a large amount of meat for very little effort.

UNIDENTIFIED CLAM (Pelecypoda)

Three shell fragments were identifiable only to the term "clam."

Table 2. Species of Total UPT Assemblage  
 100% Weight = 6964.1 grams, 100% Frequency = 506 fragments, 100% MNI = 199

SPECIES	GRAMS	%WEIGHT	NISP	%FREQUENCY	MNI	%MNI
<b>Mammals</b>						
<i>Sus scrofa</i>	2487.7	35.72	958	21.26	23	11.56
<i>Bos taurus</i>	1805.0	25.92	78	1.73	7	3.52
<i>Spermophilus beecheyi</i>	18.8	0.27	45	1.00	8	4.02
<i>Felis domesticus</i>	37.1	0.53	38	0.84	3	1.50
<i>Thomomys bottae</i>	0.9	0.01	4	0.09	2	1.01
Leporidae	2.1	0.03	2	0.04	1	0.50
<i>Rattus norvegicus</i>	1.3	0.02	2	0.04	1	0.50
<b>Total</b>	<b>4,352.90</b>	<b>62.50</b>	<b>1,127.00</b>	<b>25.00</b>	<b>45.00</b>	<b>22.61</b>
<b>Birds</b>						
<i>Gallus gallus</i>	795.2	11.42	958	21.26	44	22.11
<i>Meleagris gallopavo</i>	285.7	4.10	92	2.04	22	11.06
<i>Anas sp.</i>	81.4	1.17	95	2.11	20	10.05
<i>Chen sp.</i>	13.3	0.19	21	0.47	6	3.02
<i>Phasianus sp.</i>	4.8	0.07	5	0.11	1	0.50
<b>Total</b>	<b>1,180.40</b>	<b>16.95</b>	<b>1,171.00</b>	<b>25.99</b>	<b>93.00</b>	<b>46.74</b>
<b>Reptiles</b>						
<i>Clemmys marmorata</i>	168.7	2.42	99	2.20	16	8.04
<i>Chelonia</i>	6.9	0.10	7	0.16	4	2.01
Emydidae	2.9	0.04	6	0.13	1	0.50
Colubridae	0.1	0.01	1	0.02	1	0.50
<b>Total</b>	<b>178.60</b>	<b>2.57</b>	<b>113.00</b>	<b>2.51</b>	<b>22.00</b>	<b>11.05</b>
<b>Invertebrates</b>						
<i>Sepia sp.</i>	37.2	0.53	119	2.64	11	5.52
<i>Cancer sp.</i>	18.4	0.26	18	0.40	6	3.02
<i>Chione sp.</i>	15.2	0.22	4	0.09	4	2.01
<i>Epilucina californica</i>	1.2	0.02	5	0.11	4	2.01
<i>Protothaca staminea</i>	18.8	0.27	9	0.20	4	2.01
<i>Haliotis cracherodii</i>	26.1	0.38	8	0.18	3	1.50
Unid. clam (Pelecypoda)	0.6	0.01	3	0.07	3	1.50
<i>Crassostrea gigas</i>	22.8	0.33	4	0.09	2	1.01
<i>Tivela stultorum</i>	9.9	0.14	2	0.04	2	1.01
<b>Total</b>	<b>150.20</b>	<b>2.16</b>	<b>172.00</b>	<b>3.82</b>	<b>39.00</b>	<b>19.59</b>
<b>Totals</b>	<b>5,862.10</b>	<b>84.18</b>	<b>2,583.00</b>	<b>57.32</b>	<b>199.00</b>	<b>99.99</b>
<b>+ Unid. fragments</b>	<b>1102.0</b>	<b>15.82</b>	<b>1923</b>	<b>42.68</b>		
<b>Total</b>	<b>6,964.10</b>	<b>100.00</b>	<b>4,506.00</b>	<b>100.00</b>	<b>199.00</b>	<b>99.99</b>

%WEIGHT = % Of total assemblage weight  
 NISP = Number of identified specimens for all features  
 % Frequency = %NISP in relation to the Total Fragments  
 MNI = Minimum number of individuals

Feature 2 contained the smallest portion of the total bone assemblage: 937 fragments weighing 1014.1 grams. More than 65 percent of the fragments were identified. Table 3 records the identified bone.

#### NUMBERS OF IDENTIFIED SPECIMENS AND SPECIES

The number of identified bones (NISP) may not always correlate with the minimum number of individuals (MNI) which has been calculated from the most frequently recovered bone of each species. Table 2 presents the species from the combined features, in the descending order of the estimated numbers of individuals.

Table 5 depicts the faunal remains from Feature 3. Feature 3 contained the second largest portion of the UPT bone: 1420 fragments weighing 2215.2 grams, 873 fragments weighing 1856.0 grams were identifiable, with 83 MNI.

#### UNIDENTIFIABLE BONE

In the Chinatown assemblage, the age of the site is, of course, one of the most controlling factors for bone fragmentation and thus for bone identifiability; the bone had been buried for about 100 years. The percentage of UPT identifiable bone, 84.09 percent by weight, 57.32 percent by number of fragments, was very high. By weight, 1102 grams, or by frequency, 1923 fragments were unidentifiable.

Fragment size also controls identifiability; much of the UPT bone was cleaved into small pieces of 1/2 inch to 3 inches in length. When articulating ends were present, the fragment could be identified. When only the center sections of small bones were recovered, it could rarely be identified to genus or species, but usually a center fragment could be classified as, e.g., "fowl" and sized to its closest match, such as "chicken size" or "turkey size." The mammal bone could be sized as "very large mammal" (cow size), "large mammal" (pig size), "medium mammal" (dog size), "small mammal" (cat or squirrel size), or "very small mammal" (rodent size). Some fragments could not be placed in a class and were designated only as "vertebrate." The classifications of unidentifiable fragments are presented in Tables 6 through 9, and the individual fragments are listed by feature, by class, and by bone name in Appendix 5.

Table 3. Species of Feature 2 (100% Weight of NISP = 826.5 grams, 100% NISP = 606 fragments, 100% MNI = 46). Species are listed in the descending order of the calculated minimum numbers of individuals.						
SPECIES	GRAMS	%WEIGHT	NISP	%FREQUENCY	MNI	%MNI
<b>Mammals</b>						
<i>Sus scrofa</i>	265.0	31.91	148	24.18	3	6.52
<i>Bos taurus</i>	46.0	5.54	3	0.49	1	2.17
<i>Spermophilus beecheyi</i>	0.0	0.00	0	0.00	0	0.00
<i>Felis domesticus</i>	28.1	3.38	33	5.39	1	2.17
<i>Thomomys bottae</i>	0.0	0.00	0	0.00	0	0.00
Leporidae	0.0	0.00	0	0.00	0	0.00
<i>Rattus norvegicus</i>	0.0	0.00	0	0.00	0	0.00
Total	339.10	40.83	184.00	30.06	5.00	10.86
<b>Birds</b>						
<i>Gallus gallus</i>	342.9	10.80	443	40.49	19	27.14
<i>Meleagris gallopavo</i>	53.2	1.68	18	1.65	5	7.14
<i>Anas sp.</i>	26.1	0.82	30	2.74	5	7.14
<i>Chen sp.</i>	4.3	0.14	10	0.91	2	2.85
<i>Phasianus sp.</i>	0.0	0.00	0	0.00	0	0.00
Total	426.50	13.44	501.00	45.79	31.00	44.27
<b>Reptiles</b>						
<i>Clemmys marmorata</i>	0.3	0.01	1	0.09	1	1.43
<i>Chelonia</i>	5.0	0.16	3	0.27	1	1.43
Emydidae	0.0	0.00	0	0.00	0	0.00
Colubridae	0.0	0.00	0	0.00	0	0.00
Total	5.30	0.17	4.00	0.36	2.00	2.86
<b>Invertebrates</b>						
<i>Sepia sp.</i>	31.6	1.00	110	10.05	8	11.43
<i>Cancer sp.</i>	1.2	0.04	1	0.09	1	1.43
<i>Chione sp.</i>	0.4	0.01	1	0.09	1	1.43
<i>Chione undatella</i>	1.9	0.06	1	0.09	1	1.43
<i>Protothaca staminea</i>	1.9	0.06	2	0.18	2	2.85
<i>Haliotis cracherodii</i>	14.8	0.47	6	0.55	2	2.85
Unid. clam	0.4	0.01	2	0.18	2	2.85
<i>Crassostrea gigas</i>	0.0	0.00	0	0.00	0	0.00
<i>Tivela stultorum</i>	7.8	0.25	1	0.09	1	1.43
Total	60.00	1.90	124.00	11.32	18.00	25.70
Totals	830.90	56.34	813.00	87.53	56.00	83.69
+ Unid. fragments	1102.0	15.82	1923	42.68		
Total	1,932.90	72.16	2,736.00	130.21	56.00	83.69
%WEIGHT = % Of total assemblage weight NISP = Number of identified specimens for all features % Frequency = %NISP in relation to the Total Fragments						

Table 4. Species of Feature 2B

SPECIES	GRAMS	%WEIGHT	NISP	%FREQUENCY	MNI	%MNI
<b>Mammals</b>						
<i>Sus scrofa</i>	1097.1	34.57	405	37.02	8	11.43
<i>Bos taurus</i>	1576.1	49.66	53	4.84	5	7.14
<i>Spermophilus beecheyi</i>	1.8	0.06	3	0.27	2	2.86
<i>Felis domesticus</i>	4.9	0.15	3	0.27	1	1.43
<i>Thomomys bottae</i>	0.5	0.01	1	0.09	1	1.43
Leporidae	2.1	0.07	2	0.18	1	1.43
<i>Rattus norvegicus</i>	1.3	0.04	2	0.18	1	1.43
Total	2,683.80	84.56	469.00	42.85	19.00	27.15
<b>Birds</b>						
<i>Gallus gallus</i>	342.9	10.80	443	40.49	19	27.14
<i>Meleagris gallopavo</i>	53.2	1.68	18	1.65	5	7.14
<i>Anas sp.</i>	26.1	0.82	30	2.74	5	7.14
<i>Chen sp.</i>	4.3	0.14	10	0.91	2	2.85
<i>Phasianus sp.</i>	0.0	0.00	0	0.00	0	0.00
Total	426.50	13.44	501.00	45.79	31.00	44.27
<b>Reptiles</b>						
<i>Clemmys marmorata</i>	0.3	0.01	1	0.09	1	1.43
Chelonia	5.0	0.16	3	0.27	1	1.43
Emyridae	0.0	0.00	0	0.00	0	0.00
Colubridae	0.0	0.00	0	0.00	0	0.00
Total	5.30	0.17	4.00	0.36	2.00	2.86
<b>Invertebrates</b>						
<i>Sepia sp.</i>	31.6	1.00	110	10.05	8	11.43
<i>Cancer sp.</i>	1.2	0.04	1	0.09	1	1.43
<i>Chione sp.</i>	0.4	0.01	1	0.09	1	1.43
<i>Chione undatella</i>	1.9	0.06	1	0.09	1	1.43
<i>Protothaca staminea</i>	1.9	0.06	2	0.18	2	2.85
<i>Haliotis cracherodii</i>	14.8	0.47	6	0.55	2	2.85
Unid. clam	0.4	0.01	2	0.18	2	2.85
<i>Crassostrea gigas</i>	0.0	0.00	0	0.00	0	0.00
<i>Tivela stultorum</i>	7.8	0.25	1	0.09	1	1.43
Total	60.0	1.90	124	11.32	18	25.70
Totals	3,175.60	100.07	1,098	100.32	70	99.98
+ Unid. fragments	1102.0	15.82	1923	42.68		
Total	4,277.60	115.89	3,021	143.00	70	99.98
%WEIGHT = % Of total assemblage weight NISP = Number of identified specimens for all features % Frequency = %NISP in relation to the Total Fragments						



Table 5. Species of Feature 3

SPECIES	GRAMS	%WEIGHT	NISP	%FREQUENCY	MNI	%MNI
<b>Mammals</b>						
<i>Sus scrofa</i>	1125.6	60.65	405	46.39	12	14.46
<i>Bos taurus</i>	182.9	9.85	22	2.52	1	1.20
<i>Spermophilus beechevi</i>	17.0	0.92	42	4.81	6	7.23
<i>Felis domesticus</i>	4.1	0.22	2	0.23	1	1.20
<i>Thomomys bottae</i>	0.4	0.02	3	0.34	1	1.20
Leporidae	0.0	0.00	0	0.00	0	0.00
<i>Rattus norvegicus</i>	0.0	0.00	0	0.00	0	0.00
Total	1,330.0	71.66	474	54.29	21	25.29
<b>Birds</b>						
<i>Gallus gallus</i>	208.8	11.25	227	26.00	13	15.66
<i>Meleagris gallopavo</i>	224.8	12.11	70	8.02	16	19.28
<i>Anas sp.</i>	39.1	2.11	51	5.84	11	13.25
<i>Chen sp.</i>	4.5	0.24	7	0.80	3	3.61
<i>Phasianus sp.</i>	0.0	0.00	0	0.00	0	0.00
Total	477.2	25.71	355	40.66	43	51.80
<b>Reptiles</b>						
<i>Clemmys marmorata</i>	10.1	0.54	8	0.92	2	2.41
<i>Chelonia</i>	0.5	0.03	1	0.11	1	1.20
Emydidae	0.5	0.03	1	0.11	1	1.20
Colubridae	0.1	0.01	1	0.11	1	1.20
Total	11.2	0.61	11	1.25	5	6.01
<b>Invertebrates</b>						
<i>Sepia sp.</i>	5.6	0.30	9	1.03	3	3.61
<i>Cancer sp.</i>	15.8	0.85	16	1.83	4	4.82
<i>Chione sp.</i>	0.0	0.00	0	0.00	0	0.00
<i>Chione undatella</i>	9.0	0.48	1	0.11	1	1.20
<i>Protothaca staminea</i>	0.0	0.00	0	0.00	0	0.00
<i>Epilucina californiensis</i>	1.2	0.06	5	0.57	4	4.82
Unid. clam	0.0	0.00	0	0.00	0	0.00
<i>Chione californiensis</i>	3.9	0.21	1	0.11	1	1.20
<i>Tivela stultorum</i>	2.1	0.11	1	0.11	1	1.20
Total	37.6	2.01	33	3.76	14	16.85
Totals	1,856.0	99.99	873	99.96	83	99.95
+ Unid. fragments	1102.0	15.82	1923	42.68		
Total	2,958.00	115.81	2,796	142.64	83	99.95
%WEIGHT = % Of total assemblage weight NISP = Number of identified specimens for all features % Frequency = %NISP in relation to the Total Fragments						

Table 6. Unidentified Fragments, All Features									
#RECS	FT#	CLASS	FREQ	WEIGHT	HSW	KNF	CLV	KCL	BRN
340	All	fowl	708	248.3	0	9	238	5	21
58	All	very large mammal	54	192.7	26	1	19	0	12
312	All	large mammal	760	627.7	37	17	373	2	150
3	All	medium mammal	4	0.7	0	1	1	0	0
41	All	small mammal	129	17.1	0	1	16	0	11
1	All	very small mammal	1	0.1	0	0	0	0	0
3	All	rodent	3	0.5	0	0	1	0	0
36	All	vertebrate	264	14.9	0	0	8	5	70
794.00 Totals, All Features:			1,923	1,102.0	63	29	656	12	264
#RECS = Number of (dBase III) records FT# = Feature number FREQ = Number of unidentified fragments HSW = Number of handsawed fragments KNF = Number of fragments cut by knife CLV = Number of fragments cut by cleaver KCL = #Fragments cut by cleaver or knife, (unable to differentiate) BRN = Number of burned fragments									

Tables 7 through 9 list the unidentifiable bone by feature.

Table 7. Unidentified Fragments, Feature 2									
#RECS	FT#	CLASS	FREQ	WEIGHT	HSW	KNF	CLV	KCL	BRN
68	2	fowl	146	53.3	0	1	44	0	3
2	2	very large mammal	2	6.9	1	0	1	0	0
58	2	large mammal	139	116.9	6	1	50	0	34
2	2	medium mammal	3	0.4	0	1	1	0	0
2	2	small mammal	2	1.7	0	0	1	0	0
10	2	vertebrate	33	4.4	0	0	3	4	0
142	Totals All Features:		325	183.6	7	3	100	4	37

Most of the unidentifiable fragments were fowl or pig-sized large mammal bone which were heavily cleavered. The term "fowl" is used to denote birds of the size of chickens, ducks, turkeys, or geese. It may be noted that the fragments which were identified only to the vertebrate class, which includes fragments of birds, mammals, and reptiles, were very small; the average size was about one-twentieth of a gram (0.056gm) and many (26%) were burned.

The unidentifiable fragments of Feature 2 are predominantly those of fowl and pig-sized mammal, with other faunal classes little represented.

Many unidentifiable fragments in Feature 2B were small in size and cleavered and burned. This feature had more bone that could be classified only as very large mammal, probably that of cow, and more very small fragments identifiable only as vertebrate. About the same proportion of cleavered fragments as in Feature 2 were recovered but many more of the fragments were burned. The small mammal bone could be part of the cat, rabbit, or hare which was recovered from this feature.

#RECS	FT#	CLASS	FREQ	WEIGHT	HSW	KNF	CLV	KCL	BRN
170	2B	fowl	354	109.8	0	5	125	3	16
24	2B	very large mammal	34	102.9	15	1	11	0	12
147	2B	large mammal	374	327.8	19	9	179	0	103
27	2B	small mammal	102	12.6	0	1	15	0	9
18	2B	vertebrate	187	6.1	0	0	4	0	70
386	Totals, Feature 2B:		1,051	559.2	34	16	334	3	210

More small mammal sized bone were in Feature 3, probably paralleling the recovery of six ground squirrels from this feature. The bone designated as rodent was also probably ground squirrel. The medium-sized mammal bone was probably that of a small pig.

In addition to the identified fragments, all of the unidentifiable fragments were examined closely for modifications, and the results are included in Tables 10 through 13.

**MODIFIED BONE**

Much of the bone was cut by cleavers, less often by knives. Some of the larger fragments and pig rib fragments had edges which were sawed. Only two of the larger Bos bones had sawed edges which seemed too smooth to have been cut by a handsaw. These were compared with machine-sawed bones which had been collected from modern meat markets and the two UPT bone specimens were tentatively categorized as machine-sawed.

Burned and cut modifications were noted and recorded. Cut and sawed bone fragments weighed 4939 grams or about 71 percent of the total assemblage by weight; 2026 fragments or 45 percent of all of bones were either cut or sawed. Table 10A shows the weight and frequency of the cut bone for all features; Table 10B shows the

#RECS	FT#	CLASS	FREQ	WEIGHT	HSW	KNF	CLV	KCL	BRN
103	3	fowl	208	85.2	0	3	69	2	2
16	3	very large mammal	18	82.9	10	0	7	0	0
107	3	large mammal	247	183.0	12	7	144	2	13
1	3	medium mammal	1	0.3	0	0	0	0	0
12	3	small mammal	25	2.8	0	0	0	0	2
1	3	very small mammal	1	0.1	0	0	0	0	0
3	3	rodent	3	0.5	0	0	1	0	0
8	3	vertebrate	44	4.4	0	0	1	1	0
Totals, Feature 3:			547	359.2	22	10	222	5	17

modification types, weight and frequency by species for the identified bone, and by class for the unidentified fragments. Percentages of modified bone for each feature are in Table 15. Details of the cut bone are in Appendix 4.

FT	#FRAGS	#GRAMS	MODIFICATION				
			CLEAVER	KNIFE CUT	KN OR CLV	HANDSAW	MACHINE SAW
2	380	536.3	347	28	6	11	0
2B	938	2922.3	806	65	15	73	2
3	708	1480.6	617	52	15	59	0
All	2,026	4,939.2	1,770	145	36	143	2

The only machine-sawed bones of the Chinatown assemblage were in Feature 2B. Some of the bones of five individual cows were in this feature (see Figure 2); other cow bones were hand-sawed (HSW) suggesting either that beef was purchased from a market which sawed the beef into portions, or it was sawed by the occupants of this feature. Only one identified cat bone was cleavered, however Feature 2B had 15 fragments of unidentifiable cat-sized bone which was cleavered. Feature 2B had a very large number of cleavered pig bones, especially when combined with the pig-sized unidentifiable bone. Some of the bone was also handsawed which suggests that pig carcasses, or at least partial carcasses, may have been butchered in this location.

Table 10B. Modified Bone for Different Fauna, All Features									
#RECS	FAUNA	#BONES	#GRAMS	MSW	HSW	KNF	CLV	KCL	BRN
35	<u>Anas sp.</u>	40	37.2	0	0	4	35	1	1
64	<u>Bos taurus</u>	68	1693.1	2	34	13	27	3	1
12	<u>Chen sp.</u>	12	8.3	0	0	2	11	0	0
4	<u>Clemmys marmorata</u>	4	12.0	0	0	2	4	0	0
2	Chelonia	2	4.4	0	0	0	2	0	0
1	Emydidae	1	0.3	0	0	0	1	0	0
15	<u>Felis domesticus</u>	15	15.7	0	0	5	11	0	0
398	<u>Gallus gallus</u>	460	449.9	0	0	42	418	10	8
38	<u>Meleagris gallopv.</u>	40	118.6	0	0	6	33	2	1
2	<u>Phasianus sp.</u>	2	3.3	0	0	1	1	0	0
4	<u>Spermophilus sp.</u>	4	1.4	0	0	1	3	0	0
462	<u>Sus scrofa</u>	640	1848.4	0	46	40	568	8	14
157	fowl	250	114.1	0	0	9	238	5	3
33	cow-sized mammal	45	173.6	0	26	1	19	0	10
199	pig-size mammal	411	449.6	0	37	17	373	2	43
1	dog-size mammal	1	0.2	0	0	1	1	0	0
10	cat-size mammal	17	5.2	0	0	1	16	0	2
1	rodent	1	0.2	0	0	0	1	0	0
9	vertebrate	13	3.7	0	0	0	8	5	0
1,447 Sum, All Features		2,026	4,939.2	2	143	145	1,770	36	83.00

Table 11 lists the cut bone by fauna for Feature 2.

### BURNED BONE

There was very little burned bone in the UPT assemblage; only 4% by weight, 7% by number of fragments was burned. Table 14 reflects the burned bone from all features.

The analysis of the UPT assemblage paid particular attention to modifications of the bones. Five types of cuts were recorded: cleaver cuts, knife cuts, indeterminate cuts which were made by either the cleaver or knife, cuts made by a handsaw, and cuts made by a machine saw.



Table 11. Modified Bone for Different Fauna, Feature 2									
#RECS	FAUNA	#BONES	#GRAMS	MSW	HSW	KNF	CLV	KCL	BRN
7	Anas sp.	7	9.5	0	0	2	5	0	1
3	Bos taurus	3	46.1	0	2	0	2	0	0
1	Chen sp.	1	1.6	0	0	0	1	0	0
4	Clemmys marmorata	4	12.0	0	0	2	4	0	0
1	Emydidae	1	0.3	0	0	0	1	0	0
13	Felis domesticus	13	13.3	0	0	4	10	0	0
104	Gallus gallus	122	116.3	0	0	11	112	2	1
4	Meleagris gallopv.	4	7.7	0	0	1	3	0	0
2	Phasianus sp.	2	3.3	0	0	1	1	0	0
67	Sus scrofa	112	206.2	0	2	4	108	0	4
32	fowl	45	29.3	0	0	1	44	0	1
2	cow-sized mammal	2	6.9	0	1	0	1	0	0
32	pig-size mammal	55	81.1	0	6	1	50	0	8
1	dog-size mammal	1	0.2	0	0	1	1	0	0
1	cat-size mammal	1	1.2	0	0	0	1	0	0
3	vertebrate	7	1.4	0	0	0	3	4	0
227	Total, Feature 2:	380	536.4	0	11	28	347	6	15

Table 12 lists the cut bone by fauna for Feature 2B.

Table 12. Modified Bone for Different Fauna, Feature 2B									
#RECS	FAUNA	#BONES	#GRAMS	MSW	HSW	KNF	CLV	KCL	BRN
10	Anas sp.	13	13.3	0	0	4	12	1	0
40	Bos taurus	43	1464.2	2	15	11	18	2	1
2	Chelonia	2	4.4	0	0	0	2	0	0
2	Chen sp.	7	3.0	0	0	1	6	0	0
1	Felis domesticus	1	1.1	0	0	0	1	0	0
191	Gallus gallus	211	209.6	0	0	19	190	7	7
8	Meleagris gallopv.	8	34.3	0	0	0	8	1	0
191	Sus scrofa	275	832.0	0	24	18	235	1	8
80	fowl	132	44.9	0	0	5	125	3	2
17	cow-sized mammal	27	89.6	0	15	1	11	0	10
93	pig-size mammal	199	219.9	0	19	9	179	0	28
9	cat-size mammal	16	4.0	0	0	1	15	0	2
4	vertebrate	4	2.0	0	0	0	4	0	0
653	Total Feature 2B:	938	2,922.3	2	73	69	806	15	58.00

Table 13 shows the cut bone for different fauna of Feature 3.

#RECS	FAUNA	#BONES	#GRAMS	MSW	HSW	KNF	CLV	KCL	BRN
18	<u>Anas sp.</u>	20	14.4	0	0	2	18	0	0
21	<u>Bos taurus</u>	22	182.9	0	17	2	7	1	0
4	<u>Chen sp.</u>	4	3.7	0	0	1	4	0	0
1	<u>Felis domesticus</u>	1	1.3	0	0	1	0	0	0
103	<u>Gallus gallus</u>	127	124.0	0	0	12	116	1	0
26	<u>Meleagris gallop.</u>	28	76.6	0	0	5	22	1	1
4	<u>Spermophilus sp.</u>	4	1.4	0	0	1	3	0	0
204	<u>Sus scrofa</u>	253	810.2	0	20	18	225	7	2
45	fowl	73	39.9	0	0	3	69	2	0
14	cow-sized mammal	16	77.1	0	10	0	7	0	0
74	pig-size mammal	157	148.6	0	12	7	144	2	7
1	rodent	1	0.2	0	0	0	1	0	0
2	vertebrate	2	0.3	0	0	0	1	1	0
517	Total Feature :	708	1,480.6	0	59	52	617	15	10

#RECORDS	FEATURE NO.	NO. OF BURNED FRAGMENTS	WEIGHT (GRAMS)
28	2	48	46.5
96	2B	249	218.1
16	3	21	23.1
140	ALL	318	287.7

Table 15 presents the percentages of modified bone for each feature.

FT	TOTAL FRAGMENTS	#CUT	%CUT	#BURNED	%BURNED
2	937	380	40.56	48	5.12
2B	2149	938	43.65	249	11.59
3	1420	708	49.86	21	1.48
All	4,506	2,026	44.96	318	7.06

ANATOMICAL PART DISTRIBUTION

Figures 1 through 7 below depict the frequency of the recovered parts of four of the mammal species and three of the bird species of the Chinatown assemblage. The numbers in the circles show the frequency (NISP) of the particular bones.

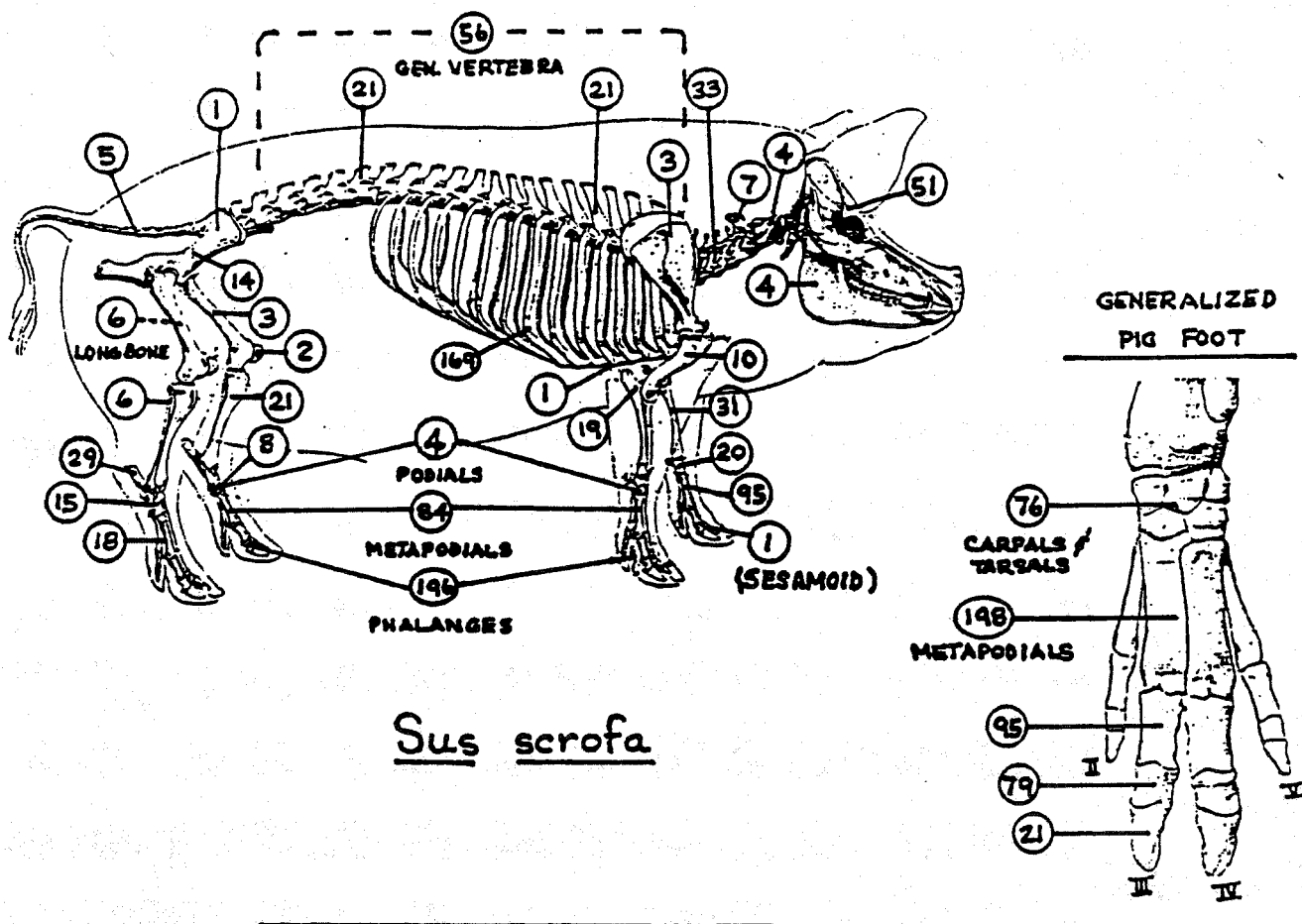


Figure 1: Sus scrofa (Pig) NISP:958 MNI:23.

Bones from at least 23 pigs were recovered for the whole UPT assemblage. The most frequently recovered parts were rib fragments, metapodials, and phalanges. For 23 pigs we would expect to recover 16 metapodials per pig, or 368 metapodials if all parts of all pigs were recovered. Consequently, pig feet were not overrepresented, but other parts of the animal were underrepresented if whole animals were used in the features. There is a lack of the bones of the meatier parts such as femurs (e.g., three fragments instead of 46), suggesting that by choice or by necessity, the less expensive cuts of pork were utilized by the occupants of UPT. This pattern would fit a family market where pork was sold: the meatier parts sold for more profit; the less meaty parts utilized by the family. The pattern would also fit the purchase of less expensive pork parts from an outside source.

Figure 2 depicts the bones and bone parts recovered from cows.

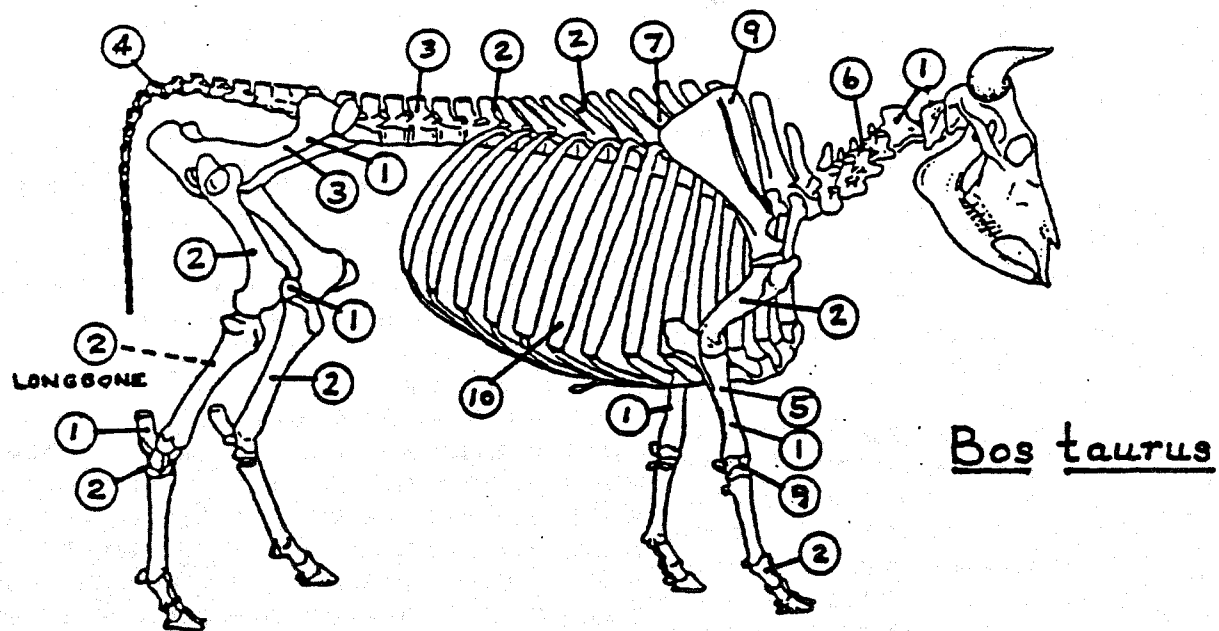


Figure 2: Bos taurus (Cow)

NISP:78

MNI:7

There were not enough beef bones recovered to establish a pattern of utilization. It is interesting that no skull fragments were recovered. The bones recovered were from all parts of the animal. Bones of the foreleg were most frequent. Fragments of the scapula were transverse slices, such as in blade roasts or shoulder steaks. Other than the scapula fragments, the parts represent, for the most part, the less meaty and less expensive cuts of beef, for example, vertebrae, carpals and tarsals. The frequency and distribution of beef bone suggests that beef was used only occasionally, and that the butchering location was other than in the features. Knife and cleaver cuts on the bones would suggest that the beef parts were further divided before or after cooking by the occupants of the features.

Figure 3 shows the distribution of bone from ground squirrels.

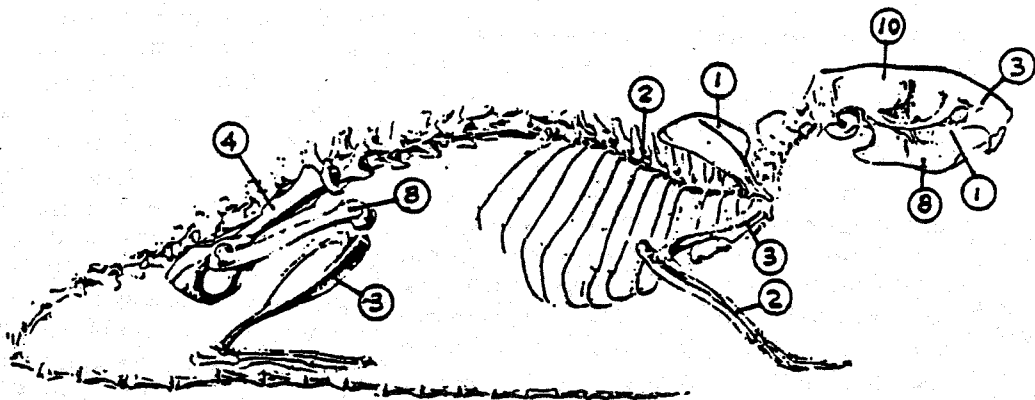


Figure 3: Spermophilus beecheyi (California ground squirrel)  
NISP:45 MNI:8 Knife cut:1 Cleavered:3



Bones from all parts of the ground squirrel suggest that the whole animals were used in the features. Modifications of some of the bones indicate that these animals were used as food; the femurs were cleavered, and the humerus has a cut from a knife.

Figure 4 depicts the frequency of recovered cat bones.

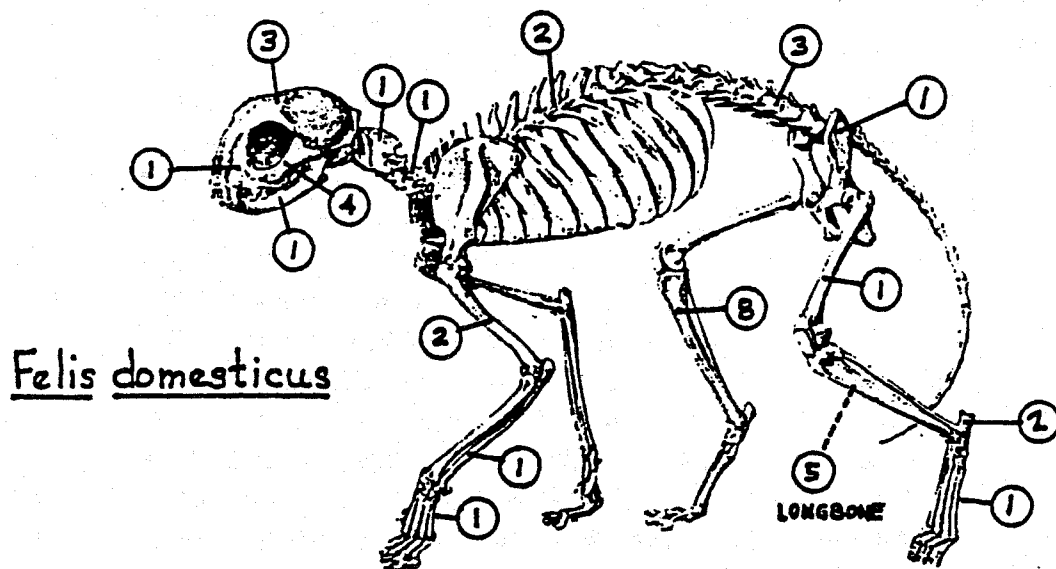


Figure 4: Felis domesticus

NISP = 38

MNI = 3

Bones were recovered from nearly all parts of the feline body. Eleven cleaver cuts and five knife cuts were found on the cranium, vertebrae, and longbones.

Figure 5 shows the distribution of chicken bones recovered from the three features.

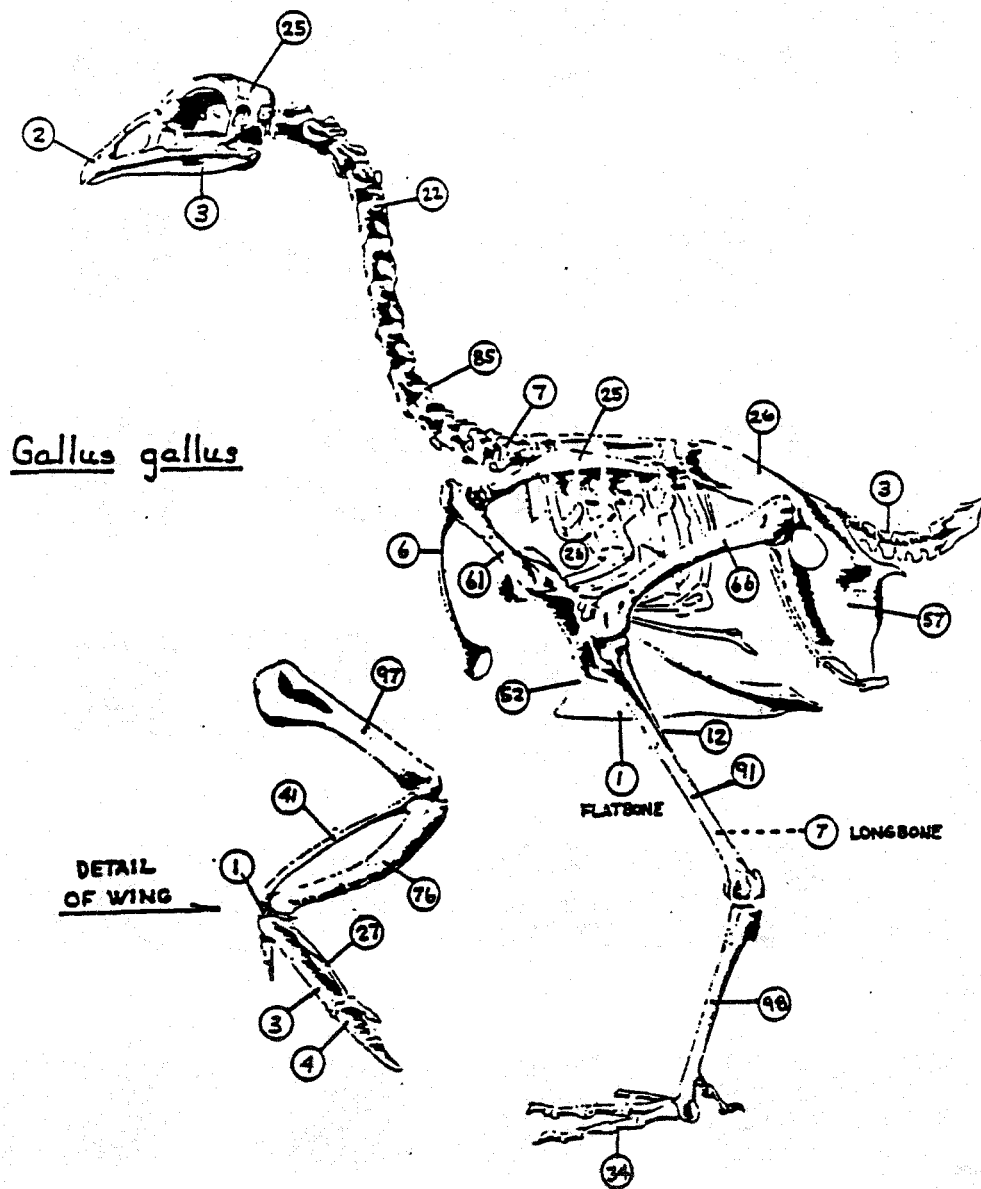


Figure 5: Gallus gallus (Chicken) NISP:958 MNI:44

Bones from all parts of the chicken were recovered. The recovery of the meaty parts of the birds suggests utilization of whole bird by the occupants of the features. Because the birds were predominantly adult, the chickens could have been kept for egg production and then utilized for food when the birds were at the end of their peak egg production. Only one medullary bone, a bone showing the inner deposit of extra calcium common in egg layers, was found. The use of adult chickens together with a lack of medullary bone would suggest a flock which was used both for eggs and meat.

Figure 6 shows the distribution of recovered turkey bones.

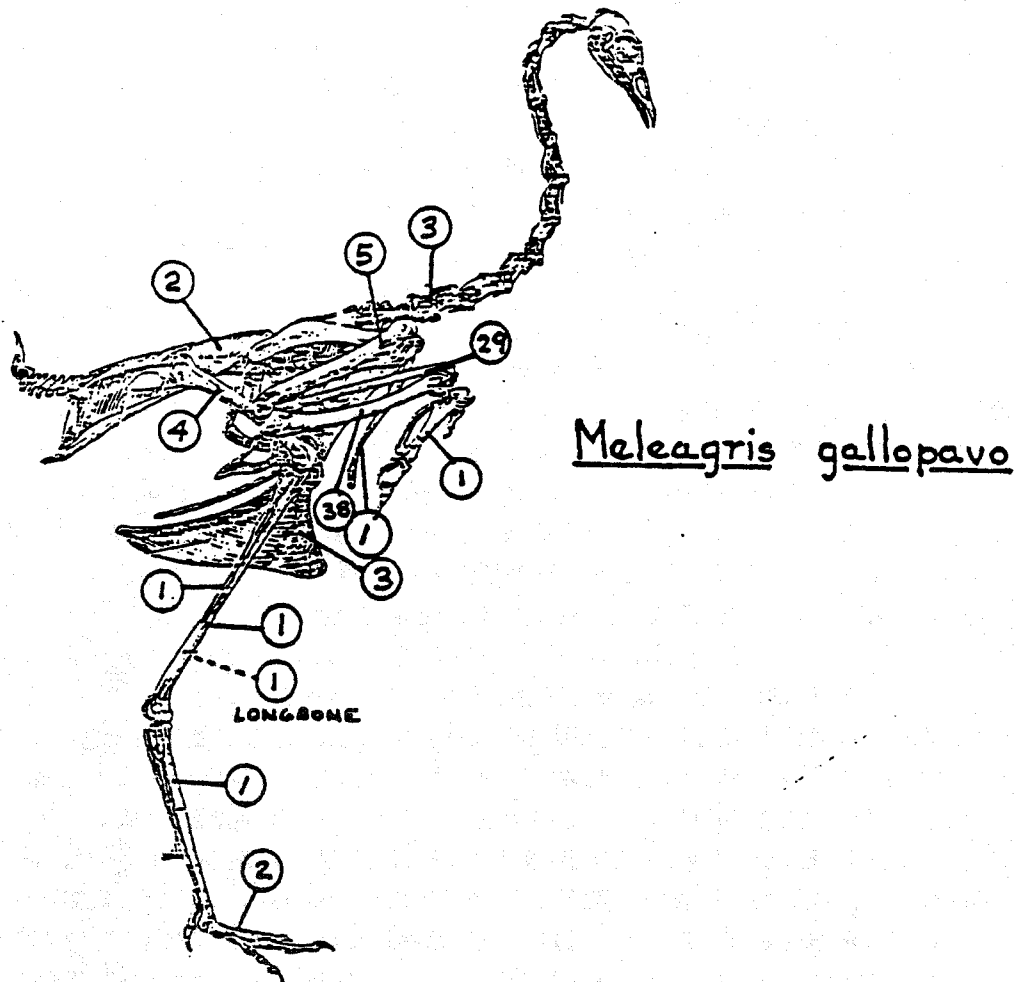


Figure 6: Meleagris gallopavo (Turkey) NISP:92 MNI:22  
 Cleavered bones: 33 Knife Cuts: 6

Bones of the turkey were not evenly distributed: parts of the center wing were overrepresented, and the meatier parts of the body such as breast and upper legs were underrepresented. One explanation for this differential distribution is that the majority of the turkey parts were used outside of the features, or that turkey wings were brought into the features. The turkey ulna is a large, strong, compact bone, easy to identify, which may account somewhat for its high representation, whereas the turkey humerus, for example, is a lighter, shorter, more easily shattered bone.

Figure 7 depicts the distribution of duck bones.

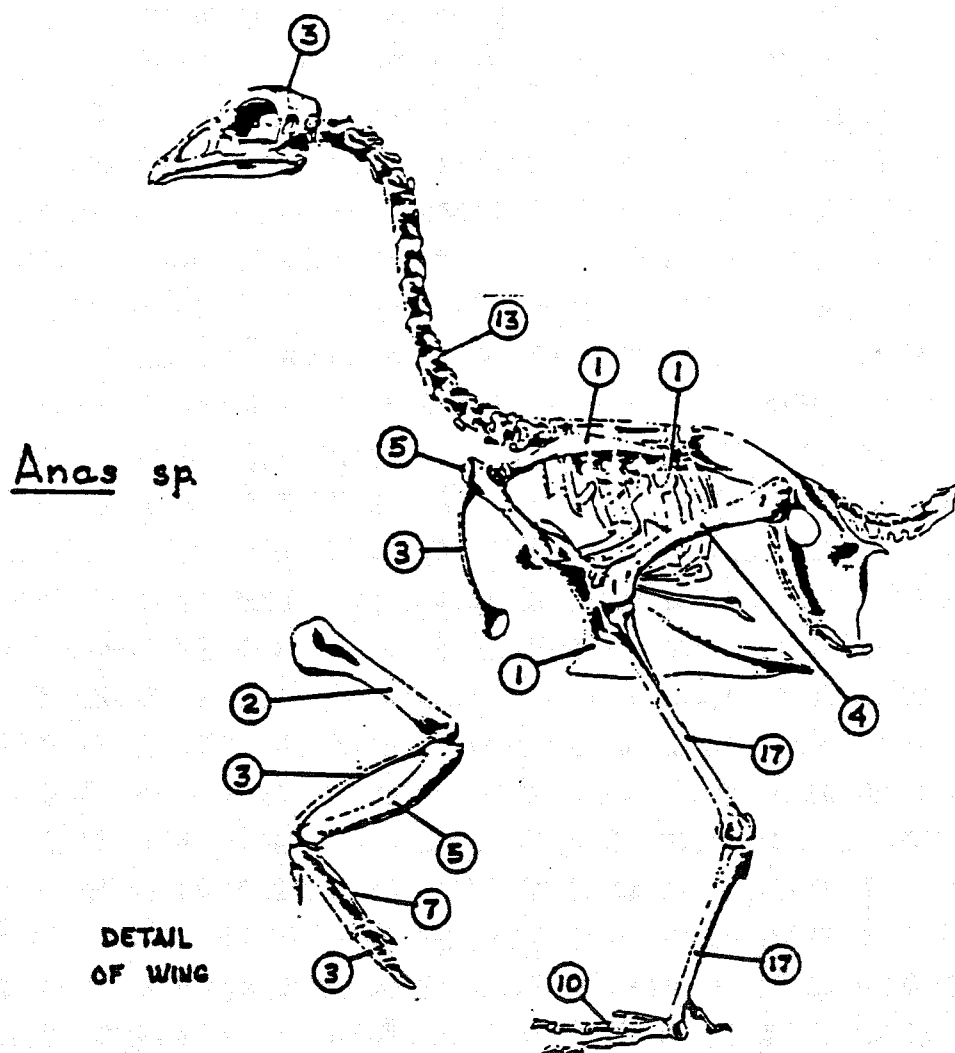


Figure 7: Anas sp. (Duck)

NISP:95 MNI:20

Cleavered bones: 35

Knife cuts: 4

The distribution of duck bones reveals an overrepresentation of duck feet. Separate duck feet are available today in most Chinese markets, and poultry feet are considered a delicacy in traditional Chinese cooking; they are greatly relished for nibbling and for making stock (Anderson 1988). Domestic ducks would be part of common household flocks; the large numbers of duck foot bones may suggest that duck feet were obtained from outside of the features.

## DISCUSSION

Fifteen tables and seven figures have reported differences in the faunal remains from three analytical units: Features 2, 2B, and 3.

Feature 2 had only 21 percent of the bone fragments with the smallest fragments (average size = 1.08 gm) but 65 percent of the Feature 2 fragments was identifiable. Feature 2B contained 48 percent of the bones, and the largest bones (average size = 1.74 gm), but fewer fragments were identifiable. Feature 3 had 31 percent of the fragments, smaller-sized fragments than Feature 2b (average size = 1.56 gm), but the highest percentage of the calculated minimum number of individuals (MNI).

The recovered fauna were similar to the animals and birds used in other western Chinatown sites (Gust 1984; Langenwaller 1987; Longenecker and Stapp n.d.; McEwan 1985; Simons 1984). Most bone fragments were those of pigs and chickens (958 each) resulting in an MNI of 23 pigs and 44 chickens for the sample assemblage. Bones of the pig outweigh the chicken bones resulting in more pounds of meat obtained from this mammal source (McEwan 1985). In fact, excluding cow bones, the pig bone weighs more than all the other fauna combined (pig: 2487.7 grams, other fauna: 1569.5 grams). Unequivocally, pork was the meat staple of Chinatown, Los Angeles.

Similar to the El Paso Cortez Parking Lot Site (McEwan 1984), the element distribution of pig bones revealed the use of a large percentage of foot bones. Pig feet may have been used by preference or by necessity. Even today there is a large demand for pig feet in Chinese cooking as evidenced by large trays of pig feet in the meat cases of Alhambra and Los Angeles Chinatowns (personal observation).

Only 78 of the 4506 bone fragments were those of the cow. Feature 2 had two cow bones, Feature 3 had 22; but the most, the largest, and the only machine-sawed cow bones were recovered from Feature 2B. This suggests that either Feature 2B was later in time or that there was more contact between the occupants of Feature 2B and the greater Los Angeles community.

Feature 3 had the same amount of pig bones as Feature 2B but only 22 bones from the cow. Feature 3 cow bones were from the scapula, thoracic and lumbar vertebrae, ribs, and upper leg bones



(See Appendix 3) suggesting more expensive, meatier cuts than the cowbone from Feature 2B, for example, where neck, lower leg, and foot bones are more prevalent.

There are more turkeys than chickens in Feature 3. Since chicken dominates the total poultry assemblage, the prevailing use of turkey in Feature 3 suggests a special context of use. Either a small flock of turkeys was part of the Feature 3 habitation, or turkeys, and especially turkey wings, were frequently obtained from an outside source.

Feature 2 differed from the other two features in its preferential use of the turtle for food. More individual turtles than chickens were present in Feature 2. Most of these turtles were obtained locally; however, a few bones from an imported species were scattered among the three features. In addition to food, turtle bone was of medicinal value (Goodman 1987); the carapace fragments of the non-native turtle may have been used for medical purposes.

Lizard bones, attributed to the Chinese Gecko, were identified at the Riverside Chinatown site (Goodman 1987). Mark Roeder, who analyzed the fish bone for the Los Angeles Chinatown, reports that such lizard bones were present in the sample of UPT fauna which he examined (personal communication). No lizard bones were present in the features analyzed for this report. The samples which contain lizard remains were not submitted to the Zooarchaeology Laboratory for analysis.

The modified bone has been separated from the assemblage for possible future study of the placement of cut marks, and for a division into modifications which represent butchering, versus those which divide the meat into serving portions.

The modification of bone can be used to separate Chinese food preparation methods from that of the western style. Out of 2026 modified bones, the majority (1770) of modifications are cleaver cuts which chop pig and poultry bones into one-half to three-inch sections. Perhaps the most traditional basic tool for food preparation is the Chinese cleaver. Incredibly practical, the cleaver can be used for butchering (Longenecker and Stapp 1989), chopping, slicing, cubing, or mincing, depending on how foods are placed and held. Chinese cooks become so proficient in the use of the cleaver that they can divide anything cuttable into neat, even sections of exactly the desired thickness, working faster than the eye can follow (Anderson 1988, personal observation).

The heritage of cleaver use comes from thousands of years of techniques of food preparation (Anderson 1988; Barer-Stein 1979). Since fuel in China is rare and expensive, foods were cooked in bite-sized pieces to conserve fuel; thus the cleaver became the basic kitchen implement (Barer-Stein 1979).

## CONCLUSIONS

Baher-Stein (1979:107) states that, "Traditionally, 98% of the [Chinese] diet is of plant origin, while only 2 per cent is of animal or fish origin." Unfortunately, there is no known method currently accepted which can accurately measure the ratio of meat to vegetables in a diet which is reconstructed by archaeological remains.

Animal foods ranged from 16 to 22 species for each feature, but pigs and poultry constituted the main meats. There was occasional use of local wild birds, mammals, and reptiles. The use of beef is the main departure from the traditional diet, and it plays only a minimal part in the array of animal foods. The only animal remains which were commonly recovered in other California Chinatowns but not found in the deposits of the UPT features were sheep (Gust 1984; Langenwalter 1987).

UPT faunal remains constitute primary evidence for the use of animal foods in the UPT features. The Chinese settlement in Los Angeles maintained a relatively traditional lifestyle in their diet, as far as meat utilization was concerned. They used traditional meats for the most part, and added locally available fauna. Little of their diet was imported, the exception was cuttlefish, a few turtles, and perhaps some geese. Certainly, in Los Angeles Chinatown, the faunal remains argue for the preservation of traditional Chinese foodways in the obtainment, preparation, and consumption of animal foods.

Identification of the UPT assemblage was a cooperative effort by the following zooarchaeologists of the UCLA Zooarchaeology Laboratory of the Institute of Archaeology:

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## Metro Rail Ceramics Marks

Maker	Cat. No.	Provenience	Date from	Date to	Item Name	Reference
Alcock	UPT-99	Auger BF	1839	1846	Base sherd	Godden 1964:27
Charles Allerton & Sons	UPT-183	Obs. Well	1859	1942	Base sherd	Godden 1964:30
Baker & Co.	406-91	Locus D	1839	1893	Bowl	Godden 1964:51
Xavier Basin	UPT-402	Sold. Pile			Lid	Pastron 1977:Fig 10:14
Frank Beardmore & Co.	UPT-5655	Slurry Wall	1903	1914	Mugs (3)	Godden 1964:64
Joseph Bourne & Son	UPT-430	Surface	1850		Ink bottles	Godden 1964:90
Joseph Bourne & Son	UPT-5658	Slurry Wall	1850		Ink bottle	Godden 1964:90
T. & R. Boote, Ltd.	UPT-2039	Fea 12	1890	1906	Plates	Godden 1964:84
T. & R. Boote, Ltd.	UPT-3246	Fea 29	1890	1906	Plate	Godden 1964:84
T. & R. Boote, Ltd.	UPT-3427	Fea 29	1890	1906	Bowl sherd	Godden 1964:84
T. & R. Boote, Ltd.	UPT-2186	N25/E3	1890	1906	Plate	Godden 1964:84
Sampson Bridgwood & Son, Ltd.	406-76	Locus A	1805	1887	Plate	Godden 1964:101
Buffalo China	WW-13		1901		Plate	Lehner 1988:63
Burford Brothers	UPT-5926	Fea 39	1881	1904	Plate sherd	Gates & Ormerod 1982:29a
Henry Burgess	UPT-365	AU-1	1864	1892	Plate sherd	Godden 1964:116
Henry Burgess	UPT-3052	Fea 29	1864	1892	Bowl	Godden 1964:116
E. & C. Challinor	UPT-3105	Fea 29	1862	1891	Plate sherd	Godden 1964:137; Cushion 1986:136; Praetzellis 1983:18
E. & C. Challinor	UPT-3194	Fea 29	1862	1891	Plate sherd	Godden 1964:137; Cushion 1986:136; Praetzellis 1983:18
E. & C. Challinor	UPT-431	Surface	1862	1891	Salad plate	Godden 1964:137; Cushion 1986:136; Praetzellis 1983:18
Edward Clarke	UPT-6219	Fea 41A	1880	1887	Small plate	Praetzellis 1982:21

Maker	<u>Metro Rail Ceramics Marks</u>					
	Cat. No.	Provenience	Date from	Date to	Item Name	Reference
Robert Cochran & Co.	UPT-399	Sold. Pile	1846	1918	Soup bowl	Godden 1964:158
Robert Cochran & Co.	UPT-1325	Fea 2	1846	1918	Base sherd	Godden 1964:158
The Colonial Co.	UPT-5924	Fea 39	1903	1929	Saucer	Gates & Ormerod 1982:35a
Cockson & Seddon	UPT-6744	Fea 52	1875	1877	Ale bottle	Godden 1964:159
W. & E. Corn	UPT-1830	Fea 2	1864	1904	Base sherd	Godden 1964:175
Davenport	406-296	MY & Shops	1793	1887	Plate	Godden 1964:189
Maison Doran 427	UPT-1118	AU-1	1882		Jar and lid	Morrison & Plummer 1882:425-
Maison Doran, 27 R. Grenier St Lazare, Paris 427	UPT-1611	Fea 2	1882		Lid	Morrison & Plummer 1882:425-
Dresden	UPT-995	Slurry Wall	1890	ca1900	Plate sherd	Kovel & Kovel 1986:63a
Dresden	UPT-996	Slurry Wall	1890	ca1900	Plate sherd	Kovel & Kovel 1986:63a
Dresden	UPT-997	Slurry Wall	ca1897		Plate sherd	Gates & Ormerod 1982:215d
Dunn, Bennet & Co. (Ltd.)	UPT-6778	Fea 54	1875	1907	Small plate	Kovel & Kovel 1986:134b
East End Pottery	UPT-1618	Fea 2	1894	1907	Saucer	Gates & Ormerod 1982:41d
East End Pottery	UPT-4148	Fea 23	1894	1907	Saucer	Gates & Ormerod 1982:41d
Edwards & Brown	UPT-794	AU-1	1882	1910	Jar	Godden 1964:232
John Edwards (& Co.)	UPT-7091	Fea 51	ca1880	1900	Plate	Godden 1964:231
John Edwards (& Co.)	UPT-6780	Fea 54	1847	1900	Plate	Godden 1964:231
Elverson, Sherwood and Baker Pottery	UPT-230	A-135	1879		Crock	Lehner 1988:138
Francis J. Emery	UPT-3106	Fea 29	1878	1893	Plate	Godden 1964:237

Metro Rail Ceramics Marks

<u>Maker</u>	<u>Cat. No.</u>	<u>Provenience</u>	<u>Date from</u>	<u>Date to</u>	<u>Item Name</u>	<u>Reference</u>
S. Fielding & Co., Ltd.	UPT-3249	Fea 29	1880	1917	Plates (2)	Godden 1964:247
Thomas Furnival & Sons	UPT-2263	Bag. Bsmt.	1818	1890	Soup bowl	Godden 1964:263
Thomas Furnival & Sons	UPT-3880	Fea 17A	1818	1890	Base sherd	Godden 1964:263
Thomas Furnival & Sons	UPT-3910	Fea 17A	1818	1890	Soup bowl	Godden 1964:263
Thomas Furnival & Sons	UPT-376	MY & Shops	1818	1890	Plate sherd	Godden 1964:263
Thomas Furnival & Sons	UPT-6468	Fea 51	1878	1890	Plate	Godden 1964:263
Gelle, Freres	UPT-2183	AU-1	1890	1912	Jar	Devner 1970:54
George Jones & Sons	UPT-822	Track area	1864	1917	Bowl	Godden 1964:359
Glasgow Port Dundee	UPT-526	MY & Shops	1850	1932	Ale bottle	Cushion 1976:266
Glasgow Pottery	UPT-518	AU-1	1863	1900	Base sherd	Lehner 1988:172
Goodwin Pottery Co.	UPT-3154	Fea 29	1893	1906	Oval bowl	Gates & Ormerod 1982:54d
Goodwin Pottery Co.	UPT-558	Slurry Wall	1893	1906	Plates (3)	Gates & Ormerod 1982:54d
Goodwin Pottery Co.	UPT-3143	Fea 29	1893	1906	Plate	Gates & Ormerod 1982:54d
Goodwin Pottery Co.	UPT-1000	Slurry Wall	1893	1906	Saucer	Gates & Ormerod 1982:54d
Greenwood Pottery	UPT-382	MY & Shops	ca1904		Oval bowl	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-383	MY & Shops	ca1904		Oval bowl	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-5495	Spoil dirt	ca1904		Oval bowl	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-375	MY & Shops	ca1904		Plate	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-3425	Fea 29	ca1904		Plate	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-3913	Fea 17A	ca1904		Plate	Kovel & Kovel 1986:177m

Maker	Cat. No.	Metro Rail Ceramics Marks		Date to	Item Name	Reference
		Provenience	Date from			
Greenwood Pottery	UPT-5494	Spoil dirt	ca1904		Plate	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-1972	Fea 11	ca1904		Small plate	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-3334	Fea 29	ca1904		Small bowls (2)	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-3696	Fea 20	ca1904		Small dish	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-3989	Fea 17A	ca1904		Base sherd	Kovel & Kovel 1986:177m
Greenwood Pottery	UPT-5972	Fea 39	ca1904		Plate sherd	Kovel & Kovel 1986:177m
Griffen, Smith & Hill	UPT-4515	Fea 34	1880		Saucer	Barber 1904:28
W. H. Grindley & Co.	UPT-5	Auger Backfill	1880	1960	Plate	Godden 1964:294
W. H. Grindley & Co.	UPT-6	Auger Backfill	1880	1960	Plate	Godden 1964:294
W. H. Grindley & Co.	UPT-215	Auger Backfill	1880	1960	Plates (2)	Godden 1964:294
W. H. Grindley & Co.	UPT-825	Track Area	1880		Base sherd	Godden 1964:294
W. H. Grindley & Co.	UPT-227	Auger Backfill	1880		Serving dish	Godden 1964:294
Grosvenor, Glasgow	SF-1	Locus A	1869	1926	Ale bottle	Godden 1964:295
Harker Pottery Co.	UPT-832	Track Area	1890	1910	Base sherd (2)	Gates & Ormerod 19821:82
Harker Pottery Co.	UPT-757	AU-1	1890	1910	Base sherd	Gates & Ormerod 19821:82
W. P. Hartley	UPT-3809	Fea 17A	1875		Base sherd	Cushion 1959:53
Haviland & Co.	UPT-3244	Fea 29	1864		Cup	Kovel & Kovel 1986:179
"HOLLENBECK HOTEL"	UPT-5984	Fea 39	ca1911		Rim	Los Angeles City Directory
Thomas Hughes	UPT-1251	Trench N-23	1860	1894	Plate	Godden 1964:339
Thomas Hughes	UPT-7092	Fea 51	1860	1894	Plate	Godden 1964:339

Metro Rail Ceramics Marks

<u>Maker</u>	<u>Cat. No.</u>	<u>Provenience</u>	<u>Date from</u>	<u>Date to</u>	<u>Item Name</u>	<u>Reference</u>
Keller & Guerin	UPT-3632	Surface	1788	1800s	Jar	Cushion 1965:46
Henry Kennedy & Sons (Ltd.)	UPT-5493	Spoil Dirt	1866	1929	Ale bottle	Godden 1964:369
Knowles, Taylor, and Knowles	UPT-5070	Fea 23	1890	1910	Saucer	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-5820	AU-1	1905	1929	Plate	Gates & Ormerod 1982:126a
Knowles, Taylor, and Knowles	UPT-3546	Guidewall Tr	1890	1910	Plates (2)	Gates & Ormerod 1982:127b
Knowles, Taylor, and Knowles	UPT-377	MY & Shops	1890	1910	Plate	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-3135	Fea 29	1890	1910	Plates (2)	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-3912	Fea 17A	1890	1910	Plate	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-4733	Guidewall Tr	1890	1910	Plate	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-3992	Fea 17A	1890	1907	Plate	Gates & Ormerod 1982:119c
Knowles, Taylor, and Knowles	UPT-546	Slurry Wall	1890	1910	Plates (2)	Gates & Ormerod 1982:119c
Knowles, Taylor, and Knowles	UPT-561	Slurry Wall	1890	1910	Plate	Gates & Ormerod 1982:119c
Knowles, Taylor, and Knowles	UPT-297	MY & Shops	1890	1910	Plate	Gates & Ormerod 1982:119c
Knowles, Taylor, and Knowles	UPT-3145	Fea 29	ca1904		Plate	Gates & Ormerod 1982:127b
Knowles, Taylor, and Knowles	UPT-3976	Fea 17A	1900	1920	Plate	Gates & Ormerod 1982:125c
Knowles, Taylor, and Knowles	UPT-4379	Main Pass Tun	ca1904		Butter pat	Gates & Ormerod 1982:125b
Knowles, Taylor, and Knowles	UPT-1869	Fea 3	1890	1910	Butter pat	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-4924	Sidewall Tr	1885	1895	Chamber pot	Gates & Ormerod 1982:122a
Knowles, Taylor, and Knowles	UPT-1126	Baggage Hand.	1887	1895	Bowl	Gates & Ormerod 1982:122d



Maker	Cat. No.	Metro Rail Ceramics Marks		Date to	Item Name	Reference
		Provenience	Date from			
Knowles, Taylor, and Knowles	UPT-4006	Fea 26	1885	1895	Base sherd	Gates & Ormerod 1982:122b
Knowles, Taylor, and Knowles	UPT-559	Slurry Wall	1900	1920	Small bowl	Gates & Ormerod 1982:125c
Knowles, Taylor, and Knowles	UPT-4715	Guidewall Tr	1890	1920	Small bowl	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-853	Track Area	1890	1910	Serving dish	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-994	Slurry Wall	1900	1920	Soup bowl	Gates & Ormerod 1982:125c
Knowles, Taylor, and Knowles	UPT-998	Slurry Wall	1900	1920	Soup bowl (2)	Gates & Ormerod 1982:125c
Knowles, Taylor, and Knowles	UPT-3189	Fea 29	1905	1906	Bowl	Gates & Ormerod 1982:123b
Knowles, Taylor, and Knowles	UPT-3070	Fea 29	1880	1890	Footed plate	Gates & Ormerod 1982:120c
Knowles, Taylor, and Knowles	UPT-2665	Surface	1890	1910	Creamer	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-1784	N24/E3	1890	1910	Base sherds	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-2534	N22/E2	1890	1910	Base sherd	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-1220	Trench N23	1890	1910	Oval plate(s)	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-3337	Fea 29	1890	1910	Oval plate	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-1622	Fea 2	1890	1910	Oyster bowl	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-3243	Fea 29	1900	1920	Base sherd	Gates & Ormerod 1982:125c
Knowles, Taylor, and Knowles	UPT-378	AU-1	1890	1910	Condiment	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-6123	Fea 42	1905	1928	Plate	Gates & Ormerod 1982:126a
Knowles, Taylor, and Knowles	UPT-6426	Fea 42	1890	1910	Base sherd	Gates & Ormerod 1982:125d
Knowles, Taylor, and Knowles	UPT-5925	Fea 39	1900	1920	Base sherd	Gates & Ormerod 1982:125c

Maker	Cat. No.	Metro Rail Ceramics Marks		Date to	Item Name	Reference
		Provenience	Date from			
Homer Laughlin China Co.	UPT-3454	Fea 29	1901	1915	Plate	Gates & Ormerod 1982:135a
Homer Laughlin China Co.	UPT-3136	Fea 29	1877	1900	Plate	Gates & Ormerod 1982:135c
Homer Laughlin China Co.	UPT-3248	Fea 29	1877	1900	Plates (2)	Gates & Ormerod 1982:132b
Homer Laughlin China Co.	UPT-3166	Fea 29	1877	1900	Plate	Gates & Ormerod 1982:132
Homer Laughlin China Co.	UPT-1574	Fea 1B	1901	1915	Oval plate	Gates & Ormerod 1982:135
Homer Laughlin China Co.	UPT-3911	Fea 17A	1877	1900	Small plate	Gates & Ormerod 1982:132
Homer Laughlin China Co.	UPT-6437	Fea 41A	1901	1915	Oval serving	Gates & Ormerod 1982:135a
Lewis Straus & Sons	UPT-1917	MY & Shops	1895	1917	Base sherd	Kovel & Kovel 1986:49p
Los Angeles Stoneware Co.	UPT-800	Panel 43W	1900	1903	Jug	Stewart & Costentino 1977:124
Los Angeles Stoneware Co.	UPT-5113	Fea 26	1900	1903	Crock	Stewart & Costentino 1977:124
Keller & Guerin, Lunéville	UPT-3632	Surface	ca1879	1889	Jar	Cushion 1965:46; <i>Poteries et Francaises</i> 1974:660
J. MacIntyre & Co.	UPT-3537	Baggage Hand.	1867	1894	Ale Bottle	Godden 1964:457
J. MacIntyre & Co.	UPT-6729	Fea 47 Fill	1867	1894	Ale Bottle	Godden 1964:457
Maddock & Co.	UPT-1256	Trench N23	ca1906		Base sherd	Praetzellis 1983:51
John Maddock & Sons	UPT-3146	Fea 29	ca1896		Ornamental bowl	Godden 1964:406
John Maddock & Sons	UPT-557	AU-1	ca1896		Vase	Godden 1964:406
John Maddock & Sons	UPT-4308	Fea 38	ca1896		Small bowl	Godden 1964:406
John Maddock & Sons	UPT-5656	Slurry Wall	ca1896		Vase?	Godden 1964:406

Metro Rail Ceramics Marks

<u>Maker</u>	<u>Cat. No.</u>	<u>Provenience</u>	<u>Date from</u>	<u>Date to</u>	<u>Item Name</u>	<u>Reference</u>
John Maddock & Sons (Ltd.)	UPT-6229	Fea 41	1880	1896	Small bowl	Godden 1964:406
Maling	UPT-3435	Fea 29	1800	1890	Jar	Godden 1964:408-409
Maling & Sons, Ltd.	UPT-1255	AU-1	1875	1908	Jar	Cushion 1959:67
Maw & Co. (Ltd.)	UPT-534	MY & Shops	ca1850		Jar	Godden 1964:421
Maw & Co. (Ltd.)	UPT-4171	Fea 28	ca1850		Jar	Godden 1964:421
D. E. McNicol Pottery Co.	UPT-3125	Fea 29	ca1900		Bowl sherd	Gates & Ormerod 1982:186
D. E. McNicol Pottery Co.	UPT-6025	Fea 40	1892	1910	Saucer	Gates & Ormerod 1982:186a
Alfred Meakin (Ltd.)	UPT-1619	Fea 2	ca1897		Plate	Godden 1964:425
J. & G. Meakin	UPT-517	Slurry Wall	ca1890		Plate	Godden 1964:427
J. & G. Meakin	UPT-993	Slurry Wall	ca1890		Plate	Godden 1964:427
J. & G. Meakin	UPT-3245	Fea 29	ca1890		Plate	Godden 1964:427
J. & G. Meakin	UPT-5128	Fea 30	ca1890		Plate	Godden 1964:427
J. & G. Meakin	UPT-3424	Fea 29	1851	1891	Small bowl	Praetzellis 1983:56
J. & G. Meakin	UPT-3120	Fea 29	1851	1891	Base sherd	Praetzellis 1983:56
J. & G. Meakin	UPT-1970	Fea 11	1875	1883	Base sherd	Praetzellis 1983:57
J. & G. Meakin	UPT-2037	Fea 12	ca1890		Bowl	Godden 1964:427
J. & G. Meakin	UPT-1117	Slurry Wall	ca1890		Saucer	Godden 1964:427
J. & G. Meakin	UPT-6529	Fea 51	ca1890		Bowl? sherd	Godden 1964:427
Charles Meakin	UPT-3247	Fea 29	1883	1889	Bowl	Godden 1964:426

Metro Rail Ceramics Marks

<u>Maker</u>	<u>Cat. No.</u>	<u>Provenience</u>	<u>Date from</u>	<u>Date to</u>	<u>Item Name</u>	<u>Reference</u>
Charles Meakin	UPT-1252	Trench N23	1883	1889	Saucer	Godden 1964:426
Charles Meakin	UPT-1915	Fea 3	1883	1889	Saucer	Godden 1964:426
Charles Meakin	UPT-4511	Fea 35	> 1891		Bowl	Godden 1964:11, 426
Charles Meakin	UPT-6828	Fea 44	1883	1889	Plate	Godden 1964:426
Charles Meakin	UPT-7008	Fea 57	1883	1889	Saucer	Godden 1964:426
Mellor, Taylor & Co.	UPT-1001	Slurry Wall	1880	1904	Oval bowl	Godden 1964:432
E. Merrill Co.	UPT-1034	A-112	1833	1900	Master ink	Stewart & Costentino 1977:124
Murry & Co., Glasgow	UPT-4876	A-130	1870	1898	Ale bottle	Godden 1964:455
New Wharf Pottery Co.	UPT-3909	Fea 17A	1878	1894	Base sherd	Godden 1964:467
Peoria Pottery	UPT-6754	General	1873	1902	Crock	Lehner 1988:341
Peoria Pottery	UPT-7077	Fea 51	1867	1887	Wax Sealer Fruit Jar	Barber 1976:161; Toulouse 1969:339
Petrus Regout	UPT-3390	Fea 29	1836	1931+	Plate	Kovel & Kovel 1986:127c
Petrus Regout	UPT-2369	Sewer Trench	1836	1931+	Saucer	Kovel & Kovel 1986:127c
Petrus Regout	UPT-676	Sewer Trench	1836	1931+	Bowl	Kovel & Kovel 1986:127c
Petrus Regout	UPT-5973	Fea 39	1836	1931+	Cup	Kovel & Kovel 1986:127c
Pioneer Pottery	UPT-3073	Fea 29	1884	1891	Plate	Gates & Ormerod 1982:201
Pioneer Pottery	UPT-4378	Main Pas. Tunnel	1884	1891	Plate	Gates & Ormerod 1982:201
Pioneer Pottery	UPT-1114	Slurry Wall	1884	1891	Chamber pot	Gates & Ormerod 1982:201
Pioneer Pottery	UPT-6470	Fea 51	1884	1891	Plate	Gates & Ormerod 1982:201a

Maker	Metro Rail Ceramics Marks			Date to	Item Name	Reference
	Cat. No.	Provenience	Date from			
Port Dundas Pottery Co., Ltd.	UPT-370	MY & Shops	ca1850	1932	Ale bottle	Godden 1964:504
Port Dundas Pottery Co., Ltd.	UPT-526	Surface	ca1850	1932	Ale bottle	Godden 1964:504
Powell & Bishop	UPT-438	Slurry Wall	1867	1878	Base sherd	Praetzelis 1983:69
Sarreguemines	UPT-4262	Fea 32	> 1770		Jar	Cushion 1965:90
Sarreguemines	UPT-4285	Fea 32	> 1770		Jar	Cushion 1965:90
Arthur Schiller & Son (Distributor for Weiden)	UPT-429	Surface A-115	1929		Cup	Information from base mark
Smith, Ford & Jones (Rd. No. 142383)	UPT-3121	Fea 29	1889	1895	Plate	Godden 1964:528, 581
Smith, Ford & Jones (Rd. No. 142383)	UPT-7260	A-136	1889	1895	Plates (2)	Godden 1964:528, 581
Syracuse China Co.	406-291	MY & Shops	> 1885		Serving plate	Lehner 1988:455
Thomas Shirley Clyde Pottery Co. (?)	UPT-6469	Fea 51	ca1850	1860	Bowl	Godden 1964:574, 154
C. C. Thompson Pottery	UPT-3703	Fea 20	1890	1908	Base sherd	Gates & Ormerod 1982:289d
C. C. Thompson Pottery	UPT-1115	AU-1	1890	1910	Saucer	Gates & Ormerod 1982:288
C. C. Thompson Pottery	UPT-6645	Fea 51	1883	1890	Base sherd	Gates & Ormerod 1982:288
J. B. Thorn, Chemist, London, The Tarrant Co. Sole Owners, New York, U.S.A.	UPT-6387	Fea 43	1906	1925	Jar	Fike 1987:48
Vennard & Co.	UPT-2973	Fea 29	1887	1895	Jar	Fike 1987:245
Wallace China Co.	UPT-3722	Fea 16	1931	1954	Bowl	Lehner 1988:498
Waterloo Pottery	UPT-1763	Fea 12	1890	1906	Plate	Godden 1964:84
J. H. Weatherby & Sons	UPT-6640	Fea 49	> 1891		Saucer	Godden 1964:653
Weiden (Distributed by Schiller)	UPT-429	A-115	1881+		Cup	Cushion 1962:158
A. J. Wilkinson, Ltd.	UPT-1859	Fea 3	ca1896		Bowl	Godden 1964:672



Metro Rail Ceramics Marks

<u>Maker</u>	<u>Cat. No.</u>	<u>Provenience</u>	<u>Date from</u>	<u>Date to</u>	<u>Item Name</u>	<u>Reference</u>
A. J. Wilkinson, Ltd.	UPT-3104	Fea 29	ca1896		Bowl	Godden 1964:672
A. J. Wilkinson, Ltd.	UPT-3108	Fea 29	ca1896		Plate	Godden 1964:672
A. J. Wilkinson, Ltd.	406-295	MY & Shops	1885	1896	Saucer	Godden 1964:672
A. J. Wilkinson, Ltd.	406-326	Obs. Well	1896+		Base sherd	Godden 1964:672
Willets Manufacturing Co.	UPT-6126	Fea 42	1879	1909	Plate sherd	Lehner 1988:522
F. Winkle & Co.	UPT-3285	Fea 29	1890	1910	Bowl	Godden 1964:678
F. Winkle & Co., Rd. No. 102018	UPT-3122	Fea 29	1888		Base sherd	Godden 1964:528, 678
Wood & Hawthorne	UPT-1991	N21/E1	1882	1887	Base sherd	Godden 1964:687
Wood & Son	UPT-3058	Fea 29	1891	1907	Bowl	Godden 1964:689
Wood & Son	UPT-3119	Fea 29	1891	1907	Bowl	Godden 1964:689
John Wyllie & Son	UPT-3386	Fea 29	1875	1888	Base sherd	Gates & Ormerod 1982:319b
John Wyllie & Son	UPT-941	Baggage Base. Area	1875	1888	Plate	Gates & Ormerod 1982:319b
Rd. No. 8749	406-298	MY & Shops	1884		Server	Godden 1964:527
Rd. No. 1058	UPT-2842	Fea 36	1884		Butter pat	Godden 1964:527



APPENDIX VI

ELECTRICAL PORCELAIN

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Feature 29	Intact Nail Knob	3102	1	"Brunt" top stamp	1891-1911	Tod 1977:73-75
"	"	5472	1	"Brunt" top stamp	1891-1911	Tod 1977:73-75
"	"	5481	1			
"	"	3103	1			
"	"	5474	4			
"	Nail Knob Base	5474	2			
"	"	3022	1			
"	"	3023	1			
"	Nail Knob Collar	5474	2			
"	"	5471	1	"Thomas" top stamp	1884	Tod 1977:96
"	Nail Knob Base Fragment	5474	2			
"	Wall Tube Fragment	5470	1	"Thomas"	1884	Tod 1977:96
"	"	5483	1		Pre-1913	Tod 1977:78,83
"	Box Type Rosette	5473	1	"Pat. Aug. 4 90"	1890	

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
"	Box Type Rosette Fragment	5475	1	"Arrow" on back	Other	Tod 1977:104
"	Fused Rosettes	5478	3	"T.T.P.Co."	1894-1937	Tod 1977:97
"	Rosette Bases	5478	5	"Paiste Co. Ht, Phila, Pa" Wire		Tod 1977:111
"	Cutout Base	5478	1	"Gordon" 30 AMP		Tod 1977: 108
Feature 30	Nail Knob Collar	5150	1			
"	Wall Tube	5147	1			
"	"	5146	1			
Feature 30	Wall Tube	5148	1			
"	Rosette Base	5151	1			
"	Rotary Switch	5167	1	"H19"		
Trench N23	Intact Nail Knob	1211	3			Tod 1977:19
"	"	1212	1			
"	"	1267	1			
"	"	1213	1	"Brunt" top stamp w/nail	1891-1911	Tod 1977:73-75
"	"	1215	1			
"	Wall Tube	1266	1			
"	"	1269	1			
"	Insulator Fragment	1268	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Feature 18	Intact Nail Knob	4068	1			
"	"	4067	1			
"	"	4068	1			
"	Fused Rosette	4066	1	"Thomas" "The Perkins Co."	"Pat. Jul 2, 1901"	Tod 1977:96
"	"	3742	1			
Feature 16	Intact Nail Knob	4339	1			
Feature 17 Surface	"	4889	1	"U"		Tod 1977:98,100
"	Fused Rosette	4890	1	"July 20th"		
Feature 17 Level 1	"	4955	1	"Brunt" top stamp	1881	Tod 1977:73-75
Feature 17 Level 1	Nail Knob	4955	1			
"	Wall Tube	4953	5	"E.P.Co."	1895	Tod 1977:79,80
"	"	4953	2	"A.I. & M. Co."	pre-1904	Tod 1977:70
"	Box-type Rosette	4958	1		½ see Fea. 29	
"	Fuses	4956	2	"K"		No Reference
Feature 17 Below Cement	Intact Nail Knob	4936	1	"U"		
Feature 28 Str. A	"	4183	1			
Guide Wall Trench	"	4157	2			



Provenience	Description	Catalog Number	Units	Markings	Date	Reference
N24/E24 Level B	"	2450	1			
Feature 24	"	3742	1			
"	Rosette Base	3743	1			
"	Insulator Fragment	3745	1			
Feature 24 Overburden	Nail Knob Base	5104	1			Tod 1977:55
"	Battery Bushing	5104	1			
"	Fused Rosette	4758	1			
Feature 35	"	4817	1			
"	Rotary Switch Base	4820	1			
Feature 38	"	4313	1	"A.M.C."		
"	Fuse	4314	1			
Feature 21	"	4126	1			
"	Intact Nail Knob	4126	3			
"	Nail Knob Collar	4126	1			
A135 Level A to Old Rd N21 & N22/E2	"	2505	1	"Brunt" top stamp	1881-1911	Tod 1977:73-74
N22/E2 Level B	"	2523	1			
Sewer Trench N19 & N20/E2 & E3	Nail Knob Fragment	2463	1			
Sidewall Trench	Nail Knob Collar	4922	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Surface Collection	Wall Tube	5327	1	"E.P. Co."	1895	Tod 1977:79,80
"	Cutout Base	5716	1	"O AMP 125 V"		
Feature 22 Str. B	"	5032	1	"E.P. Co."	1895	"
N27/E1 Level B	"	2635	1			
Feature 28 Str. A	"	4184	1			
Main Passenger Tunnel Trash Pit	"	5362	1	"Brunt"	1891-1911	Tod 1977:73-74
Unit 2 Level 3 40-60 cm	"	4662	1			
N25/E2 Level B	Wall Tube Fragment	2753	5			
N19/E3 Level A	"	5517	1	"A.P.Co."	1900	Tod 1977:71,72
"	Hole Bushing	5518	1			
N19/E2 Level B	Fused Rosette	2817	1	"1897"	1897	
Feature 32	"	5187	1			
Feature 32 on top	Rotary Switch	5232	1			
Trash Pit	"	4861	1	"E" with arrow through the letter		Tod 1977:107
Feature 20	Wall Tube	3707	1			
"	"	3708	1			
Track Area West End	Intact Nail Knob	5765	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Slurry Wall--G&A Excavation site	Rosette Base	5496	1			
Feature 2 Level B	Intact Nail Knob	1331	1			
N24/E3 Level B	"	1789	1			
"	"	1791	1			
"	"	1790	1	"Brunt"	1891-1911	Tod 1977:73-74
"	Wire Cleat	1788	1	"Simplest", "Pat.", "May 14, 95"	1895	
A130 Soldier Pile Privy	"	401	1	"U"		Tod 1977:98,100
A130 Slurry Area Under Caltrans Busway Instrument	"	439	1	"A.I. & M. Co."	pre-1904	Tod 1977:70
A141 II General Collection	"	793	1			
Baggage Basement Area Trench Excavation	"	945	1	"U" Bottom Stamp	1891-1911	
Trench Excavation Track Area West End	Wall Tube	944	1			
General Collection E1 + 275.0	"	909	1	"H.F." bottom stamp	1902	Tod 1977:85

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Main Yd. & Shops Utility Trench Rd. C	"	388	1	Bottom chamfer		
"	Wall Tube	389	1			
Track Area West End 1x1 Meter Unit 1 Level 4	"	384	1	"A.P.C."	1900	Tod 1977:71,72
Feature 2 N27/E2	"	1844	1			
Drilling Trench e. Wall 50cm BS N24/E2 Level A	End Outlet Bushing	2800	1	"Freeman Electric Co."	pre-1930	Tod 1977:82,108
"	"	1268	1	"	"	"
A-115 Surface Collection	Unknown	433	1			
A-130 1st St. Bridge	Pin Insulator	959	1	"Thomas"	1907-1920	Tod 1976:137-9
A-115/A-130 around 1st St. Bridge	"	508	1	"Petticoat "H.G. Co. Patent May 2, 1893	1893	No Reference
Macy & Vignes	2" Solid Knob	WW-2	1		1890+	
"	Light Sockets	WW-46	2			
"	Electric Ring (?)	WW-47	1			
Isolate 6	Wall Tube	406-94	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Gas Relocation Trench 0-5cm	"	406-194	1			
Feature 2	Spark Plug	1641	1	"Champion/x Reg. US Pat. Off."		
AU-1	Insulator	978	1			
"	Wall Tube	5836	1	"Brunt Liverpool, Ohio"	1891-1895	Tod 1977:73,74
"	Intact Nail Knob	"	1	"	"	"
Feature 39 CSC #10 Trash Pit	Intact Nail Knob (with nail)	5865	5			
"	Unglazed Wall Tube	6007	1			
"	Brown Wall Tube	6008	1			
"	Unknown	6180	1	"B 15 A 110 V"		
Feature 41A CSC #10	Intact Nail Knob	6222	1			
Feature 42 CSC #10 Tr. #3	Intact Nail Knob (1 1/2" dia.)	6296	3			
"	"	6297	1			
"	Wall Tube	6298	1			
Feature 43	Insulator with rod-glass, (aqua)	6392	1	"KG. Col Patent Mar 3, 1893 Pettycoat"		No Reference
Feature 43	Intact Nail Knob	6401	2			



Provenience	Description	Catalog Number	Units	Markings	Date	Reference
"	Unknown	6402	1	"G.P. Co."	1913	Tod 1977:83
Feature 43	"	6403	1			
Feature 39, Esc #10, Surface General	Intact Nail Knob	6519	1			
South of Feature 43 (Backhoe)	"	6570	1			
"	Unknown	6571	1			
"	Split Nail Knob	6572	1			
Feature 56	Intact Nail Knob (1 1/8" dia.)	6598	1	"Maccomb"		Tod 1977:110
"	Intact Nail Knob (3/4" dia.)	6599	1			
Feature 49	Insulator	6612	1			
"	Intact Nail Knob	6613	1	"VA7 8-3-20"		
"	"	6614	2			
Feature 50 Water Main	Wall Tube	6650	1			
Feature 48 Between Surface & Brick Layers	Insulator (3" dia.)	6668	1			
Feature 48 Between Surface & Brick Layers	Intact Nail Knob	6669	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
"	Tan Wall Tube	6670	1			
Feature 47 Clean-off	Intact Wall Tube (5 5/8" long)	6710	1	"Thomas"	1897-1957	Tod 1977:96
"	Unknown (Cleat?)	6711	1	"Illinois Electric Porcelain Company"	1910- current	Tod:86,109
Feature 47 Clean-off	Intact Nail Knob (2 1/2" long)	6708	1			
Feature 43, Tr. 4 Clean-off	"	6734	1	"Brunt"	1891-1911	Tod 1977:73-74
Feature 53 Material Recovered From Rubble layer over Brick Footing	"	6757	1	"E" East Liverpool Electrical Porcelain Co.	1903-1911	Tod 1977:79
"	Wall Tube	6760	1			
Feature 44 Unit 2, Level 4 No. Brick Wall	Glass Insulator (aqua)	6776	1	"W. York"		No Reference
West Entrance, Trench 4, General	Intact Nail Knob	6800	1			
Feature 44, Unit 2, Level 4 No. Brick Wall	Polished, Granite Insulator (?)	6809	1	"T"	1892-1957	Tod 1977:96
"	Wall Tube	6810	1			
"	Intact Nail Knob	6812	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Feature 44 Trench #5	Wall Tube	6816	1			
"	Intact Nail Knob	6819	1			
Feature 44 Trench #5	"	6820	1			
Feature 46	Insulator	6830	1	"P & S ..."	1890	Tod 1977:90-112
"	"	6831	1	"COMB"		No Reference
Feature 44, Unit 1 No. Brick Wall	Wall Tube	6840	1			
Feature 44 Trench 5	Intact Nail Knob	6846	1	"B & D"		Tod 1977:104
"	Wall Tube	6847	1	"B & D"		
Feature 44, Unit 1 Level 3 No. Brick Wall	Intact Nail Knob	887	1			
Feature 44, Unit 2, Level 3	Wall Tube	6907	1			
"	Intact Nail Knob	6907	1			
Feature 43	"	6929	1			
West Entrance Trench #3	"	6951	1			
Feature 52	Unglazed Wall Tube	6980	1			
Feature 58	Wall Tube	7014	1			

Provenience	Description	Catalog Number	Units	Markings	Date	Reference
Discard Sheet:						
Feature 58	Nail Knob Insulator		1			
Feature 41A	Unknown		1			
Feature 57	Nail Knob Insulator		1			
Feature 39	"		1			
"	Wall Tube		2			
Feature 42	Nail Knob Insulator		1			

APPENDIX VII. MARKS ON GLASS

Key to Metro Rail Proveniences

AU = Analytical Unit, a combination of specific proveniences for analytical purposes. The analytical units for the purposes of this report include:

**AU-1** = A-112, A-115, A-130, A-135, A-136, A-141, A-145, A-146, F-17, F-17A, Surface, Trenches, Auger/Ramp, Auger 8K-9C, Backhoe Trench, Baggage Handling, Guidewall (trench), MPT (Metro Rail Passenger Terminal), all N\*/E\* units, Observation Well, Trench TP3, Trench Area, Track Area, Sidewall Trench, Drop Shaft, Retaining Wall, No Location.

**AU-2** = F-4, F-6, F-8, F-10, F-15.

**AU-5** = F-44, F-45, F-46, F-50.

**AU-3** = F-26, F-28, F-34, F-35, F-36, F-37.

**AU-6** = F-51, F-55.

**AU-4** = F-19, F-20, F-21, F-23, F-24.

**AU-7** = F-2, F-7A.

Specific proveniences (Fea=Feature) are listed below; the designation or abbreviation under which they are referenced is indicated in bold.

Fea 1		Fea 31		A-115	<b>AU-1</b>
Fea 2	<b>AU-7</b>	Fea 32		A-130	<b>AU-1</b>
Fea 3		Fea 33		A-135	<b>AU-1</b>
Fea 4	<b>AU-2</b>	Fea 34	<b>AU-3</b>	A-136	<b>AU-1</b>
Fea 5		Fea 35	<b>AU-3</b>	A-141	<b>AU-1</b>
Fea 6	<b>AU-2</b>	Fea 36	<b>AU-3</b>	A-145	<b>AU-1</b>
Fea 7	<b>AU-7</b>	Fea 37	<b>AU-3</b>	A-146	<b>AU-1</b>
Fea 8	<b>AU-2</b>	Fea 38		Auger 8K-9C	<b>AU-1</b>
Fea 9		Fea 39		Auger/Ramp	<b>AU-1</b>
Fea 10	<b>AU-2</b>	Fea 40		Backhoe Trench	<b>AU-1</b>
Fea 11		Fea 41		Baggage Handling	<b>AU-1</b>
Fea 12		Fea 42		Drop Shaft	<b>AU-1</b>
Fea 13		Fea 43		Guidewall Trench	<b>AU-1</b>
Fea 14		Fea 44	<b>AU-5</b>	Locus A	<b>SSF</b>
Fea 15	<b>AU-2</b>	Fea 45	<b>AU-5</b>	MPT	<b>AU-1</b>
Fea 16		Fea 46	<b>AU-5</b>	Controlled Units	<b>AU-1</b>
Fea 17	<b>AU-1</b>	Fea 47		No Location	<b>AU-1</b>
Fea 18		Fea 48		Observation Well	<b>AU-1</b>
Fea 19	<b>AU-4</b>	Fea 49		Retaining Wall	<b>AU-1</b>
Fea 20	<b>AU-4</b>	Fea 50	<b>AU-5</b>	Sidewall Trench	<b>AU-1</b>
Fea 21	<b>AU-4</b>	Fea 51	<b>AU-6</b>	South Santa Fe	<b>SSF</b>
Fea 22		Fea 52		Track Area	<b>AU-1</b>
Fea 23	<b>AU-4</b>	Fea 53		Trench Area	<b>AU-1</b>
Fea 24	<b>AU-4</b>	Fea 54		Trench TP3	<b>AU-1</b>
Fea 25		Fea 55	<b>AU-6</b>	402 (Fifth/Hill)	<b>FH</b>
Fea 26	<b>AU-3</b>	Fea 56		404 (Wilshire/Alvarado)	<b>WA</b>
Fea 27		Fea 57		406 (MRT)	<b>AU-1</b>
Fea 28	<b>AU-3</b>	Fea 58		West End Trenches	<b>WET</b>
Fea 29		Fea 59		Water Works (Macy/Vignes)	<b>MV</b>
Fea 30		A-112	<b>AU-1</b>	Emergency Staircase #10	<b>ESC #10</b>

Technology Key: ABM = Automatic Bottle Machine; (S)ABM = Semi-Automatic Bottle Machine;



## METRO RAIL GLASS MARKS

PAGE: 1

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
MV	1		(mark)	Federal Glass Co.	ABM	>1944	Tou 72:192
AU-1	1		(mark)	Glass Containers Corp	ABM	>1945	Tou 72:220
FH	1		(mark)	Glass Containers Corp	ABM	>1945	Tou 72:220
MV	3		(mark)	Glass Containers Corp	ABM	>1945	Tou 72:220
Fea 41	1		(mark)	Hazel-Atlas Glass Co.		1920-1964	Tou 71:239
AU-1	1		(mark)	Latchford-Marble Glass	ABM	1939-1957	Tou 72:332
MV	1		(mark)	Latchford-Marble Glass	ABM	1939-1957	Tou 72:332
MV	1		(mark)	Maywood Glass Co.	ABM	1958	Tou 72:357
MV	3		(mark)	Owens Illinois (L.A.)	ABM	>1932	Tou 72:395, 403
Fea 39	1		...LEY & CO/...NTED/...TH 1896/...G/...NEW YORK			>1896	
MV	1		ARAKELIAN INC/US PAT 123,505/159/LM/651/...ERA, CAL.	Latchford Marble Glass Co.	Cup	>1940	Tou 71:332
Fea 39	1		ARMOUR & CO/PACKERS/CHICAGO (small milk glass jar)			>1880	Dev 68:9; Fik 87:51; Zum 80:29-31
AU-1	2		B	Brockway		>1925	Tou 71:59
Fea 47	1		C. L. G. Co.	Carr-Lowrey Glass Co., Baltimore	Cup	1900-1920	Tou 71:134
AU-1	2		C. S. & CO. LTD	Cannington Shaw & Co.		1875-1913	Tou 71:147
Fea 18	1		C.E.W.&CO (not identified)		Post		
AU-1	1		CL (monogram mark)	Carr-Lowrey Glass Co., Baltimore		1920-1963	Tou 71:134-135
Fea 57	1		CUDAHY SPECIAL/L-D	The Cudahy Packing Co.		>1890	Zum 80:100
AU-1	1		D. O. C.	D. O. Cunningham Glass Co.	Post	1907-1937	Tou 71:163-164
Fea 29	1		DEPO(S)E (S is backwards, not identified)		Cup		
MV	1		Duraglas	Owens Illinois Glass Co	ABM	>1940	Tou 72:170
AU-1	1		EB & Co	Edgar F. Breffit & Co.		1832-1913	Tou 71:175
AU-1	1		H	Holt Glass Works		1893-1906	Tou 71:231
Fea 27	1		H. HEYE/GLASFABRIK NEINBURG	Hermann Heye Glasfabrik, Bremen,		1880-1936	Tou 71:238
Fea 29	1		H. HEYE/GLASFABRIK NEINBURG	Hermann Heye Glasfabrik, Bremen,			Tou 71:238
AU-1	1		HA (monogram)	Hazel-Atlas Glass Co.		1920-1964	Tou 71:239
MV	3		HA (monogram)				
AU-1	1		I (in diamond)	Illinois Glass Co.		1916-1929	Tou 71:264
MV	1		I (in diamond)	Illinois Glass Co.		1916-1929	Tou 71:264
AU-5	1		I (in diamond)//4 OZ//MADE IN U. S. A.	Illinois Glass Co.		1916-1929	Tou 71:264
AU-7	1		IGCo (in diamond)	Illinois Glass Co.		1916-1929	Tou 71:264
Fea 29	2		IGCo (in diamond)	Illinois Glass Co.		1900-1916	Tou 71:264
AU-1	1		IPG Co (in diamond)	Illinois Pacific Glass Co.		1902-1930	Tou 71:268-270
AU-1	1		L (not identified)		Post		
AU-1	2		LB (monogram)	Long Beach Glass Co.		1920-1933	Tou 71:318
AU-1	1		LOANED BY/AR.WINARICK//A.R. WINARICK/N.Y. (on top)		ABM	1929-1930	Fik 87:186
AU-1	2		M	Maryland Glass Corp.		1907-1916	Tou 71:339
AU-3	1		MAGIC/INTRODUCTION/Co/NEW YORK (not identified)		Cup		

## METRO RAIL GLASS MARKS

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 16	2		MB&GCo	Massillon Bottle & Glass Co.	Post	1900-1904	Tou 71:348
AU-1	1		MB&GCo	Massillon Bottle & Glass Co.	Post	1900-1904	Tou 71:348
Fea 27	1		MB&GCo	Massillon Bottle & Glass Co.	Post	1900-1904	Tou 71:348
Fea 29	3		MCC (on base)	Wm. McCully, Pittsburgh		1832-1886	Tou 71:351
Fea 30	1		MCC (on base)	Wm. McCully, Pittsburgh		1832-1886	Tou 71:351
AU-1	1		MCC (on base)	Wm. McCully, Pittsburgh		1832-1886	Tou 71:351
Fea 40	1		MONARCH	Poss. Monarch Glass Co.	HT	1925?	Tou 71:457 Noted as in business during 1925
AU-1	1		N & Co	Nuttall & Co., Eng.		172-1913	Tou 71:380
Fea 11	1		N (in circle)	Obear Nestor	HT, cup	1894-1915	Tou 71:373
Fea 29	1		N (in circle)	Obear Nestor	HT, cup	1894-1915	Tou 71:373
AU-3	1		N (in circle)	Obear Nestor	HT, cup	1894-1915	Tou 71:373
AU-1	3		N (in circle)	Obear Nestor	HT, cup	1894-1915	Tou 71:373
AU-1	1		NB/12	North British Bottle Mfg. Co., LTD		1903-1937	Tou 71:377
AU-1	2		O (in square)	Owens Bottle Co.		1911-1929	Tou 71:393
AU-1	3		OI (monogram in diamond)	Owens Illinois Glass Co.		1929-1954	Tou 71:395, 403
MV	8		OI (monogram in diamond)	Owens Illinois Glass Co.		1929-1954	Tou 71:395, 403
Fea 42	1		PAT JULY 6 1897			>1897	
AU-5	1		PAT NOV 26 67		Post	>1867	
SSF	1		PAT.NOV.26.67./PAT FEB 4 73/A 15		Post	>1873	
Fea 29	2		PURITAS (on base) LOS ANGELES CAL...SOLD (around base)		Cup		
AU-1	1		PURITAS (on base) LOS ANGELES CAL...SOLD (around base)				
AU-1	4		R & Co	Roth & Company		1879-1888	Tou 71:438
AU-4	1		R & Co	Roth & Company		1879-1888	Tou 71:438
Fea 27	1		R & Co	Roth & Company		1879-1900	Tou 71:438
Fea 29	1		R & Co	Roth & Company		1879-1888	Tou 71:438
Fea 42	1		REDDINGTON & Co./S. F.			1877-1893	W&W 69:90, 91
Fea 39	1		RESINOL/BALTOND/CHEMICAL CO.			>1897	Fike 987:75; Dev 68:80
AU-1	1		ROOT	Root Glass Co.		1901-1932	Tou 71:445
AU-1	1		SALVA-CEA/THE BRANBRETH CO. N.Y.		(S)ABM	>1881	Dev 68:16
Fea 42	2		SALVA-CEA/THE BRANBRETH CO. N.Y.		(S)ABM	>1881	Dev 68:16
Fea 42	1		SB&GCo	Streator Bottle and Glass Co.		1881-1905	Tou 71:461
Fea 49	1		SCHLOTTERBECK & FOSSCO/PORTLAND, ME			>1887	Fik 87:76
Fea 39	1		SP.../SEWING/MACHINE/BICYCLE/OIL/... (paper label)		Cup		
AU-1	1		THE CHAS. H. PHILLIPS/CHEMICAL CO./NEW YORK			>1887	Fik 87:73
AU-1	1		THE CUDAHY PACKING CO/OMAHA (small milk glass jar)	The Cudahy Packing Co.		>1890	Zum 80:100

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## METRO RAIL GLASS MARKS

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 39	1		THE CUDAHY PACKING CO/U. S. A. (small milk glass jar)	The Cudahy Packing Co.		>1890	Zum 80:100
Fea 29	1		THE CUDAHY PACKING CO/U. S. A./PAT JULY 11 1893 (small milk glass jar)	The Cudahy Packing Co.		>1890	Zum 80:100
Fea 42	1		THE PALISADE/MFG. CO./YONKERS, N. Y.				Fik 87:143 (1929-1942 refs for Borolyptol)
AU-1	1		W F & S	William Franzen & Son		1900-1929	Tou 71:536
AU-1	1		W F & S/MIL	William Franzen & Son	Post	1900-1929	Tou 71:536
Fea 39	1		W. T. Co./1212/PAT. JUNE 21ST, 1892 (milk glass jar)	Whitall-Tatum & Co.		1837-1935	Tou 71:544
AU-1	1		W.M.S.CO./SAN FRANCISCO	possibly Whiting M. S. & Co.		1869-1874?	McG 67:38
Fea 42	1		W.T. & Co./U. S. A.	Whitall-Tatum & Co.		1837-1935	Tou 71:544
WET	1		WHITEMORE/BOSTON/U. S. A.				Fik 87:231 has a Whitemore in Essex,
AU-1	2		Wm.MCC CO (square bottle)	Wm. McCully & Co.	Post	1841-1886	Tou 71:351
Fea 39	1		WOODBURY GLASS WORKS/WOODBURY N.J.	Woodbury Glass Works, Woodbury, NJ		1892-1896+	Tou 71:539
AU-1	1		WOOSTER	Wooster Glass Co.	Post	1900-1904	Tou 71:543
AU-1	1		WT (monogram in triangle)	Whitall-Tatum & Co.		1935-1938	Tou 71:544
AU-4	2		WT&Co	Whitall-Tatum & Co.	Cup	1837-1935	Tou 71:544
Fea 29	2		WT&Co	Whitall-Tatum & Co.	Cup	1837-1935	Tou 71:544
Fea 32	1		WT&Co	Whitall-Tatum & Co.	Cup	1837-1935	Tou 71:544
AU-1	4		WT&Co	Whitall-Tatum & Co.	Cup	1837-1935	Tou 71:544
AU-1	1	Adhesive	CAULK'S/DIAMOND/CEMENT		HT, cup	1877-1920	Fik 87:158
Fea 41	1	Adhesive	CAULK'S/PETROID CEMENT/IMPROVED			>1877	Fik 87:158
Fea 29	1	Beer	... BREWING .../SAN DIEGO, CAL//... NOT SOLD		Post		
Fea 18	1	Beer	424 FULTON STREET/NATIONAL BOTTLING WORKS/(eagle)/S.. F., CAL./THIS BOTTLE NOT			1896-1902	W&W 68:174; BFG 86:32
AU-1	1	Beer	A B CO	American Bottle Co.		1905-1916	Tou 71:30
AU-5	1	Beer	A.B.G.M.CO./F1	Adolphus Busch Glass Manufacturing Co.	Cup	1886-1928	Tou 71:26
AU-1	3	Beer	ABGMCo	Adolphus Busch Glass Manufacturing Co.	Post	1886-1928	Tou 71:26
Fea 1	2	Beer	Adolphus Busch	Adolphus Busch Glass Manufacturing Co.	Post	1904-1907	Tou 71:26
Fea 29	1	Beer	Adolphus Busch	Adolphus Busch Glass Manufacturing Co.	Post	1904-1907	Tou 71:26
AU-1	1	Beer	CW & Co		dk. olive	<1900	Tou 71:152 (no specific ID, found on Guinness
SSF	1	Beer	CW & Co		dk. olive	<1900	Tou 71:152 (no specific ID, found on Guinness
AU-1	1	Beer	F H G W	Frederick Hampson Glass Works, England	Post	1880-1900	Tou 71:202
AU-7	1	Beer	F. A. HEIM/LOS ANGELES/BOTTLING WORKS//H.B.W. (base; 1834/56 N. Main St.)		Cup	1901-1903	Zum 80:198-199; BFG 84:23; 1992
Fea 29	1	Beer	F. A. HEIM/LOS ANGELES/BOTTLING WORKS//H.B.W. (base; 1834/56 N. Main St.)		Cup	1901-1903	Zum 80:198-199; BFG 84:23; 1992
Fea 33	1	Beer	F. A. HEIM/LOS ANGELES/BOTTLING WORKS//H.B.W. (base; 1834/56 N. Main St.)		Cup	1901-1903	Zum 80:198-199; BFG 84:23; 1992

METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-1	1	Beer	F. A. HEIM/LOS ANGELES/BOTTLING WORKS//H.B.W. (base; 1834/56 N. Main St.)		Cup	1901-1903	Zum 80:198-199; BFG 84:23; 1992
Fea 29	1	Beer	HEIM'S (on base; 1834/56 N. Main St., L. A.)		HT, post	1901-1903	BFG 84:23; 1992
AU-1	1	Beer	HEIM'S (on base; 1834/56 N. Main St., L. A.)		Cup	1901-1903	BFG 84:23; 1992
Fea 29	1	Beer	JK/W	John Kilner & Sons, England		1844-1930	Tou 71:279
Fea 29	1	Beer	M B & CO (base)	Massillon Bottle & Glass Co., OH	HT, post	1900-1904	Tou 71:348
AU-1	1	Beer	MAIER & ZOBELEIN/BREWERY/LOS ANGELES, CAL.		HT, cup	1882-1910	M&M 73:37; BFG 84:23; LAD 10
ESC #10	1	Beer	N & C CO/3175	Nuttal and Co.	HA	1872-1913	Tou 71:380
AU-1	1	Beer	NBBG CO.	North Baltimore Bottle Glass Co.	HT, cup	1885-1920	Tou 71:379
AU-1	2	Beer	PAT 85/R & CO./14 (base) (not identified, not considered to be Roth & Co.)		Cup		
AU-1	1	Beer	PAT 85/R & CO./14 (base) (not identified, not considered to be Roth & Co.)		HT, post	1870-1920	
AU-1	3	Beer	PATD. AUG. 24./1886 (on base)		Post	1896-1920	(based on prohibition)
AU-1	1	Beer	PC (inside triangle)	Pacific Coast Glass Co.		1925-1930	Tou 71:414
Fea 29	1	Beer	R & C ...	Prob. export beer, may be Roth & Co.	Post	1880-1900	Tou 71:438-439
Fea 38	1	Beer	R & C ...	Prob. export beer, may be Roth & Co.	Post	1880-1900	Tou 71:438-439
AU-1	4	Beer	S (inside star)	Southern Glass Co.		1917-1931	Tou 71:457
AU-7	1	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
AU-1	2	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
AU-4	1	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
Fea 29	9	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
Fea 30	1	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
AU-3	1	Beer	SB&GCo	Streator Bottle and Glass Co.	Post	1881-1905	Tou 71:461
Fea 1	5	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
AU-2	4	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
AU-7	2	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 3	1	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 11	2	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 12	2	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
AU-1	7	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
AU-3	1	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 27	2	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 29	4	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 30	5	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 32	2	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
AU-3	4	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41
Fea 38	1	Bitters	DR J. HOSTETTER'S/STOMACH BITTERS				W&W 69:34-41

## METRO RAIL GLASS MARKS

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 39	2	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS				W&W 69:34-41
AU-6	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS		HT, post	1870-1885	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 29	2	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS		HT, post	1894-1920	W&W 69:34-41; Tou 71:43; Swi 74:30-33
AU-1	7	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS		HT, post	1894-1920	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 54	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS		HT, post	1894-1920	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 58	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS		HT, post	1894-1920	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 1	2	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//AGW (on base)	American Glass Works	HT, post	1894-1905	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 3	2	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//AGW (on base)	American Glass Works	HT, post	1894-1905	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 11	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//AGW (on base)	American Glass Works	HT, post	1894-1905	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 29	2	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//AGW (on base)	American Glass Works	HT, post	1894-1905	W&W 69:34-41; Tou 71:43; Swi 74:30-33
AU-1	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//AGW (on base)	American Glass Works	HT, post	1894-1905	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 31	1	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//IGCo (on base)	Ihmsen Glass Works	Post	1870-1895	W&W 69:34-41; Tou 71:43; Swi 74:30-33
AU-6	3	Bitters	DR J. HOSTETTER'S/StOMACH BITTERS//IGCo (on base)	Ihmsen Glass Works	HT, Post	1870-1895	W&W 69:34-41; Tou 71:43; Swi 74:30-33
Fea 18		Bitters	H. E. BUCKLIN/CHICAGO (prob. ELECTRIC [BRAND] BITTERS)			>1880	Fik 83:33; W&W 71:32, 113
AU-1	1	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...			1884-1905	W&W 69:44; Fik 87:37
Fea 29	1	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...			1884-1905	W&W 69:44; Fik 87:37
Fea 39	2	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...			1884-1905	W&W 69:44; Fik 87:37
Fea 40	1	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...			1884-1905	W&W 69:44; Fik 87:37
Fea 41	1	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...				W&W 69:44; Fik 87:37
Fea 42	1	Bitters	LASH'S KIDNEY AND/LIVER BITTERS//THE BEST CATHARTIC/AND BLOOD...			1884-1905	W&W 69:44; Fik 87:37
HV	1	Bitters	PAINE'S//CELERY COMPOUND		HT, post	1888-1906	W&W 71:66, 130; Dev 68:72
AU-4	1	Bitters	PAINE'S//CELERY COMPOUND			1882-1906	W&W 71:66, 130; Dev 68:72
Fea 16	1	Bitters	WAIT'S WILD CHERRY TONIC//THE GREAT TONIC			>1875	Fik 87:237; Ben 77:42
Fea 29	1	Bitters	WAIT'S WILD CHERRY TONIC//THE GREAT TONIC			>1875	Fik 87:237; Ben 77:42
Fea 32	1	Bitters	WICKSON (not identified) WAIT'S WILD CHERRY TONIC//THE GREAT TONIC		Cup	>1875	Fik 87:237; Ben 77:42
AU-1	1	Bitters	YERBA BUENA//BITTERS, S.F. CAL.		HA, post	1870-1917	W&W 69:64-66
AU-6	1	Canning	CONSOLIDATED FRUIT CAP CO./NEW YORK (canning lid and liner) (Not Identified)				



METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
WET	1	Canning	PATD JAN 5 75 REISD JUNE 5 77 PATD APR 25 82 (jar lid for bail closure)			>1882	
Fea 29	1	Chemical	PLATT/CHLORIDE/HOUSEHOLD/DISINFECTANT (H. B. Platt, N. Y.)			1884-1900	Dev 68:76
AU-1	1	Chemical	POISON//POISON//P D & CO	Parke, Davis & Co.	HT, cup	1875-1920	Tou 71:417; Fik 87:72
AU-4	2	Chemical	POISON//POISON//P D & CO	Parke, Davis & Co.	HT, cup	1875-1920	Tou 71:417; Fik 87:72
AU-1	2	Chemical	POISON//POISON//P D & CO	Parke, Davis & Co.	HT, cup	1875-1920	Tou 71:417; Fik 87:72
Fea 16	1	Food	(crest)/PURE/CURRY POWDER/Made from original .../CROSSE & BLACKWELL		HT, cup	1870-1920	Zum 80:96 (no specific dates)
AU-4	5	Food	(crest)/PURE/CURRY POWDER/Made from original .../CROSSE & BLACKWELL		HT, cup	1870-1920	Zum 80:96 (no specific dates)
Fea 29	1	Food	(crest)/PURE/CURRY POWDER/Made from original .../CROSSE & BLACKWELL		HT, cup	1870-1920	Zum 80:96 (no specific dates)
AU-1	2	Food	(crest)/PURE/CURRY POWDER/Made from original .../CROSSE & BLACKWELL		HT, cup	1870-1920	Zum 80:96 (no specific dates)
AU-1	1	Food	(crest)/TRADEMARK//SEVILLE PACKING CO/(crest)/NEW YORK (probably olives)		HT, cup	1897-1906+	Zum 80:371
Fea 18	1	Food	... JC PAT FEB 27 ... (on background plain hero cross - pat of Feb 27 1894)		Cup	1894-1900	Tou 69:82, 405, 408; 71:249
Fea 49	1	Food	...ENUINE BOYD CAP (canning jar lid liner)			>1869	Tou 69:499
Fea 32	1	Food	A. DURAND & FILS/HOILE D'SALAD,/BORDEAU (oil)				Zum 80:126 (no specific date)
Fea 29	1	Food	Ball (canning jar)			1888-1912	Tou 69:40
AU-5	1	Food	Ball/PERFECT/MASON (canning jar)		ABM	1935	Tou 69:38
Fea 29	1	Food	BELLE-VERNON/FARMS CO./316 EAST 8TH ST/LOS ANGELES (1/2 pint, cream)		ABM	1890?	LAD
AU-1	1	Food	BELLE-VERNON/FARMS CO./316 EAST 8TH ST/LOS ANGELES (1/2 pint, cream)		ABM	1890?	LAD
AU-5	1	Food	BEST FOODS/REG.				
AU-1	1	Food	BEST FOODS/REGISTERED				
AU-5	1	Food	BEST FOODS/REGISTERED				
Fea 29	3	Food	BISHOP & COMPANY		Cup	>1904	Zum 80:48
AU-1	1	Food	E.R.DURKEE & CO./TRADE/(gauntlet)/MARK/NEW YORK (prob. salad dressing)			1871-1929	Zum 80:128-129; Tou 71:182-184
Fea 29	1	Food	E.R.DURKEE/SALAD DRESSING/NEW YORK//BOTTLE PAT.../APRIL 17, 1877		Cup	>1877	Zum 80:128-129
AU-1	1	Food	E.R.DURKEE/SALAD DRESSING/NEW YORK//BOTTLE PAT.../APRIL 17, 1877		SCA	1887-1916	Zum 80:128-129
AU-1	1	Food	G & L (prob. Guiden and Leidecker; green fluted mustard)			1867-1875	Zum 80:162, 188
Fea 42	1	Food	H. J. HEINZ CO.../PITTSBURG...			>1890	Zum 80:200-236
AU-1	1	Food	H. J. HEINZ CO./57/PATD			>1890	Zum 80:200-236
Fea 29	1	Food	H. J. HEINZ CO./96/PATD.//11-15-04 (on base)		Cup	>1904	Zum 80:200-236
AU-1	1	Food	H. J. HEINZ CO./PATENTED			>1890	Zum 80:200-236
Fea 29	1	Food	HAZARD'S/SHREN MANOR/RELISH//... ISH//... BURY (E. C. Hazard & Co.)		Cup	>1883	Zum 80:198-199
AU-1	1	Food	HF. PT/ARDEN DAIRY/CERTIFIED/EL MONTE//WASH AND RETURN//DELAVAL		ABM	ca1906	LAD
Fea 29	1	Food	HOLBROOK & CO//J (includes stopper, club sauce)		HT, cup	1872-1920	Zum 80:245-247

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-1	1	Food	HORLICK'S/MALTED MILK (plus partial paper label)		ABM	>1906	Zum 80:249
Fea 29	1	Food	HORLICK'S/MALTED MILK/RACINE.WIS./U.S.A./LONDON, ENG.//I G Co	Ihmsen Glass Co.	(S)ABM	1883-1895	Zum 80:249; Tou 71:262
AU-1	1	Food	HORLICK'S/MALTED MILK/RACINE.WIS./U.S.A./LONDON, ENG.//I G Co	Ihmsen Glass Co.	(S)ABM	1883-1895	Zum 80:249; Tou 71:262
MV	1	Food	J K & S/W/1936	John Kilner & Sons, England	HA	1844-1857	Tou 71:279
AU-6	1	Food	J28D/S (John Duncan & Sons, NY - Lea & Perrins Worcestershire Sauce)	J. Duncan & Sons by Salem Glass Works	Cup	1877-1921	Zum 80:268-271; Tou 71:449
AU-4	1	Food	JERSEY MAID DAIRY/GUARANTEED PURE/AND TO/CONTAIN 15% CREAM/GEO. E. PLATT/PO STATION B./KNOWLTON VACUUM/PAT'D MAY 1903 (Bail type canning lid)			1902-1910	Tou 71:539
AU-1	1	Food	L. A. C./L. A. CREAMERY.CO.		ABM	>1906	
AU-1	1	Food	LEA & PERRINS (glass stopper)			1849-1957	Zum 80:268-271
AU-4	1	Food	LEA & PERRINS (glass stopper)			1849-1957	Zum 80:268-271
Fea 29	1	Food	LEA & PERRINS (glass stopper)			1849-1957	Zum 80:268-2711
AU-1	1	Food	LEA & PERRINS (glass stopper)			1849-1957	Zum 80:268-2711
Fea 42	1	Food	LEA & PERRINS (partial)			1849-1957	Zum 80:268-2711
AU-1	2	Food	LONG'S/CALIFORNIA/PRESERVES (on base)		Cup	>1896	Zum 80:282
AU-4	1	Food	LONG'S/CALIFORNIA/PRESERVES (on base)		Cup	>1896	Zum 80:282
Fea 29	1	Food	LONG'S/CALIFORNIA/PRESERVES (on base)		Cup	>1896	Zum 80:282
Fea 43	1	Food	MASON FRUIT JAR COMPANY PHILADELPHIA, PA (on canning lid liner)			1885-1900	Tou 69:200
AU-1	1	Food	MASON IMPROVED/PATD MAY 10 1870 (Canning, glass lid top seal)		Pressed	>1870	Tou 69:404 (Pat. no. 102,913)
AU-1	1	Food	MELLINS FOOD FREE SAMPLE (probably infant food)		HT, cup	1870-1920	Zum 80:300; SeC 1897; W&W 71:59, 127
AU-1	1	Food	MERIT FLAVORING EXTRACTS/R. L. CRAIG & CO./LOS ANGELES		HT, cup	1870-1920	
AU-1	1	Food	ONE PINT/BORR/LOS ANGELES (milk or cream)		ABM	>1906	
AU-1	1	Food	PACIFIC VINEGAR & PICKLE WORKS (on base)		SCA	1880-1912	Zum 80:345
AU-1	1	Food	PAT NOV 26 67/PAT FEB 4 73/A20 (pat D2,840, Ravley..Hero..shape; pat 135,430...glass lid			>1873	B&G, post Tou 69:402,404
Fea 29	1	Food	PATD APR... PATD JAN 75/REISD JUN L (de Quillfeldt lightning type jar cover)		Pressed	>1875	Tou 69:404 (pat. no. 158,406)
AU-1	1	Food	PATENTED "PRIOF" REGISTERED				
Fea 29	4	Food	PUTNAM		Post	1881-1890	Tou 69:250
Fea 47	4	Food	PUTNAM			1882-1890	Tou 69:250
Fea 29	1	Food	SELECTED/QUEEN/OLIVES/JAMES HALL & SONS CO./LOS ANGELES, CAL.		HT, cup	1895-1911	Zum 80:238
AU-1	1	Food	SEVILLE PACKING CO/(crest)/NEW YORK (on base)			1897-1906+	Zum 80:371
Fea 29	1	Food	THE ... PACKING CO/PAT JULY 11TH/1893/USA (poss. Rath Packing Co., >1891)		Cup	>1893	Zum 80:345
Fea 29	1	Food	TOBASCO/MCINENNY/SAUCE		Cup		Zum 80:292
AU-1	1	Food	TRADE MARK/LIGHTNING/PUTNAM		Post	1882-1890	Tou 69:250
Fea 39	1	Food	WORCESTERSHIRE SAUCE//LEA & PERRINS//A G B Co	Albion Glass Bottle Co.	HA	1880-1900	Zum 80:268-271; Tou 71:38
Fea 1	1	Food	WORCESTERSHIRE SAUCE//LEA & PERRINS//J17D/S (also J44D/S and J49D/S)	J. Duncan & Sons by Salem Glass Works	HT, cup	1877-1921	Zum 80:268-271; Tou 71:449

METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 18	1	Food	WORCESTERSHIRE SAUCE//LEA & PERRINS//J17D/S (also J44D/S and J49D/S)	J. Duncan & Sons by Salem Glass Works	HT, cup	1877-1921	Zum 80:268-271; Tou 71:449
Fea 29	2	Food	WORCESTERSHIRE SAUCE//LEA & PERRINS//J17D/S (also J44D/S and J49D/S)	J. Duncan & Sons by Salem Glass Works	HT, cup	1877-1921	Zum 80:268-271; Tou 71:449
WA	1	Food	WORCESTERSHIRE SAUCE//LEA & PERRINS//J17D/S (also J44D/S and J49D/S)	J. Duncan & Sons by Salem Glass Works	HT, cup	1877-1921	Zum 80:268-271; Tou 71:449
AU-4	1	Ink	.../DESIGN/PATD/... (on base)		HT, cup	1870-1920	
AU-4	1	Ink	BIXBY (base)		HT, cup	1870-1920	N&H 67:2 (similar mark)
Fea 29	1	Ink	BIXBY (base)		HT, cup	1870-1920	N&H 67:2 (similar mark)
Fea 49	1	Ink	BIXBY (base)		HT, cup	1870-1920	N&H 67:2 (similar mark)
Fea 32	1	Ink	BIXBY (base) PATENTED MCH. 6 83.		HT, cup	1870-1920	N&H 67:2 (similar mark)
Fea 57	1	Ink	BIXBY (base) PATENTED MCH. 6 83.		HT, cup	1870-1920	N&H 67:2 (similar mark)
AU-1	1	Ink	BLACKSTONE'S/INKS U.S.A.		HT, post	1870-1920	
Fea 18	1	Ink	CARTER'S (on base)		HT, cup	1901-1920	N&H 67:72
Fea 27	1	Ink	CARTER'S (on base)			>1901	N&H 67:72
Fea 22	1	Ink	CARTER'S (on base)			>1901	N&H 67:72
AU-1	1	Ink	CARTER'S INKS (around base, master ink, ceramic)				N&H 67:72
AU-1	1	Ink	CARTER'S INKS//STIFF & SONS/LONDON/ENGLAND (on base, master ink, ceramic)	J. Stiff & Sons, London, England		1897-1913	God 64:599; N&H 67:72
Fea 29	1	Ink	CARTER'S/185/MADE IN/U.S.A. (on base)		HT, cup	1901-1920	N&H 67:72
Fea 18	1	Ink	CARTER'S/1897/MADE/IN U.S.A.		Cup	>1897	N&H 67:72
AU-1	1	Ink	CARTER'S/1897/MADE/IN U.S.A.			>1897	N&H 67:72
Fea 39	1	Ink	CARTER'S/1897/MADE/IN U.S.A.		HT, Cup	1897-1920	N&H 67:72
Fea 33	1	Ink	CARTER'S/CARTER'S (cap)			>1901	N&H 67:72
Fea 29	1	Ink	CARTER'S/INK (cap)			>1901	N&H 67:72
Fea 30	2	Ink	CARTER'S/MADE IN/U.S.A.		HT, cup	1901-1920	N&H 67:72
AU-1	1	Ink	CARTER'S/MADE IN/U.S.A.		(S)ABM	>1906	N&H 67:72
Fea 29	4	Ink	CARTER'S/MADE IN/U.S.A.			>1901	N&H 67:72
Fea 29	1	Ink	CARTER'S/MADE IN/U.S.A./7"		(S)ABM	>1906	N&H 67:72
AU-1	1	Ink	CARTER'S/MADE IN/U.S.A./7"			>1901	N&H 67:72
Fea 16	1	Ink	CARTER'S/U.S.A. (on base)		(S)ABM	>1906	N&H 67:72
AU-3	1	Ink	CARTER'S/U.S.A. (on base)			>1901	N&H 67:72
Fea 40	1	Ink	CARTER'S/U.S.A. (on base)		(S)ABM	>1901	N&H 67:72
Fea 32	1	Ink	CARTERS (cap)			>1901	N&H 67:72
AU-7	1	Ink	CARTERS/MADE IN/U.S.A.		Cup	>1901	N&H 67:72
AU-1	1	Ink	CARTERS/MADE IN/U.S.A.			>1901	N&H 67:72
Fea 29	1	Ink	CARTERS/MADE IN/U.S.A.			>1901	N&H 67:72
Fea 57	1	Ink	CURTIS & BROWN/MF'G CO/(LIMITED)/NEW YORK		HT, Cup	1870-1920	
Fea 31	1	Ink	DAVIDS' RED INK/(paper label)... DAVIDS CO. NEW YORK		HT, cup	1870-1920	N&H 67:16 (#103 similar)
AU-1	1	Ink	E. H. MERRILL CO, AKRON, OHIO (on base, master ink)			1833-1900	S&C 77:124
Fea 18	1	Ink	HIGGINS'/INK/BROOKLYN/N.Y. (on base)		HT, cup	1870-1920	N&H 67:23 (#141 similar)
Fea 22	1	Ink	JONES (on base)		HT, cup	1870-1920	
AU-1	1	Ink	L. H. THOMAS CO/57/CHICAGO (on base)		(S)ABM	>1881	N&H 67:45 (similar mark)
Fea 22	1	Ink	L. H. THOMAS CO/CHICAGO (on base and partial paper label)		HT, cup	1870-1920	N&H 67:45
Fea 29	1	Ink	L. H. THOMAS CO/CHICAGO (on base)		(S)ABM	>1881	N&H 67:45 (similar mark)
AU-1	2	Ink	L. H. THOMAS CO/CHICAGO (on base)		(S)ABM	>1881	N&H 67:45 (similar mark)

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 32	1	Ink	PAUL'S SAFETY BOTTLE & INK CO. N.Y. (on shoulder)		HT, cup	1870-1920	N&H 67:34 #207
Fea 39	1	Ink	PAUL'S SAFETY BOTTLE & INK CO. NY		(S)ABM	>1906	N&H 67:54 #207
AU-1	1	Ink	PC (in triangle on base)	Pacific Coast Glass Co.	Post	1925-1930	Tou 71:414
Fea 29	1	Ink	SANFORD				
AU-1	1	Ink	SANFORD (on base)		HT, cup	1870-1920	N&H 67:39 (#230 similar)
Fea 39	1	Ink	SANFORD (on base)		(S)ABM	>1881	N&H 67:39 (#230 similar)
AU-1	1	Ink	SANFORD (on base, square)		(S)ABM	>1906	
AU-1	1	Ink	SANFORD MFG. CO./PATENTED MAY 25, 1899		(S)ABM	>1881	
Fea 32	1	Ink	SANFORD'S (on base)		HT, cup	1870-1920	N&H 67:39 (#230 similar)
Fea 22	1	Ink	SANFORD'S (on base)		HT, cup	1870-1920	N&H 67:39 (#230 similar)
AU-1	2	Ink	SANFORD'S (on base)		HT, cup	1870-1920	N&H 67:39 (#230 similar)
Fea 49	1	Ink	SANFORD'S (on base)		ABM	>1906	N&H 67:39 (#230 similar)
AU-3	1	Ink	SANFORD'S (on base) (partial paper label)		HT, cup	1870-1920	
Fea 32	1	Ink	SANFORD'S (on base) SECOND SECOND (on shoulder)		HT, cup	1870-1920	
AU-1	1	Ink	SANFORD'S INK (on base)		HT	1870-1920	
AU-5	1	Ink	SANFORD'S/1 (on base)		(S)ABM	>1881	N&H 67:39 (#230 similar)
Fea 42	1	Ink	SANFORD'S/27 (on base)		HT	1870-1920	N&H 67:39 (#230 similar)
AU-4	1	Ink	SANFORD'S/INKS (cap)				
Fea 29	1	Ink	SANFORD/PATENT/APPLIED/FOR (on base)		Cup		
AU-1	1	Ink	THAD DAVIDS CO/N.Y. (on base)		HT, cup	1870-1920	N&H 67:16-17 (#104 similar)
Fea 3	1	Ink	THOMAS/INKS (on base)		(S)ABM	>1881	
AU-1	1	Ink	THOMAS/INKS (on base)		(S)ABM	>1881	
AU-4	1	Ink	THOMAS/INKS (on base)		HT, cup	1870-1920	
Fea 39	1	Ink	THOMAS/RED INK/CHICAGO (paper label)		HT, cup	1870-1920	N&H 67:45
AU-1	1	Ink	VITREOUS STONE BOTTLE/J. BOURNE & SON/PATENTEES/DENBY POTTERY/NEAR DENBY/P. &	J. Bourne & Son	Surface	>1859	God 64:90; N&H 67:1 #
Fea 29	3	Medicinal	"VASELINE"/CHESEBROUGH/NEW-YORK		(S)ABM, SCA	1908-1916	Fik 87:56; W&W 71:28,110
AU-1	2	Medicinal	"VASELINE"/CHESEBROUGH/NEW-YORK		(S)ABM, SCA	1881-1908	Fik 87:56; W&W 71:28,110
AU-1	1	Medicinal	"VASELINE"/CHESEBROUGH/NEW-YORK			>1908	Fik 87:56; W&W 71:28,110
Fea 39	1	Medicinal	"VASELINE"/CHESEBROUGH/NEW-YORK			>1908	Fik 87:56; W&W 71:28,110
Fea 29	2	Medicinal	(3iii) (3iv)/GODFREY & MOORE/SW COR FIRST & SPRING/ LOS ANGELES, CAL.		HT, cup	1890-1920	Toy 77:23; LAD
AU-1	1	Medicinal	(3iii) (3iv)/GODFREY & MOORE/SW COR FIRST & SPRING/ LOS ANGELES, CAL.		HT, cup	1890-1920	Toy 77:23; LAD
AU-1	1	Medicinal	(figure)/PLUTO (on base)		Post	1910-1920	Dev 68:76
Fea 29	1	Medicinal	(James or Joseph) ... P. FITLER'S/... REMEDY (diff. from exp. in refs.)			1850s-1910	Fik 87:207; W&W 71:35, 115; Bal 73:182
AU-1	1	Medicinal	(monogram on base)	S. S. White Co. (dental supplies)		1900-1910	Tou 71:543
Fea 39	1	Medicinal	(monogram on base)	S. S. White Co. (dental supplies)	HT	1900-1910	Tou 71:543
AU-4	1	Medicinal	(owl on mortar)/TRADEMARK (with monogram, The Owl Drug Co.)		HT, cup	1892-1908	J&J 68:3; Fik 87:72
Fea 29	1	Medicinal	(owl on mortar)/TRADEMARK (with monogram, The Owl Drug Co.)		HT, cup	1892-1908	J&J 68:3; Fik 87:72
Fea 32	1	Medicinal	(owl on mortar)/TRADEMARK (with monogram, The Owl Drug Co.)		HT,cup	1892-1908	J&J 68:3; Fik 87:72

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 33	1	Medicinal	... PHARMACY/N. MAIN ST LOS ANGELES (partial paper label)		HT, cup	1870-1920	
AU-4	1	Medicinal	... PHARMACY/N., MAIN ST LOS ANGELES (partial paper label)		HT, cup	1870-1920	
AU-1	1	Medicinal	... YS'//... THIC/(horse head)/TRADE MARK/VETERINARY/SPECIFICS (not identified)		Cup		
AU-1	1	Medicinal	.../421 N. MAIN/LOS ANGELES				
Fea 32	1	Medicinal	.../ROSES & ...RY/...WAKELEE & Co SOLE AGENTS		Cup	1868-1917	W&W 71:94, 108, 129, 138, 143; Fik 87:114
AU-1	1	Medicinal	4 fl oz/NEWBROW'S/HERPICIDE/FOR THE SCALP//CONTAINER MADE IN USA		ABM, cup	1906-1916	Fik 87:103; W&W 71:64, 129; Dev 68:68
Fea 39	1	Medicinal	A	Probably Adams & Co., Pittsburgh	HT	1870-1891	Tou 71:21
Fea 29	1	Medicinal	ABEL'S WHITE PINE/BALSAM/LOS ANGELES		HT, cup	1890-1897	Toy 77:20; Fik 87:72; Ste pc92; Kus pc92
AU-1	1	Medicinal	ABSORBINE JR 4FL OUNCES//W. F. YOUNG SPRINGFIELD/MASS/U.S.A.	Owens Illinois Glass Co., Bridgeton NJ	ABM	1919	Tou 71:395, 403; Dev 68:64; Fik 87:151
MV	2	Medicinal	ABSORBINE JR 4FL OUNCES//W. F. YOUNG SPRINGFIELD/MASS/U.S.A.	Anchor Hocking Glass Co	ABM	ca1938	Tou 71:46-48
AU-1	1	Medicinal	AYER (prob. hair vigor)		Post	>1867	Fik 87:94; W&W 71:18-19, 105; Dev 68:10
AU-1	1	Medicinal	AYER'S// ... //LOWELL/MASS. U.S.A.			>1847	Fik 87:94, 199, 214, 223; W&W 71:19
Fea 1	1	Medicinal	AYER'S//SARSAPARILLA			>1912-1942	Fik 87:214; W&W 71:18, 105; Dev 68:10
Fea 18	1	Medicinal	BENTON HOLLADAY & CO/CHICAGO				Fik 87:52
ESC #10	1	Medicinal	BENTON HOLLADAY & CO/CHICAGO				Fik 87:52
Fea 39	1	Medicinal	BODENMANN/Pharmacist/BROADWAY & TEMPLE/LOS ANGELES			1900	Toy 77:20
Fea 29	3	Medicinal	BOSWELL & NOYES DRUG CO./PRESCRIPTION DRUGGISTS/LOS ANG....		HT, cup	1896	Toy 77:25
Fea 22	1	Medicinal	BOSWELL & NOYES DRUG CO./PRESCRIPTION DRUGGISTS/LOS ANG....		HT, cup	1896	Toy 77:25
AU-1	2	Medicinal	BROMO-SELTZER BROMO-SELTZER (around shoulder, 6 oz.)	Maryland Glass Corp.	4-lug, ABM	>1916	>1928 Fik 87:111; Tou 71:339-341
AU-7	1	Medicinal	BROMO-SELTZER/EMERSON/DRUG CO./BALTIMORE, MD (1.5 and 4 oz.)		HT, cup	1889-1907	Fik 87:111; W&W 71:24, 107; Dev 68:17
AU-4	1	Medicinal	BROMO-SELTZER/EMERSON/DRUG CO./BALTIMORE, MD (1.5 and 4 oz.)			1889-1907	Fik 87:111; W&W 71:24, 107; Dev 68:17
AU-1	1	Medicinal	BROMO-SELTZER/EMERSON/DRUG CO./BALTIMORE, MD (1.5 and 4 oz.)			1889-1907	Fik 87:111; W&W 71:24, 107; Dev 68:17
AU-4	1	Medicinal	BROMO-SELTZER/EMERSON/DRUG CO./BALTIMORE, MD (1.5 and 4 oz.)			1889-1907	Fik 87:111; W&W 71:24, 107; Dev 68:17
AU-1	1	Medicinal	BROMO-SELTZER/EMERSON/DRUG CO./BALTIMORE, MD (4 oz.)		ABM	>1907	Fik 87:111; W&W 71:24, 107; Dev 68:17
AU-1	1	Medicinal	BURNETT/BOSTON		(S)ABM	1906-1937+	Fik 87; W&W 71:26, 109; Dev 68:18
Fea 29	1	Medicinal	C R P Co (not identified)		HT, cup	1870-1920	
Fea 43	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL. (3 sizes)		HT, cup	1884-1890	Toy 77:27; LAD



METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 12	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
Fea 16	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
AU-1	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
Fea 29	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
Fea 32	1	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
AU-1	2	Medicinal	C.F.HEINZEMAN/PHARMACIST/122 N... MAIN ST./LOS ANG..., CAL.//W.T.&CO.	Whitall-Tatum & Co.	HT, cup	1884-1890	Tou 71:544-547; Toy 77:27; LAD
Fea 41	1	Medicinal	CALIFORN.../FIG SYRU...//LOUISVILLE. KY	(California Fig Syrup Co., Louisville, KY)		1899	Dev 68:19
AU-1	1	Medicinal	CALIFORNIA FIG SYRUP Co/SAN FRANCISCO CAL//SYRUP OF FIGS		HT, cup	1880s	Fik 87:225; Dev 68:19; Bal 73:97
Fea 18	1	Medicinal	CALIFORNIA FIG SYRUP Co/SAN FRANCISCO CAL//SYRUP OF FIGS		HT, cup	1880s	Fik 87:225; Dev 68:19; Bal 73:97
Fea 32	1	Medicinal	CALIFORNIA FIG SYRUP Co/SAN FRANCISCO CAL//SYRUP OF FIGS		HT, cup	1880s	Fik 87:225; Dev 68:19; Bal 73:97
AU-1	1	Medicinal	CALIFORNIA FIG SYRUP Co/SAN FRANCISCO CAL//SYRUP OF FIGS		HT, cup	1880s	Fik 87:225; Dev 68:19; Bal 73:97
Fea 41	1	Medicinal	CALIFORNIA/FIG/BITTERS (partial, probable ident.)			1897-1905	W&W 69:18-19; Wat 65:77
AU-1	1	Medicinal	CAULY'S/CROWN & BRIDGE/(monogram)/CEMENT		HT, ground	1870-1915	
Fea 29	1	Medicinal	CHAMBERLAIN'S/COUGH REMEDY//CHAMBERLAIN MED. CO.//DES MOINES...		HT, cup	1881->1904	Fik 87:205-206; W&W 71:28, 110; Dev 68:2
Fea 22	1	Medicinal	Chas. H. Fletcher's/CASTORIA		ABM	>1904	Fik 87:162; W&W 71:72, 132; Dev 68:35; Bal 71:28, 110
AU-1	3	Medicinal	CHESEBROUGH MFG CO/VASELINE		(S)ABM, cup	1887-1908	Fik 87:56; W&W 71:28, 110
Fea 29	2	Medicinal	CHESEBROUGH MFG CO/VASELINE		(S)ABM, cup	1887-1908	Fik 87:56; W&W 71:28, 110
Fea 56	1	Medicinal	CHESEBROUGH MFG CO/VASELINE		(S)ABM	1887-1908	Fik 87:56; W&W 71:28, 110
Fea 57	1	Medicinal	CHESEBROUGH MFG CO/VASELINE		(S)ABM	1887-1908	Fik 87:56; W&W 71:28, 110
Fea 58	1	Medicinal	CHESEBROUGH MFG CO/VASELINE		(S)ABM, SCA	1906-1908	Fik 87:56; W&W 71:28, 110
Fea 16	1	Medicinal	CHESEBROUGH/VASELINE/MANUFACT'G CO.		(S)ABM, cup	1887-1908	Fik 87:56; W&W 71:28, 110
AU-1	2	Medicinal	CHESEBROUGH/VASELINE/MANUFACT'G CO.		(S)ABM, cup	1887-1908	Fik 87:56; W&W 71:28, 110
AU-1	1	Medicinal	CITRATE/OF/MAGNESIA (generic bottle)		HT, post	1870-1920	Fik 87:140
AU-1	1	Medicinal	Diamond Glass Co. mark	Diamond Glass Co.		>1888	Tou 71:550
Fea 29	1	Medicinal	DR A. BOSCHEE'S/GERMAN SYRUP//L. M. GREEN//PROPRIETER		Cup	1897-1941	Fik 87:224; W&W 71:23, 107; Dev 68:15
AU-4	1	Medicinal	DR KENNEDY'S//RHEUMATIL/LINIMENT//ROXBURY, MASS.			1882-1900+	W&W 71:146; Fik 87:135
Fea 29	1	Medicinal	DR KILMER'S.SWAMP ROOT/KIDNEY LIVER/AND BLADDER CURE/BING.../N.Y.		Cup	1881-1918+	Fik 87:101 #22; W&W 71:53, 124; Dev 68:5
Fea 30	1	Medicinal	DR THOMPSON'S/EYE WATER/NEW LONDON/CONNT		HT, cup	1870-1925	Fik 87:245; W&W 71:90, 141; Dev 68:92
ESC #10	1	Medicinal	DR WISTAR'S/BALSAM OF/WILD CHERRY/PHILAD /I B.		HT	1870-1900	Fik 87:28; W&W 71:99, 146
AU-1	1	Medicinal	DR. BIRNEY'S/CATARRHAL POWDER			1895-1905	Fik 87:154; Dev 68:14
AU-1	1	Medicinal	DR. D. JAYNE'S/EXPECTORANT/PHILADELPHIA//HALF SIZE//HALF DOLLAR		Cup	1895-1900+	Fik 87:118; W&W 71:47 suggests ca 1895

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METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 39	1	Medicinal	DR. S. PITCHER.../CASTORIA			1868-1888	Dev 68:76; W&W 71:72, 132; Fik 87:177
AU-1	1	Medicinal	DR. S.B.H.&CO./B/PR. (not identified)		Post		
AU-3	1	Medicinal	FARMERS//HORSE MEDICINE/S. F. CAL//XXX (poss. followup to Farmers Healing Linement, Lodi C			>1900	Cup Fik 87:146; W&W 71:33, 114
AU-1	1	Medicinal	FELLOWS & CO/CHEMISTS/ST JOHN N.B. (mark for Y G Co)		Post	>1849	Fik 87
AU-1	1	Medicinal	FELLOWS/SYRUP OF/HYPOPHOSPHITES		HT, post	1872-1920	Fik 87:226; W&W 71:114; Dev 68:34; Bal 73:17 LAD
AU-2	1	Medicinal	FRANK MILLER (may be Frank W. Miller...specialist, 733...Hellman Bldg.,356			1912?	
AU-6		Medicinal	FULTON'S/RADICAL REMEDY//SURE KIDNEY, LIVER, DYSPEPSIA CURE			1897-1905	Fik 87:98; Dev 68:36
AU-1	1	Medicinal	G. C. THAXTER/(mortar)/DRUGGIST/CARSON//WT & CO/S (George C. Thaxter, Carson City, NV)	Whitall-Tatum & Co.	Cup	1878-1903	H&H 86:47; Tou 71:544
Fea 29	1	Medicinal	GLYCO-/THYMOLINE/KRESS & OWENS (New York)			1896-1948	Fik 87:163; Dev 68:38
AU-6	1	Medicinal	GODFREY & MOORE/PHARMACISTS/108 S. SPRING ST/LOS ANGELES//WT&Co	Whitall-Tatum & Co.		1890-1931+	Tou 71:544; LAD
AU-4	1	Medicinal	GOURAUD'S//ORIENTAL/CREAM//NEW YORK			1800s-1925	Fik 87:92; Dev 68:39
Fea 29	1	Medicinal	HAMLIN'S/WIZARD OIL//CHICAGO ILL./U.S.A.		HT, cup	1870-1920	Fik 87:193; W&W 71:41, 118; Dev 68:41; Bal
AU-3	1	Medicinal	HAMLIN'S/WIZARD OIL//CHICAGO ILL./U.S.A.		HT, cup	1870-1920	Fik 87:193; W&W 71:41, 118; Dev 68:41; Bal
AU-1	1	Medicinal	HHH HORSE/MEDICINE			1868-1898	W&W 71:43, 119
Fea 39	2	Medicinal	HOOD'S/SARSA/PARILLA//C. I. HOOD & CO//LOWELL MASS (partial)			1876-1918	Fik 87:217; W&W 71:44, 120; Dev 68:46
AU-4	1	Medicinal	HOOD'S/SARSA/PARILLA//C. I. HOOD & Co//LOWELL, MASS.			1876-1918	Fik 87:217; W&W 71:44, 120; Dev 68:46
AU-1	1	Medicinal	J. S. DURY/BAKERSFIELD/CAL		HT	1884	Toy 77:4
Fea 42	1	Medicinal	JOHN U. BODENMANN/Pharmacist/B... & TEMPLE/LOS ANGELES//W.B.M.C.Co.	Unident. Mfg.	HT	1900	Toy 77:20; Tou 71:535
AU-1	2	Medicinal	JOHN U. BODENMANN/Pharmacist/BROADWAY & TEMPLE/LOS ANGELES		HT, cup	1900	Toy 77:20
AU-3	1	Medicinal	JOHN U. BODENMANN/Pharmacist/BROADWAY & TEMPLE/LOS ANGELES		HT, cup	1900	Toy 77:20
AU-1	3	Medicinal	JOHN U. BODENMANN/Pharmacist/BROADWAY & TEMPLE/LOS ANGELES		HT, cup	1900	Toy 77:20
AU-4	1	Medicinal	JOHN WYETH & BRO//PAT MAY 16TH 1899		Cup	1899-1907+	Fik 87:49, 121, 187; W&W 71:146; Dev 68:102
Fea 29	1	Medicinal	JOHN WYETH & BRO//TAKE NEXT DOSE AT//PAT APPD FOR		HT, cup	1890-1899	Fik 87:121, 187; W&W 71:101, 146; Dev 68:
Fea 29	1	Medicinal	JOHN WYETH (and Bro?) (partial)			1860s-1907	Fik 87:49, 121, 187; W&W 71:146; Dev 68:102
Fea 29	1	Medicinal	KEASBEY & MATTISON Co//(base)		HT, cup	1882-1920	Fik 87:46; W&W 71:49, 123
Fea 32	1	Medicinal	KEASBEY/&MATTISON Co/2/AMBLER PA		HT, cup	1870-1874+	Fik 87:164, 224; W&W 71:23, 37, 107
Fea 16	2	Medicinal	McClain & Gleason/DRUGGISTS COR TEMPLE AND SPRING STS/LOS ANG...		HT, cup	1902	Toy 77:25
AU-1	1	Medicinal	McClain & Gleason/DRUGGISTS COR TEMPLE AND SPRING STS/LOS ANG...		HT, cup	1902	Toy 77:25

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METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 22	1	Medicinal	McClain & Gleason/DRUGGISTS COR TEMPLE AND SPRING STS/LOS ANG...		HT, cup	1902	Toy 77:25
Fea 16	1	Medicinal	McClain & Leland Drug Co/LOS ANGELES, CAL.//A		HT, cup	1904	Toy 77:25
Fea 29	1	Medicinal	McClain & Leland Drug Co/LOS ANGELES, CAL.//A		HT, cup	1904	Toy 77:25
Fea 3	4	Medicinal	McKesson & Robbins/New York/Medical Solution/of Pyrozone/3% H2O2		HT, cup	1895-1920	Fik 87:149, 172; Dev 70:59
Fea 29	1	Medicinal	McKesson & Robbins/New York/Medical Solution/of Pyrozone/3% H2O2		HT, cup	1895-1920	Fik 87:149, 172; Dev 70:59
Fea 29	2	Medicinal	MEXICAN/MUSTANG/LINIMENT/LYON MF'G CO/NEW YORK		HT, cup	1871-1918	Fik 87:135; W&W 71:59, 171; Dev 68:64
SU-1	1	Medicinal	MURINE EYE REMEDY (partial paper label)		HT, cup	1906-1920	Dev 68:67; W&W 71:90, 141; Fik 87:209
Fea 29	1	Medicinal	MURINE EYE REMEDY/CO CHICAGO		HT, cup	1892-1906	Fik 87:209; W&W 71:63, 128; Dev 68:67
Fea 49	1	Medicinal	MURINE EYE REMEDY/CO CHICAGO			>1892	Fik 87:209; W&W 71:63, 128; Dev 68:67
AU-1	2	Medicinal	OFF & VAUGHN/DRUG CO/LOS ANGELES, CAL//***/A/U.S.A./PAT JAN 5 1892		Cup	>1892	Toy 77:25; LAD
AU-1	1	Medicinal	OWENS (w/graduations)	Owens Bottle Co.	ABM scar	1911-1929	Tou 71:393
MV	1	Medicinal	Owens mark (w/graduations)	Owens Bottle Co.	ABM scar	1911-1929	Tou 71:393
AU-1	1	Medicinal	OWENS/(diamond in circle)	Owens Illinois Glass Co.	ABM scar	1929-1954	Tou 71:395, 403
MV	1	Medicinal	OWENS/(diamond in circle)	Owens Illinois Glass Co.	ABM scar	1929-1954	Tou 71:395, 403
AU-5	1	Medicinal	OWENS/(diamond in circle)	Owens Illinois Glass Co., Newark, OH		1929-1938	Tou 71:395, 403
AU-1	1	Medicinal	P C G W	Pacific Coast Glass Works	(S)ABM	1902-1904	Tou 71:416
Fea 39	1	Medicinal	P D & CO/375	Parke, Davis & Co.	HT, Post	1875-1920	Tou 71:417
Fea 29	5	Medicinal	P-D&Co	Parke, Davis & Co.	Post	>1875	Tou 71:417
Fea 39	1	Medicinal	P. D. & Co.	Parke, Davis & Co.		>1875	Tou 71:417
AU-1	1	Medicinal	P. D. & Co.	Parke, Davis & Co.	HT	1875-1920	Tou 71:417
Fea 39	1	Medicinal	P. D. & Co.	Parke, Davis & Co.	Post	>1875	Tou 71:417
Fea 30	1	Medicinal	PAT MAY 21/(M in star)/1899 (not identified)		HT, cup	1899-1920	
AU-1	3	Medicinal	PAT MAY 21/(M in star)/1899 (not identified)		HT, cup	1899-1920	
AU-1	1	Medicinal	PISO CO. WARREN, PA. U.S.A.		Cup	>1903	Fik 87:62, 104; W&W 71:73, 132
AU-1	2	Medicinal	PISO'S CURE//FOR/CONSUMPTION//HAZELTINE & Co.		Cup	1869-1906	Fik 87:62, 104; W&W 71:73, 132
AU-1	1	Medicinal	POND'S EXTRACT//1846		HT, post		Fik 87:120; W&W 71:73, 133; Dev 68:76, 70:6
AU-1	1	Medicinal	POND'S EXTRACT/OINTMENT		HT, post	1878-1920	Fik 87:120; W&W 71:73, 133; Dev 68:76, 70:6
AU-1	1	Medicinal	RADWAYS//SARSAPARILLIAN/RESOLVENT//ENTD ACCORD/TO ACT OF/CONG...			>1875	Fik 87:218; W&W 71:74, 75, 134; Dev 68:79
AU-1	1	Medicinal	RIO CHEMICAL C. NEW YORK N.Y.		HT, cup	1902-1920	Fik 87:226
Fea 54	1	Medicinal	Rubifoam/FOR THE TEETH/PUT UP BY/E.W. HOYT & Co./LOWELL, MASS.		HT	1889-1920	Dev 68:81; Fik 87:65
AU-1	1	Medicinal	S. B. W. CO. (not identified)		HT	1870-1920	
ESC #10	1	Medicinal	Sale & Son/DRUG CO	(Howard M. Sale, Los Angeles ?)	HT	1887-1920	LAD

## METRO RAIL GLASS MARKS

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-1	7	Medicinal	SAXLEHNERS/HUNYADI/JANOS/BITTERQUELLE			1862-1923	Tou 71:257-258; Dev 68:47; Fik 87:41; S&Fik 87:196; W&W 71:82, 137; Dev 68:85 (or > Fik 87:105, 106; W&W 71:85, 138 (prob. 189 Fik 87:106; Dev 68:87
Fea 32	1	Medicinal	SCOTT'S/EMULSION//COD LIVER OIL//WITH LIME & SODA		HT, post	1876-1890	
AU-1	1	Medicinal	SHILOH'S/CONSUMPTION/CURE//S. C. WELLS & CO.//LEROY, N.Y.			1873-1909	
ESC #10	1	Medicinal	SLOAN'S SURE/COLIC CURE//S		HT	1895-1916	
AU-1	1	Medicinal	SUN DRUG CO.				
Fea 29	1	Medicinal	THE EVANS/CHEMICAL/COMPANY/PROPRIETORS/G/ CINCINNATI.O./U.S.A.		HT, cup	1885-1920	Fik 87:58
Fea 42	1	Medicinal	The Gwl (sic) Drug ... (mistake in mark noted by Jensen and Jensen, but no date given)		HT	1892-1908	J&J 68:3; Fik 87:72
AU-4	1	Medicinal	The Gwl (sic) Drug Co. (mistake in mark noted by Jensen and Jensen, but no date given)			1892-1908	J&J 68:3; Fik 87:72
AU-1	1	Medicinal	THE KELLS CO/NEWBURGH, N.Y. (not identified)		Cup		
Fea 29	1	Medicinal	THE OAKLAND CHEMICAL COMP'/H2/(monogram)/O (poss. hydrogen peroxide)		HT, cup	1907-1920	Fik 87:46
AU-1	1	Medicinal	THOMAS DRUG CO.//***/H/USA	Holt Glass Works, Berkeley	HT, cup	1893-1906	Fik 87:79; Tou 71:231; Toy 77:27
Fea 32	1	Medicinal	TROY/PHARMACAL COMPANY/SAN FRANCISCO and NEW YORK//A (on base - partial paper label		HT, cup	1870-1920	
AU-1	1	Medicinal	TURNER'S/ESS OF/JAMAICA GINGER/NEW YORK		Cup	ca1875	Fik 87:129, 130; W&W 71:93, 127, 143 Fik 87:56; W&W 71:28, 110 Toy 77:27
Fea 39	1	Medicinal	VASELINE/CHESEBROUGH/NEW-YORK		Screw	>1908	
Fea 18	1	Medicinal	VIOLE & LOPIZICH/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	
AU-1	1	Medicinal	VIOLE & LOPIZICH/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	Toy 77:27
AU-1	1	Medicinal	Viole & Lopizich/PHARMACIE-FRANCAISE/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	Toy 77:27
AU-3	1	Medicinal	Viole & Lopizich/PHARMACIE-FRANCAISE/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	Toy 77:27
AU-1	1	Medicinal	Viole & Lopizich/PHARMACIE-FRANCAISE/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	Toy 77:27
Fea 39	1	Medicinal	Viole & Lopizich/PHARMACIE-FRANCAISE/427 N. MAIN ST./LOS ANGELES, CAL.		HT	1891-1912	Toy 77:27
AU-5	1	Medicinal	Viole & Lopizich/PHARMACIE-FRANCAISE/427 N. MAIN ST./LOS ANGELES, CAL.		HT, cup	1891-1912	Toy 77:27
Fea 29	1	Medicinal	WYETH (on base)		HT, cup	1870-1920	Fik 87:49, 121, 187, 197; Dev 70; Tou 71: Fik 87:49, 121, 187, 197; Dev 70; Tou 71:
AU-1	1	Medicinal	WYETH (on base)		SCA	1880-1916	
Fea 42	1	Personal	SAFETY NURSING BOTTLE (graduated)				
Fea 39	2	Soda	A K CO/SUNRISE/SODA WATER//...OR SOLD		Cup		
AU-4	2	Soda	BAY.../WORKS/SEATTLE.WASH (on ten facet base) H	prob Holt Glass Works, Berkeley, CA	Cup	1893-1906	Tou 71:231
AU-1	1	Soda	C. A. REINERS & CO./723 TURK ST/S.F. (partial)			1875-1882	Sch 70:61; M&M 72:81
Fea 40	1	Soda	CASCADE BOT. KKS./PEVERLY/BROS. PROPS./LOS ANGELES		HT, Hutter	1893-1895	Kus pc92; P&P 73:21
Fea 16	1	Soda	Coca Cola Los Angeles; (on base) A.B.CO.	American Bottle Co.	Cup	1905-1915	Tou 71:30 Ril 72:256, 262

METRO RAIL GLASS MARKS

PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-4	1	Soda	Coca Cola Los Angeles; (on base) A.B.CO.	American Bottle Co.	Cup	1905-1915	Tou 71:30 Ril 72:256, 262
AU-1	1	Soda	Coca-Cola/TRADEMARK REGISTERED/MIN. CONTENTS 6 FL. OZS.//BOTTLE PAT.D-105529//LOS ANGELES	Owens Illinois Glass Co. Atlanta	ABM		Tol 71:395, 403
Fea 29	1	Soda	CRYSTAL BOTTLING CO. LOS ANGELES, CAL/THIS BOTTLE MUST NOT BE...		HT crown	1905-1912	Kus pc922
Fea 39	1	Soda	CRYSTAL BOTTLING CO. LOS ANGELES, CAL/THIS BOTTLE MUST NOT BE...		HT crown	1905-1912	Kus pc92
AU-1	2	Soda	EXCELSIOR/SODA WORKS/LOS/ANGELES, CAL. (C.B.S. on base)		Cup, HT blob	1886-1890+	LAD
Fea 29	6	Soda	EXCELSIOR/SODA WORKS/LOS/ANGELES, CAL. (C.B.S. on base)		Cup, HT blob	1886-1890+	LAD
Fea 32	1	Soda	EXCELSIOR/SODA WORKS/LOS/ANGELES, CAL. (C.B.S. on base)		Cup, HT blob	1886-1890+	LAD
Fea 3	1	Soda	EXCELSIOR/SODA WORKS/LOS/ANGELES, CAL. (C.B.S. on base)		Cup, HT blob	1886-1890+	LAD
AU-1	6	Soda	EXCELSIOR/SODA/&/MINERAL WATER FACTORY		Post, HT	1875-18876	M&M 72:30; For pc90
AU-1	1	Soda	GOLDEN STATE BOTTLING CO. L.A. CAL./QUALITY BEVERAGES (base G.S)		Crown	1908-1925	Kus pc92
AU-1	1	Soda	GRAPE DELI BOTTLING CO/LOS ANGELES, CAL.		ABM, crown	1915-1920	Ril 72; Kus pc92
AU-1	1	Soda	H.W. STOLL/LOS ANGELOS/SODA WORKS (sic)		HT	1872-1884	M&M 72:52; For pc90; LAD
AU-1	1	Soda	Hires (on base)		Cup	>1893	Ril 72:117, 258
AU-1	1	Soda	HIRES/REGISTERED/ALL RIGHTS RESERVED//PAT. APP'D FOR		HT crown	1893-1920	Ril 72:117, 258
Fea 29	1	Soda	HYGEIA/MINERAL WATER/CO./LOS ANGELES,/CAL. (HYGEIA on base)		HT, Hutter	1900-1905	Kus pc92; Ril 72:52
AU-1	1	Soda	Los Angeles Coca-Cola//A. B. CO.	American Bottle Co.		1905-1916	Tou 71:30
AU-1	5	Soda	LOS ANGELES/(star)/SODA WORKS (star on base)		HT, Hutter	1884-1912	M&M 72:57; Ril 72
AU-1	6	Soda	LOS ANGELES/(star)/SODA WORKS/THIS BOTTLE/IS REG.../NOT...SOLD//(star)		HT, Hutter	1884-1912	M&M 72:52; Ril 72; LAD
AU-1	6	Soda	LOS ANGELES/(star)/SODA WORKS/THIS BOTTLE/IS REG.../NOT...SOLD//(star)		Cup	1884-1912	M&M 72:52; LAD
Fea 39	1	Soda	LOS ANGELES/(star)/SODA WORKS/THIS BOTTLE/IS REG.../NOT...SOLD//(star)		HT, crown	1884-1912	M&M 72:52; Ril 72; LAD
Fea 40	2	Soda	LOS ANGELES/(star)/SODA WORKS/THIS BOTTLE/IS REG.../NOT...SOLD//(star)			1884-1912	M&M 72:52; Ril 72; LAD
Fea 41	1	Soda	LOS ANGELES/(star)/SODA WORKS/THIS BOTTLE/IS REG.../NOT...SOLD//(star)			1884-1912	M&M 72:52; Ril 72; LAD
AU-1	2	Soda	LOS ANGELES/SODA/&/MINERAL/WATER/FACTORY//H.W. STOLL		HT	1876-1878	M&M 72:52; Ril 72; For pc90
WET	1	Soda	LOS ANGELOS/SODA WORKS (incomplete)			1875-1912+	M&M 72:52; LAD
Fea 29	2	Soda	N.Y.B.D. (not identified)		Cup		
AU-1	1	Soda	NET CONTENTS 6" FL. OZ. REGISTERED (star)//SUNRISE/28/SODA/WATER/LA		Cup		
AU-1	1	Soda	ORIGINAL/Manitou/GINGER CHAMPAGNE/T... MARK REG.../MANITOU/COL...		Post		Sch 70:79 (no date given)
AU-1	1	Soda	PACIFIC/(anchor)/SODA WORKS/L.A. CAL.//THIS BOTTLE IS NEVER SOLD		Cup	1890	LAD
Fea 39	1	Soda	RAMONA/BOTTLING/WORKS/LOS ANGELES, CAL.		HT crown	1905-1908	Ril 72:52; Kus pc92
AU-1	4	Soda	RAMONA/BOTTLING/WORKS/LOS ANGELES, CAL. (P.S. on base)		HT crown	1905-1908	Ril 72:52; Kus pc92

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-3	1	Soda	RAMONA/BOTTLING/WORKS/LOS ANGELES, CAL. (P.S. on base)		HT crown	1905-1908	Ril 72:52; Kus pc92
AU-1	1	Soda	S G Co (outlined in boxes)	prob. Southern Glass Co. (L.A.)		1917-1931	Tou 71:315,332, 357,457
Fea 1	1	Soda	STEINIKÉ & WEINLIG/SCHUTZ MARKE (on base)-GLASFABR/		HA blob	1880-1912	Tou 71:238
AU-4	1	Soda	STEINIKÉ & WEINLIG/SCHUTZ MARKE (on base)-GLASFABR/		HA blob	1880-1912	Tou 71:238
Fea 29	2	Soda	STEINIKÉ & WEINLIG/SCHUTZ MARKE (on base)-GLASFABR/H. HEYE/NIENBURG A/W (reverse)		HA blob	1880-1912	Tou 71:238
AU-1	3	Soda	UNION/SODA WORKS (not the same as S.F. in refs)		Cup		
Fea 54	2	Spirit	A VAN HOBOKEN/ROTTERDAM		HA	1897-1910	Tou 71:250-251; S&a 80:30
AU-1	2	Spirit	BENEDICTINE (cognac)		3-pc, molded	1882-1917	W&W 68:31
AU-1	1	Spirit	C.H.C. & Ss (not identified)		Dark olive	<1900	
AU-1	1	Spirit	FEDERAL LAW FORBIDS SALE OR REUSE OF THIS BOTTLE/HALF PINT	Owens Illinois Glass Co.	ABM scar	>1954	Tou 71:220
AU-1	1	Spirit	HANCE BROTHERS & WHITE PHILADELPHIA U.S.A. (around shoulder)		HT	1870-1920	
Fea 29	1	Spirit	JESSE MOORE-HUNT CO./SAN FRANCISCO			1897-1905	W&W 68:87 #4, 88
AU-1	1	Spirit	MAIR & DOUGALL (around base)				
AU-1	1	Spirit	O'BRYAN BROS. DISTILLERS/LOUISVILLE, KY/FULL PINT		HT, cup	1870-1920	
Fea 29	1	Spirit	PAUL JONES/BOURBON/LOUISVILLE KY. (on seal)			1889-1903	W&W 68:88-89 #7
AU-1	1	Spirit	R-22 (on base) ...PINT (includes design)		ABM scar	>1906	
Fea 29	2	Spirit	THE DUFFY MALT WHISKEY COMPANY/(monogram)/ROCHESTER N.Y. U.S.A.			1886-1917	W&W 68:63
Fea 16	1	Toiletry	(monogram on partial paper label, not identified)		Cup		
Fea 29	1	Toiletry	(monogram on partial paper label, not identified)				
Fea 29	1	Toiletry	COLGATE & CO/PERFUMERS/NEW YORK		HT, cup	1870-1920	Fik 87:56 (no date associated)
AU-1	2	Toiletry	COLGATE & CO/PERFUMERS/NEW YORK		HT, cup	1870-1920	Fik 87:56 (no date associated)
Fea 29	1	Toiletry	DEAN'S/DELIGHTFUL/DENTIFRICE/LOS ANGELES//W T & Co/U.S.A.	Whitall-Tatum Co.	Cup, B&G	1902-1905	Kus pc92; Tou 71:544
AU-3	1	Toiletry	EASTMAN'S/NILE/C..NATION/Andrew Jergens Co./NEW YORK AND CINCINNATI		HT, grd stop	1870-1920	
Fea 29	1	Toiletry	ED. PINAUD, PARIS/LONDRES BRUXELLES//(on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
AU-3	1	Toiletry	ED. PINAUD, PARIS/LONDRES BRUXELLES//(on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
AU-1	4	Toiletry	ED. PINAUD, PARIS/LONDRES BRUXELLES//(on base) Ed Pinaud		HT, cup	1879-1920	Dev 68:76, 70:61; Fik 87:67
Fea 43	1	Toiletry	ED. PINAUD/PARIS			>1870	Dev 68:76, 70:61; Fik 87:67
AU-2	1	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
AU-1	3	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
Fea 29	4	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
AU-6	1	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
Fea 40	1	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
Fea 41	1	Toiletry	ED. PINAUD/PARIS (on base) Ed Pinaud (partial)		HT, cup	1870-1920	Dev 68:76, 70:61; Fik 87:67
Fea 43	1	Toiletry	ED. PINAUD/PARIS (w/bouquet in basket under shoulder)			>1870	Dev 68:76, 70:61; Fik 87:67
Fea 29	1	Toiletry	ESPEY'S/FRAGRANT CREAM		Cup	1880s-1912	Dev 68:32; Fik 87:92 suggests 1929-1948
AU-1	2	Toiletry	FLORIDA WATER// (partial paper label, not identified)		Cup	>1854	Fik 87:244
Fea 43	1	Toiletry	FLORIDA WATER/COFFIN-REDINGTON Co./SAN FRANCISCO		HT, Cup	1913-1920	Fik 87:243
Fea 49	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN... (partial)			>1854	Fik 87:244
Fea 43	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN... (partial)			>1854	Fik 87:244
AU-7	2	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
AU-1	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
AU-4	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
AU-6	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
Fea 54	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
ESC #10	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK			>1854	Fik 87:244
Fea 22	1	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
AU-1	4	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK		HT, post	1870-1920	Fik 87:244
Fea 29	7	Toiletry	FLORIDA WATER/MURRAY & LANMAN/DRUGGISTS/NEW YORK (2 sizes)		HT, post	1870-1920	Fik 87:244
AU-1		Toiletry	FLORIDA WATER/MURRAY LANMAN			c>1842	Fik 87:244
AU-1	1	Toiletry	Glo-ray (not identified)		(S)ABM		
Fea 29	1	Toiletry	HOYT'S/10/COLOGNE		HT, cup	1897-1920	Fik 87:64; SeC 1897
Fea 29	1	Toiletry	J & E ATKINSON/LONDON		Cup		
AU-1	1	Toiletry	LUBIN/PARFUMEUR/PARIS		HT, ground	1899-1920	Dev 70:56
Fea 1	1	Toiletry	Palmer		HT, post	1870-1920	Fik 87:185
Fea 29	1	Toiletry	Palmer		HT, post	1870-1920	Fik 87:185
Fea 39	1	Toiletry	PALMER'S/Florida Water/NY			1871-1970	Fik 87:211
Fea 29	1	Toiletry	PATENTED MAY 15TH 1894//LUNDBORG/N.Y.		HT, grd stop	1894-1899+	Fik 87:171, 244; Dev 70
Fea 29	1	Toiletry	Pompeian Cream/made by/Pompeian Mfg. Co./Cleveland, Ohio.		HT, cup	1874-1920	Dev 70:61
Fea 29	1	Toiletry	POMPEIAN MASSAGE			>1874	Fik 87:93

## METRO RAIL GLASS MARKS

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PROVENIENCE	MIN#	CATEGORY	MAKER'S MARK	BOTTLE MANUFACTURER	TECHNOLOGY	DATES	REFERENCES
Fea 29	1	Toiletry	POND'S ...		HT	1870-1920	Fik 87:120; W&W 71:73, 133; Dev 68:76, 70:6
Fea 32	1	Toiletry	RICHARD HUDNUT/CHEMIST/925 BROADWAY/(ONLY)/NEW YORK (partial paper)		HT, cup	1888-1920	Fik 87:167
AU-1	1	Toiletry	SAMPLE/BALDWIN'S/PERFUME		HT, cup	1870-1929	
AU-1	1	Toiletry	T (on base, not identified)		HT		
AU-2	1	Toiletry	T.C.W. CO./U.S.A. (Jar)	T. C. Wheaton Co.	(S)ABM	>1888	Tou 71:492, 527 (poss>1938)
Fea 57	1	Toiletry	VIOLET/PARIS (Not Identified)				
AU-1	1	Water?	VICHY/'ETAT (on base)		Cup		
AU-1	1	Wine	FRATELLI BRANCA/(symbol)/MILANO (shoulder seal-Fernet-Branca Bitters)	Fratelli Branca, Milan		1890s-1910	Gre 75:237; S&a 80:55
Fea 29	1	Wine	FULL 1/2 GALLON/STAR WINE CO./WHOLSALE .../WINE .../LOS ANGELES, CAL.	Star Wine Co., Wholesale, Los Angeles	Cup		W&W
AU-1	2	Wine	MARIE BRIZARD & ROGER/MB R/(symbol)/BORDEAUX SOUTH.../CAL. WINE CO/220 W. 4TH ST./LOS ANGELES/CAL.			1900-1916	W&W 68:133
Fea 29	1	Wine					



APPENDIX VIII

MACROBOTANICAL REMAINS FROM THE LOS ANGELES  
METRO RAIL EXCAVATIONS

Elizabeth A. Honeysett

A total of 90 seeds was collected for identification. Six families and seven genera are represented. Over half the seeds are from two genera in the squash family (Cucurbitaceae). Table 1 presents the results by feature, excavation units and other (auger test, trench etc.). A brief description of each taxon follows.

TABLE 1. Identification results.

FEATURES

Feature 16

- (1) 6 seeds Momordica grosvenori (Bitter Melon)
- (2) 6 seeds Momordica charantia (Bitter Melon, Foo-qua)

Feature 18

- (1) 2 Arachis hypogaea (peanut shells)
- (2) 1 seed fragment Canarium album (Chinese Olive)
- (3) 1 seed Momordica grosvenori (Bitter Melon)

Feature 21

- (1) 1 Prunus sp. pit

Feature 22 Stratum B

- (1) 16 seeds Benincasa hispida (Winter Melon, Dong gwa)

Feature 23

- (1) 1 Prunus sp. pit fragment (peach)

Feature 24

- (1) 2 seeds Momordica grosvenori (Bitter Melon)
- (2) 1 burned seed Litchii chinensis (Lychee)
- (3) 1 burned Prunus sp. pit
- (4) 2 seeds Momordica grosvenori (Bitter Melon)
- (5) 1 seed Canarium album (Chinese Olive)

Feature 28

- (1) 1 fragment Arachis hypogaea (peanut shell)
- (2) 2 halves Prunus persica (peach pit)

Feature 29

- (1) 1 seed Momordica grosvenori (Bitter Melon)
- (2) 1 Prunus sp. pit (peach)
- (3) 1 burned seed Litchii chinensis (Lychee)



Feature 30

- (1) 1 seed Canarium album (Chinese Olive)

Feature 31

- (1) 1 seed Momordica grosvenori (Bitter Melon)

Feature 32

- (1) 9 seeds Benincasa hispida (Winter Melon)  
(2) 1 seed Momordica grosvenori (Bitter Melon)  
(3) 2 seeds Canarium album (Chinese Olive)

Feature 33B

- (1) 1 fragment Arachis hypogaea (peanut shell)

Feature 38

- (1) 1 Prunus sp. pit (peach)

**UNITS**

Unit 1. Level 4 (60-80cm)

- (1) 2 seeds Momordica grosvenori (Bitter Melon)

Unit 2. Level 2 (20-40cm)

- (1) 3 burned Litchii chinensis (Lychee) seeds (one in 2 halves)  
(2) 1 seed Canarium album (Chinese Olive)

Unit 2. Level 3 (40-60cm)

- (1) 2 seeds Momordica grosvenori (Bitter Melon)

Unit 2. Level 4 (60-80cm)

- (1) 1 seed Momordica grosvenori (Bitter Melon)  
(2) 1 unknown - not a seed

N19/E2. Sewer Trench

- (1) 1 Litchii chinensis nut (Lychee)  
(2) 1 seed Momordica grosvenori (Bitter Melon)

N24/E2. Level B

- (1) 2 Prunus persica pits (peach)

**OTHER**

Trench #2

- (1) 2 whole, 4 halves Prunus persica pits (peach)  
(2) 2 seeds Canarium album (Chinese Olive)  
(3) 3 Litchii chinensis seeds (Lychee)

Auger 8k-7c

- (1) 1 seed Canarium album (Chinese Olive)

Auger 8k-9c

- (1) 1 Litchii chinensis seed (Lychee)

UPT 2111U Sample 2. F 2B

(1) 1 weathered nutshell fragment c.f. Ginkgo biloba (White Nut)

Guidewall Trench & Surface collection

(1) 1 seed Canarium album (Chinese Olive)

In Feature 24 while screening the sample, a limpet shell and a fish scale were also observed.

### Description of Taxa

#### Burseraceae

Ten seeds of Chinese Olive (Canarium album) were collected. The distinctive ribbed seeds taper to pointed ends. The dried wrinkled pulp surrounding the stony seed is preserved with salt.

#### Cucurbitaceae

Two genera and three species are represented. Twenty-five seeds of Benincasa hispida (Thunb.) Cogn. (winter-melon, wax gourd) were identified. Winter-melon fruits have a dark green thin skin that is hard and waxy, hence their other common name wax-gourd. The fruits are consumed during various stages of maturity. Mature fruits can be quite large, weighing up to 45 kg. Chunks of mature winter-melon are used as a vegetable in soups. Two species of bitter-melon, Momordica grosvenori Swingle (20 seeds) and Momordica charnata L., (6 seeds) were also identified. The oblong fruits are light green with lumps and are bitter. The bitterness is removed by parboiling in salted water before cooking.

#### Fabaceae

Four peanut (Arachis hypogaea L.) shell fragments were identified. Peanuts are an important staple in the Chinese diet. It is believed that the peanut was introduced to China from South America in the sixteenth century (Ho 1955).

#### Ginkgoaceae

One very weathered shell fragment was tentatively identified as white nut (Ginkgo biloba L.). The maidenhair-tree has been cultivated as a sacred tree in Buddhist temple courtyards for more than 1000 years (Duke 1989). The seeds are surrounded by a nauseating pulp that is removed before boiling or roasting. A delicacy served at feasts and weddings, traditional lore maintains that the white nuts aid digestion and alleviate the effects of alcohol. The pulp and kernels are used in folk remedies in China.

## Rocaceae

Six whole peach pits (Prunus persica) and six halves were collected. Three other pits were identified to the genus level.

## Sapindaceae

Ten lychee (Litchii chinensis) seeds were collected. The lychee is native to the tropical and subtropical regions of southern China where it has been cultivated for several thousand years (Duke 1989). The fleshy pulp enclosing a single seed is translucent, juicy and sweet in the fresh state. The dried fruits are dark brown, wrinkled and sticky.

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# I A S

## Institute for Archaeological Studies

June 18, 1991

Roberta Greenwood  
Greenwood and Associates  
725 Jacon Way  
Pacific Palisades, Ca.

Dear Roberta,

Thank you for your letter and the wonderful box of samples! I hope that, by now, your lectures and urgent work are completed. Somehow, though, I doubt that things slow down for you for any length of time. You, Priscilla, and I seem to have only one speed, typically termed "do it, yesterday".

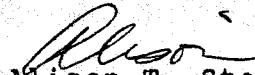
The following is the spectographic overview of some of the samples that you sent. We ran twelve of your sherds, examining the glaze and the clay body of each. If you need the artifact numbers for your report, let me know, but I doubt that there will be any individually useful information. What is important, although I don't know how or why it has occurred, is the identifiable chemical differences that seem to occur on wares having only a twenty to forty year difference in manufacture. What we are seeing elementally are potentially identifiable changes in chemistry between the wares of the following periods: 1850-1870's, 1880-1900, and the early 20th century wares.

We compared the results of the analysis of your specimens to those obtained from our examination of overseas wares from Idaho, Nevada, and Oregon. The following pages briefly discuss the discriminating elements/element combinations for greenwares, brownwares, Chinese polychromes (white with applied colors), and blue and white wares of Chinese and Japanese origin.

The comparative samples from Idaho were from mining sites, mostly from Darby Stapp's work on 1870-1880 sites. The Nevada material was from an urban site, which was documented as having an Asian population between 1880-1890. The Oregon site has a fairly tight date of 1890-1905. (I apologize for not having the specific occupation dates for Nevada and Idaho, but I am writing you from the Museum lab, and the files are at the Westdale office.)

As always, if you have any questions, do not hesitate to write or call. The Westdale address should eliminate lost mail!

Sincerely,

  
Alison T. Stenger  
Director of Research

Greenwood and Associates  
OES Analysis of Selected Artifacts  
Los Angeles Site Material

June 15, 1991  
see cover letter

Greenwood samples with comparisons to: Idaho 1870-1880  
Nevada 1880-1890  
Oregon 1890-1905

**BROWNWARES [Multiple Sites]:** This is the only ceramic artifact type containing vanadium (V) in both the clay and glaze. Thus, the brownware clay and glazing materials were consistently gathered from geologic deposits different from any of those used for the other Overseas ceramic types. This is partially explainable as the tested brownwares represented portions of product containers. These hollowwares may have been produced by various pottery works that were closely located to each other, with the finished wares then distributed to food and beverage processing sites. All of the brownwares from sites in Nevada, Idaho, and Oregon contained V. (A shallow pan-form brownware has been documented, but not tested.) Notably, a post-1932 brownware whiskey container did not contain this element.

The clays and glazes of the brownwares at all of the sites contained chromium (Cr). Only the Japanese attributed greenwares of the late Overseas period (occasionally) contained Cr in the glaze.

Two monochromatic greenware glazes from Oregon contained V, but in these specimens increased amounts of potassium (K) and sodium (Na) were present. The Oregon site did, however, contain numerous contaminants within the collection area.

**BROWNWARE GLAZES [Greenwood's]:** The later Overseas period appears to be characterized by lower quantities of manganese (Mn) than the earlier brownwares. The consistent presence of Na, and the occurrence of Ni, occur only in the Greenwood samples. Also of note is the occurrence of boron (B), which is exclusive to this group of (Greenwood) brownwares. Potential identifiers may be expanded in the future to include Cd and Sr, as well as levels of Ca.

**BROWNWARE GLAZES [non-Greenwood]:** A notable absence of boron occurs, and detectible levels of Na and Ni are rare. An increase in Mn occurs.



BROWNWARE CLAYS [Greenwood]: Samples contained Cr and Na. Each sample also contained vanadium (see discussion under BROWNWARES: multiple Sites). All of the (Greenwood) Brownware samples contained boron.

GREENWARE GLAZES [Greenwood]: The later period greenwares or green glazed wares contained less Mn, K, and Na than the earlier wares. The earlier sites' specimens (Idaho and Nevada) reflect substantially higher amounts of Ca. Importantly, the glazes of the three Greenwood samples that were tested have been comparable to the Greenwood Japanese blue and white sample, in content of Mn, K, and Na.

GREENWARE CLAYS [Greenwood]: Comparable to the Japanese blue and white transfer decorated wares in their content of K and Na. The other elements were not present in diagnostic amounts. The monochromatic and polychrome greenwares were nearly identical, except for the lack of Fe in the polychrome sample that we tested.

CHINESE WHITE AND POLYCHROME GLAZE [Greenwood]: Comparable to the Chinese blue and white glaze in Ca. \*Other element contents were not interpretable.

((\*NOTE: The Pb level of this sample (glaze only) is extremely high! Don't eat Chinese food from the white stoneware dishes that have multiple color enamel decorations--such as the chop suey dishes restaurants still use. Pass the word, please.))

CHINESE POLYCHROME CLAY (Greenwood): The clay of the sample is comparable to the Chinese blue and white stoneware clay in the lack of Co and lessening of Na and K. The Japanese attributed ware's body is very different in its amounts of Co, K, and Na.

# I A S

## Institute for Archaeological Studies

June 28, 1991

Roberta Greenwood  
Greenwood and Associates  
725 Jacon Way  
Pacific Palisades, Ca. 90272

Dear Roberta:

Thank you for your letter. I am pleased that our results may prove useful to you. My only concern is that the potential significance of our findings may lead all of us down a rosy but false path! Fortunately, controlled excavations of sites such as Metro Rail, by researchers such as yourself, should give us the controls that will be necessary to validate any actual pottery chronologies.

I can only give you five catalogue numbers. The other samples were taken from the bulk bagged groups. I can provide you with their descriptions, but their archaeological identifications will have to be sourced to the areas from which you obtained the ceramics that were collected in multiples. (With us, this usually means surface collections or rubble zones.) Catalogue numbers are: UPT-174 [brownware Tiger whiskey type of bottle, on earthenware body], 406-128 [monochromatic greenware, of Japanese type], A86-162 [blue and white transfer decorated ware of Japanese type], UPT-4112 [Chinese white glazed stoneware], and UPT-477 [unglazed, incised decoration and stoneware body, similar to wares suggested to be of local manufacture]. Other wares were: brownware food or spice jar of thinly potted, globular form, and with flat base; brownware straight walled storage jar or large size, having a stoneware body with a yellow cast; polychrome bowl having green glazed ground and of Japanese type; Chinese polychrome deep dish (?) with decoration over a white ground; blue and white decorated bowl of Three Circles pattern and of Chinese stoneware (also called porcellanous stoneware); monochromatic green glazed bowl of Japanese type, and a brownware Tiger whiskey bottle with earthenware body but Chinese appearing glaze.

In answer to your question about the Chinese polychrome piece, we consider the body to be porcellanous stoneware, as it has attributes of both ceramic types. It is not really translucent in cross section, it is not completely impervious to water, but it is well vitrified and high fired (according to the literature). I do have concerns about the literature, though, as I just refired a Song piece to 50% of the supposed original firing temperature, and it nearly became my first melt-down. So much for hearsay. (Mike Tite, Nigel Wood, and I spent many an hour in Beijing discussing stoneware alternatives. Mike uses porcellanous stoneware in his literature.)

In answer to your question about having the data reflected by tables, my answer is that if you'll remind me once or twice, I shall

generate some. I do have some that are about 3/4 completed now, but we've just started back into the field for 30 days. So, if you don't mind dropping me a post card to remind me, I will make time finish and send some tables to you. The ones that I have been working on are not elegant; just easily interpretable bar graphs.

We would appreciate a few additional samples. If you have any that are nearly complete in profile (ie. one vertical section complete), we would appreciate receiving it, or them. We are hoping to do some sort of exhibit with overseas materials this winter, when our expanded offices are completed. I think the landlord is optimistic in his estimation of completion dates, but we'll see.

Thank you for the encouraging letter, and hope the catalogue numbers are of use. Please keep in touch when you're in from the field, and I will do the same.

Best regards,



Alison T. Stenger



APPENDIX X

United States Coins

The excavations yielded 33 United States coins and a single token. Of those with legible dates, the time span represented ranged from 1871 to 1920. Including partial dates, 12 were minted in the nineteenth century, 15 represented the 1900s, two were Indian head cents which were made from 1860 to 1909, and one was a liberty head nickel which could have been struck any time between 1883 and 1912. The denominations, any legible mint marks, dates, and feature associations are listed in Table 1.

Table 1. United States Coins

Cat. No.	Feature	Denomination	Date
235	A-130, box	.01	192_ S, Lincoln
302	A-130, main yard	.01	19__ P, Lincoln
1190	Trench N-23	.10	1905
1248	"	.10	1883
1307	2	.02	1871
1559	1B	.10	1898
2050	12	.01	1890
2076	12	.10	-
2486	15	.01	1864-1909, Indian
2680	A-135, bge.	.25	1898
3007	29	.10	1905
3204	29	.01	1904
3205	29	.25	1900
3301	29	.01	1876
3302	29	.01	1860-1909, Indian
3306	29	.25	1903
3902	17A	.05	1900
3903	17A	.01	1892
3904	17A	.01	1892
3951	29	.01	1893 P, unworn, burned
4472	33B	.05	-
4574	Unit 1 ?	.01	1886
4819	35	.10	1899
4821	35	.05	1883-1912, Liberty
5722	11	5.00	Gold, 1901
6136	42	.05	1904
6137	42	.01	18__
6681	49	.01	1912
7058a	51	.01	1912
7058b	51	.01	1918
7058c	51	.01	1919
7058d	51	.01	1920
7058e	51	.01	-

The dates on coins refer only to the year of manufacture, and do not necessarily reflect the time when they were circulated or lost. A coin found within a feature does, however, indicate a year before which it could not have been deposited (Table 2). This may not coincide with the beginning of the deposit - only to the earliest coin found therein.

Table 2. Dates of Coins within Features

Feature	No. of Coins	Date Range of Coins
1B	1	1898
2B	1	1871
11	1	1901
12	2	1890 - ?
15	1	1861-1909
17A	3	1892-1900
29	7	1876-1905
33	1	?
35	2	1883 - ?
42	2	18__-1904
49	1	1912
51	5	1912-1920

With all appropriate caution, then, it can be suggested that Features 49 and 51, in Locus 4, were later than the others.

The token (Cat. 6039, Feat. 40) is a cuprous alloy in poor condition, 2.2 cm in diameter. It has a low border on both sides, with plain (not knurled) edges. The obverse is embossed "Olympic Hall" and the reverse reads "5 Cts in Trade." According to the city directories, Olympic Hall was a saloon in business at 119 West 1st Street, at least between 1900 and 1911.



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- Suellen Cheng, director of the Chinese Historical Museum, Los Angeles Pueblo (various telephone conversations and interview with Lynn Kronzek on January 30, 1991).
- Prof. Hung-hsiang Chou, University of California, Los Angeles.
- Thomas Cleary, San Clemente, descendant of Matthew Keller (written communications and loan of archival material to Roberta S. Greenwood on August 6, 1991).
- Dr. Donald Corbett, D. D. S.
- Michael E. Engh, S.J., assistant professor, Loyola Marymount University, Los Angeles (written communications to Roberta S. Greenwood on February 26, 1991).
- Michael Forbes, Los Angeles Historical Bottle Club.
- Marian Francis, Playa del Rey, granddaughter of Matthew Keller (interview with Lynn Kronzek on June 12, 1991).
- George Gumerman, Ethnobotany Laboratory, University of California, Los Angeles.

Michael Jarel, director of the Southern Pacific Historical and Technical Society, Sylmar (various telephone conversations and written communications to Lynn Kronzek on October 1, 1991).

David Kamansky, Director, Pacific Asia Museum, Pasadena.

Prof. Robert L. Kibler, Art Department, Glendale College.

Ed Kuskie, Los Angeles Historical Bottle Club. [Kus]

Emma Louie, Los Angeles, Chinese Historical Society of Southern California (interview with Lynn Kronzek on April 25, 1991)

Mark Roeder, Paleo Environmental Associates. [Roe]

Sternad, Frank, Los Angeles Historical Bottle Club. [Ste]

Prof. Enzheng Tong, University of Chengdu, China.

### Maps

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1855 Vineyard of Mr. B.D. Wilson, map #58.

1884 Zanja, map #5535.

1888 Apablasa Tract, map #2182.

1899 Chinatown, map #4216.

n.d. Gas Mains, map #5551.

1902 Proposed Storm Sewers, map #4346.

1909 Location of Flushtanks of Sewerage System, map #5625.

1914 Drainage Districts, map #5025.





## APPENDIX I

### TRANSLATIONS AND NOTES

Examples of calligraphy on selected tablewares, storage vessels, bottles, and opium pipe bowls, together with other artifacts of interest, were shown to several consultants. The notes which follow do not nearly exhaust the opportunities for translation of characters and interpretation of symbols, but are intended to illustrate the potential for dating, understanding the meaning behind artistic representations, and interpreting - both literally and figuratively. Those who gave graciously of their time include:

1. Professor Hung-hsiang Chou, Associate Professor, East Asian Languages and Culture Department, UCLA.
2. Mr. Wai Kin Tam, Senior working at the Chinatown Teen Post, born in Canton, and his translator, Mr. Don Toy, Director of Chinatown Teen Post.
3. Prof. Enzheng Tong, visiting professor from University of Chengdu, Szechwan Province, China.
4. Mr. David Kamansky, Director of Pacific Asia Museum.
5. Mrs. Suellen Cheng, Museum of Chinese American History, El Pueblo.
6. Mr. and Mrs. Paul Louie, Chinese Historical Society of Southern California.
7. Mr. Eric H. F. Chau, Hong Kong Television Services.

All emphasized the difficulty in translating the inscriptions into English, for a number of reasons. Where artifacts were broken, often presenting only a few characters, the lack of full context obscured the meaning. Chinese writing took several different forms over the years, from the archaic style to less formal, more stylistic representation. Basemarks on ceramics or embossments on glass were often worn or not clear. In each example below, the translation is attributed to the translator. The renderings of Chinese place and personal names into English are phonetic, to the best of the reporter's ability.

### CHINESE PORCELAIN

UPT-69

Porcelain tea bowl base fragment, orange glaze on the outside with "CHINA" stamped on the base. This was an export item (Prof. Chou), and probably shipped after 1890.

UPT-126

Porcelain tea bowl base, walls painted with Double Happiness symbols. The hand drawn mark on the base reads "ANIHD." This is possibly the painter's version of the word "CHINA" - a mirror image

with minor error. The N on the base is reversed. Most likely an export item. (Prof. Chou)

UPT-189

Small bowl, soy or condiment, with Four Seasons design on orange glaze. There are four Chinese characters stamped on the base. The stamp was pressed unevenly on the surface and therefore could not be interpreted. (Prof. Chou)

UPT-219

Celadon rice bowl base with blue hand drawn mark under glaze. The mark is elaborate but makes no sense; it is probably intended for export. (Prof. Chou)

UPT-417

White teapot lid, genre painting over glaze of a figure, with two sets of characters on either side. The figure represents ZHUGE LIANG, a Confucianist and important protagonist in the story "Romance of Three Kingdoms." The Three Kingdoms period was A.D. 221-265. (Prof. Chou). An elderly member of the Chinese Historical Society of Southern California translated the characters as "GEE GOUGH LEONG," which Prof. Chou called a Mandarin translation.

UPT-2014, UPT-2338

Blue on white porcelain rice bowl with a dragon flying among the clouds design. The base has hand drawn characters that mean: "To play (to enjoy) jade" or "jade pleasure" or "quality as good as jade for customer to enjoy." (Prof. Chou)

UPT-3257

Porcelain rice bowl base with four Chinese characters in blue: "Securely selected by YU CHENG." This is a personal name or name of a company, i.e., quality control. (Prof. Chou)

UPT-3345

Stylized Double Happiness rice bowl base, orange glaze outside, some indication of enamelling. "Made in the years of GUANG XU." 1875-1907. (Prof. Chou). Note: Kuang-hsu - in Medley 1976.

UPT-3753

Rice bowl base, interior hand painted over the glaze with carp and seaweed. "God bless King GUANG XU." Guang Xu was the last Emperor of China from 1875-1907. The last two characters on the bowl base are reversed for no known reason. (Prof. Chou) Medley (1976) gives an alternate spelling of KUANG-HSU for the Emperor during this period.

UPT-4080

Tea bowl hand painted with enamelled Buddha known as Lohan. "Made in the years of QIAN LONG of the great Qing Dynasty." 1736-1795. (Prof. Chou) Note: also Ch'ien-lung (Medley 1976).

UPT-4939

Porcelain rice bowl with red Double Happiness on interior; four smaller Double Happiness symbols on exterior, each surrounded by five bat motifs. Base stamp of four characters is the very clear seal of a company, "made by SHENG MAO." (Prof. Chou)

UPT-5121

Porcelain tea bowl, orange exterior with polychrome design, probably of treasures. "Made by Palace King." (Prof. Chou)

UPT-5549

Base fragment of a Four Seasons bowl with a clear square stamp. The writing on the mark is in modern form: "Made by CHENG HSUN YI." Cheng = correct; Hsun = orderly; Yi = word meaning businessmen do not cheat. The seal therefore comments on the good character of the company. (Prof. Chou)

UPT-5591

Base of a large Four Seasons serving bowl with a base stamp of four Chinese characters: "Made by the company DING TAI (great)." (Prof. Chou)

UPT-5615

Base of Four Seasons serving bowl. Square seal and translation like UPT-5549 above, but in the archaic style. (Prof. Chou)

UPT-5701

Large Four Seasons serving bowl base and side. "God bless King QIAN LONG." He was the Emperor in the earlier part of the Ch'ing Dynasty - 1736-1795. The last two characters are reversed as above. (Prof. Chou). Alternate spelling in Medley (1976) is Ch'ien-lung.

UPT-5816

Large Four Seasons serving bowl base. Four distinct Chinese characters surrounded by key pattern frame. "The Kiln of WU RON SHENG" - no indication of area, just name of the kiln. (Prof. Chou)

UPT-49

Elegant panelled footed bowl. The panels are decorated with two roosters on two adjoining panels; the rest consists of floral polychrome decoration. Enamelling is on both the inside and on the base of the bowl. The Chinese name for this type of bowl is "BA-JIAO-WAN" or "eight-corner-bowl." (Prof. Chou)

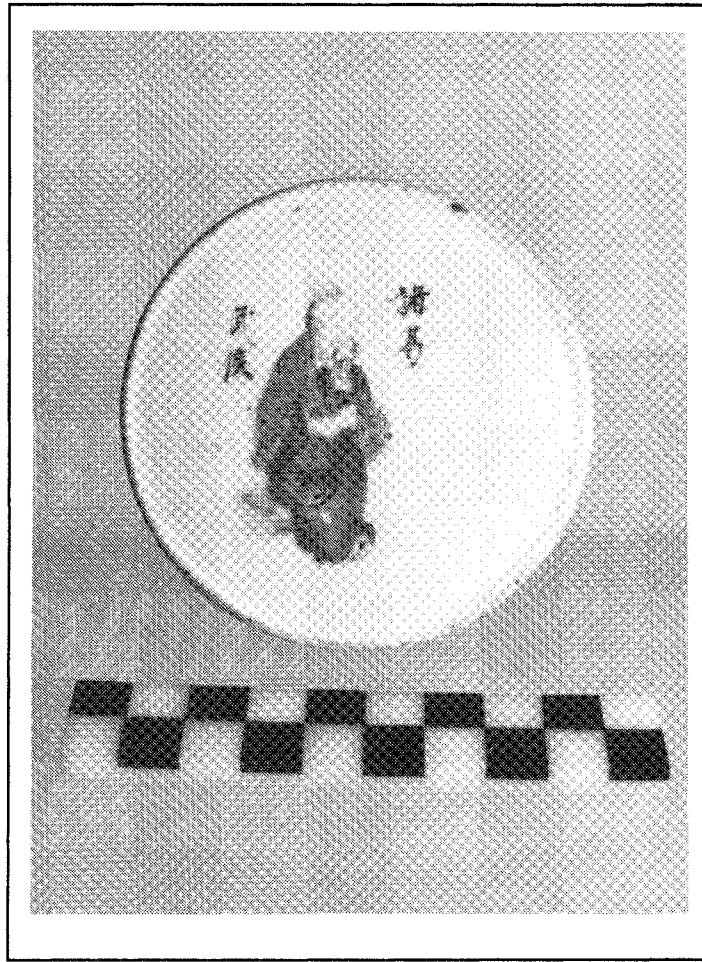


Figure A.I.1. Porcelain  
Jar Lid

UPT-417

White teapot lid (Figure A.I.1) with figure of Kung Fu = Confucius.  
(Prof. Chou)

UPT-626

Small porcelain bowl fragment with overglaze pictures of three women and two Chinese characters. This is a scene from the fictional story, "The Dream of Red Chamber." One of the maids is called YIN CHUN, meaning "where spring comes." (Prof. Chou) Prof. Tong offered the same translation, and an alternative which would read "Story of the Storm"; it is a famous story and it has the name of a girl.

UPT-1744

Fragment of tea or soy pot, white porcelain with four Chinese characters. Since the beginning section is missing, the characters made no sense. (Prof. Chou)

UPT-2865

High footed base of an oval serving dish with a green wave pattern on the footring. The interior shows a hand-painted man and Chinese characters. There are two parts of an inscription that is either a poem or a political statement. "FU CHENG" - first emperor of China in the 3rd century BC was the first to unify China. He was a legalist opposed to Confucianism, and burned all books by Confucius. One book was hidden in the wall of a building and after the downfall of the QIN dynasty (221-206 BC), the book was found and recorded. (Prof. Chou)

UPT-3042

Porcelain rice bowl, handpainted, poem with 18 Chinese characters:  
"I don't care to read classics  
I enjoy the nature scenery." Ch'ing dynasty. (Prof. Tong)

A slightly different interpretation is that the poem is intended to describe what is depicted on the bowl - bananas.

"Bored with work  
reflecting on nature and its truth." (Suellen Cheng)

UPT-3300

Porcelain bowl lid with fine line drawing of three women, two Chinese characters: "Ladies are playing games (Chinese chess?)." Since the other characters are missing, the full translation cannot be made. (Prof. Chou)

UPT-3138

Porcelain rice bowl with overglaze painting of scenery and a partial poem. The poem describes the scenery: "Floating cloud, stream, butterfly, flowers and beautiful music." The base stamp has two characters but they could not be deciphered. (Prof. Chou) Suellen Cheng rendered the poem as a description of water flowing, music, and watching butterflies.

UPT-3250

Footed oval serving dish, white porcelain with Chinese characters. "Lotus leaf shape -LEE CHING LEAN"-- green lotus. (Suellen Cheng)

UPT-3259

White porcelain rice bowl fragments with blue double line below rim on the outside, partial painting of a woman, and seven Chinese characters. Another rim fragment has a single character but it does not make interpretation possible. The writing style, however, is the same on the two pieces so that they come from the same bowl. The seven characters read: "Ladies never forget the meaning (or sensation) of the spring." (Prof. Chou)

UPT-3399

Porcelain rice bowl, white interior, orange exterior with Chinese characters in white. This represents a poem - normally there are five or seven characters in a line of a poem. Four characters



read: "The day is warm, the wind is peaceful," the 5th is unknown, the 6th means "younger brother or ranking," and the 7th one is missing. Prof. Chou thought that the interpretation of the 5th and 6th characters could be "I passed the examination," i.e., passed the civil service exam for government or "with younger brother or brotherhood."

UPT-3400

White porcelain rice bowl half, covered with Chinese characters and indications of scenic painting. The poem reads:

"Underneath of the green banana tree,  
The two beauties sit side by side,  
Chanting poems."

The painting therefore should depict two ladies studying poetry. There is also a date drawn in old fashioned way which repeats every 60 years. The possible date therefore is 1900, 1840, 1780, or 1720. The base stamp could not be deciphered. (Prof. Chou)

UPT-3755

Rim fragment of a white porcelain tea bowl with a painted figure and three Chinese characters. The figure resembles various Buddhas or fairy tale figures. The characters are the name of the Buddha but cannot be read. (Prof. Chou)

UPT-4542

Porcelain tea bowl, covered with pink glaze that is fragile and flakes off. The Chinese characters are negative, i.e., the uncolored white porcelain body in contrast to the applied surface color. Description of indoor flower fragrance: "Flavor of flower exist in very deep remote valley." This refers to a spiritual place, not real. (Prof. Tong)

UPT-5674

Rice bowl rim fragment with leaf design and three Chinese characters: "banana tree." (Prof. Chou)

UPT-5933

Rice bowl with genre and Chinese characters. "Made by MOU TAI in the autumn of the year REN-YIN." This is the 60-year cycle of the date and the signature of the artist. The date could be either 1843 or 1903. (Prof. Chou)

UPT-5993 and UPT-6024

Handpainted blue on white lid with knob handle. Stylized bat symbol.

UPT-6523 and 6341

White porcelain rice bowl. Outside covered with various red stamps overglaze. Stamps are mainly of good luck. They are of Taoist design with varying designs and inscriptions, such as "virtue,"

"righteousness," "famous river," "mountain does not have to be very tall." The last of these means that if a hermit lives on the mountain, it will become famous. (Prof. Chou)

UPT-5912 and 6284

White porcelain plate with enamelled design over glaze depicting a rooster and chrysanthemums. Chinese inscription in black with artist's name in red and a red seal on the base. Seal is of the year YONG ZHI, the last Imperial Dynasty (1862-1874). The inscription reads: "Pure and elegant flowers of the autumn," i.e., chrysanthemums. The artist's name is YI MAO. (Prof. Chou)

UPT-5917

White porcelain tea bowl with overglaze floral design and gilding. Prof. Chou thought that the vessel was of Chinese origin based on its shape and flared rim.

UPT-5933 and UPT-6141

Two white porcelain rice bowls with hand painted enamelled genre design and Chinese inscription: "Desire to see picture (illustration)." The woman is looking at a book with writing and is looking forward to seeing the picture. The artist is MAO TAI, and the year is REN-YIN; in the 60-year cycle, this would be either 1843 or 1903. (Prof. Chou)

UPT-300

Tea cup stand, 1860s -1880s. (Mr. Kamansky)

406-304

Rim shard. Transfer print. Could be either Japanese or Chinese, ca. 1900+. (Mr. Kamansky)

UPT-2846

Plate with 1000 butterfly design. Nice example, dates from 1875-1915. (Mr. Kamansky)

UPT-2864

Plate with dragon motif. This is the imperial dragon with five claws. Mr. Kamansky was not seriously suggesting that this was a dynastic piece; instead, perhaps dates to late years of the Ch'ing, when the system and government were so corrupt and degraded that potters used this formerly restricted symbol with impunity. If so, pre-1915.

UPT-3159

Porcelain rice bowl with polychrome dragons on yellow. This is a more expensive ceramic type. It has a fine dragon and flames, over the royal yellow ground. (Suellen Cheng)

## CHINESE STONWARE

UPT-940

Small stoneware plate. Unornamented center surrounded by unglazed (biscuit) ring on the interior, stamped blue design on cavetto. Southeast Asian plate, also made in China, for sale throughout Asia. Pattern hand painted; perhaps unending knot with fillet. Dates to the nineteenth century. (Mr. Kamansky)

UPT-43

Brown stoneware neck and shoulder fragments of an ink bottle with Chinese characters reading: "Fragrance from ink will last forever. Produced in East Kwangtung [Guangdong] province." (Prof. Chou)

406-139

Small brown stoneware jar or bottle, very thin and finely made. Could be peasant ware and used as oil or unguent bottle. Probably sealed with a cork or a piece of wood covered with cloth. (Mr. Kamansky)

UPT-475

a. Large stoneware shipping jar (47 cm high) or storage vessel with restricted neck, shoulder seam, and three Chinese characters stamped on the shoulder. The first two characters stand for the name of the company that produced the pot: "CHENG JI" (sincere company). The third character stands for the numeral 6. This could mean 6th in the group of production or factory number 6. (Prof. Chou). Identical to a Great Basin Foundation specimen 1987:243). The translation given for the Riverside example is: "CHE'NG CHI LIU - honest record six."

b. Name of Company: "SING GAY LOK." May have contained preserved fish, processed and ground like paste. Bean cakes, etc., are to be found in smaller jars. (Mr. Toy and Mr. Tam)

c. CHENG GEE LEU = "honest store no. 6" (Suellen Cheng)

UPT-2886

a. Brown stoneware jar with brown glaze Chinese characters on an unglazed panel on the shoulder. Similar to UPT-4838. The name of the company is "eternal spring garden." Professor Chou thought that the vessel could have been used to ship wine or soy sauce.

b. "Jar for preserved vegetables." The company may be Japanese since the characters are more simplified: CHONG HAI YOUN. (Mr. Toy and Mr. Tam)

UPT-3333

Wine bottle fragment with embossed characters on the base. The base depression is partially filled with plaster. "XIN HUA JI" translates to New China Company. Prof. Chou suggested that the

plaster may have been used to fix the bottle in a certain place such as a railing.

UPT-3423

a. Base of a brown stoneware food jar with two Chinese characters handwritten on the base that translate to "mustard." (Prof. Chou)

b. "Salt vegetable with seashell food" (tentative translation, Prof. Tong)

UPT-3803

Stoneware jar with green glaze. Six characters impressed on the base. "Dry sweet fruit, such as raisins." (Prof. Tong)

UPT-4069

Small jar lid with green glaze and Chinese character on the inside: "Weight is 1 oz, 4 gr. excluding lid." This could be an opium jar that contained 1 oz, 4 gr. of product. (Mr. Toy and Mr. Tam)

UPT-3461

a. Large brown stoneware lid to fit a jar with recessed rim. The lid top has a paper label with Chinese writing that is badly eroded (Figure A.I.2). The name of the company is "XING YI HAO" translated as "good luck/ profitable/ company." On the left hand side is the address of the company: "YONG AN STREET."

The central characters describe the contents of the jar: "--we produced--- assorted kumquat---they are good for the circulation in the body--hill horn (a cherry-like fruit) assorted from TIN JIN--- all are very tasteful." (Prof. Chou)

b. Name of company: "Yong Dung Thi." Contains edibles but these are not identifiable. (Mr. Toy and Mr. Tam)

c. Name of shop: "SHANG YEE SHOP" (phonetical) - "made it themselves." Contains preserved Chinese lemon. (Prof. Tong)

UPT-5378

Unglazed stoneware jar lid to fit small round-sided jars. Rows of Chinese writing on the lid surface (there seems no evidence of paper) are so faded that no identification could be made. (Prof. Chou)

UPT-713

Brown stoneware jar or soy bottle base. There is a Chinese character applied with brush on the base. The character is translated as "south." Prof. Chou thought that there might be a missing character that would make the translation into seasoning or herbal medicine.



Figure A.I.2. Stoneware Jar Lid  
(UPT-3461)

UPT-4838

Shoulder of large storage jar with two Chinese characters in brown glaze applied to an unglazed resist. Total of three characters that give the name of the company that produced the product, probably a liquid such as wine vinegar or soy. Translation: "JU" = together; "CHUN" = spring; "YUEN" = garden. Meaning: Shop with variety of products like spring garden. (Prof. Chou)

UPT-5791

Neck and shoulder of large stoneware jar with Chinese character in white paint. The writing is too cursive and cannot be read; it probably denotes the name of the company or product inside. (Prof. Chou)

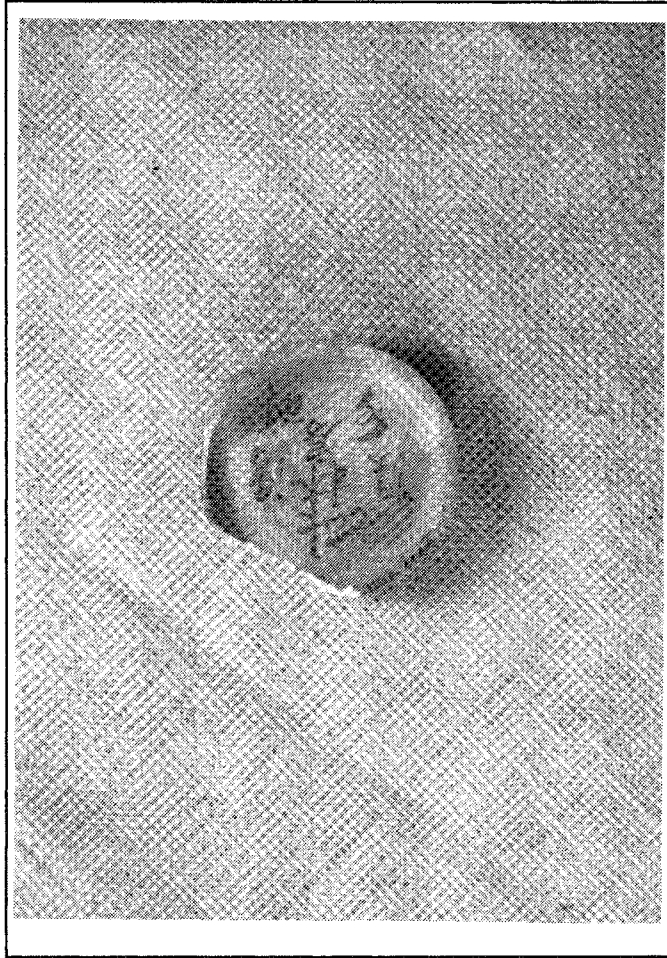


Figure A.I.3. Underside of Jar Lid  
(UPT-4144)

UPT-4144

Brown stoneware fitted lid for medium sized straight walled jar. Seven characters are written inside with black ink (Figure A.I.3). The first two relate to the name of district or county. The next two represent the name of the village: "SHUI CH-I." The final three are the name of the family: "Second son of LIN family." (Prof. Chou) Mr. Tam and Mr. Toy translated the person's name in the center as "JOOK LIM FON," and the function as "Liquid jar." Prof. Tong suggested that the contents were a perfumed facial cream.

UPT-4101

Stoneware fitted lid with Chinese character in black. Three characters are not legible; one character translates to "eyeglasses" - therefore possibly a container for single glass.



UPT-5813

Stoneware wine bottle base with embossed characters "HING JUNG (place name) Pottery Company."

UPT-2776

Chinese clay stove. Total of eight characters read vertically and four characters horizontally: "No bargaining [one price]. Changed if a forgery." Horizontal: "LI YOUNG SHUN." The equivalent Latin letters of the maker are L.W.T. (Prof. Chou) Cf. Figure 7.1.

Another transliteration of the same inscription is: "(Our products) no bargaining at cost. (We) guarantee the product. LEE WING SOON" as the name of the company. (Mr. Toy and Mr. Tam)

UPT-3423

Base of brown glazed stoneware vessel (vegetable jar size) with handwritten character on the base: "mustard." (Prof. Chou)

UPT-3423

Base of medium size food jar. Vegetable or salt vegetable. (Prof. Tong)

UPT-7185

Medium size brown stoneware jar with recessed rim for fitted lid. Embossed stamp of two characters reads "ZE LI" which is the name of a company meaning "profitable." (Prof. Chou)

UPT-6234

Stoneware rectangular lid with handpainted brown design elements. Prof. Chou thought the shape was Japanese and the design elements represent symbols, not Japanese writing.

#### CERAMICS WITH PECKED CHINESE CHARACTERS

UPT-3539

Polychrome handpainted Euroamerican earthenware plate with Chinese character pecked into center: TUNG - could be phonetic man's name. (Mr. Toy and Mr. Tam)

UPT-3539 CHOU - last name. (Prof. Tong)

UPT-7157

Four Seasons plate with three parallel lines that represent the number three. Prof. Chou did not think that it represented a name but rather that it was a practice piece for porcelain engraving, possibly on a piece of broken china. The names are those of individuals or the owner or name of a boarding house.

UPT-3544

Four Seasons serving bowl with punctate name inside: "jade," first name, made with a bow drill (Figure A.I.4). (Prof. Tong). YOOK = "Jade" which could also be a man's name. (Mr. Toy and Mr. Tam)

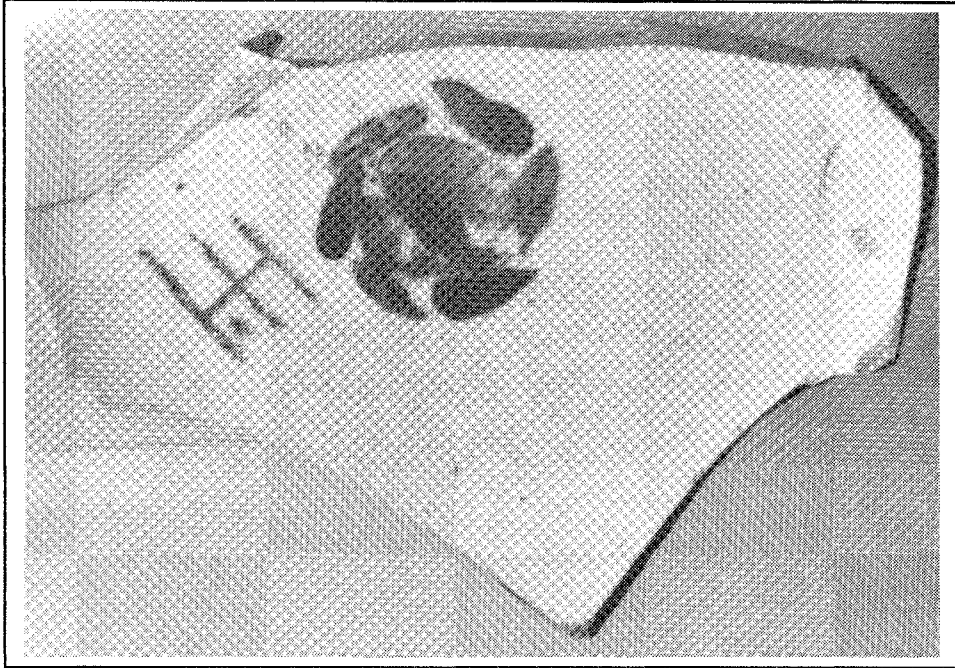


Figure A.I.4. Four Seasons Serving Bowl  
(UPT-3544)

UPT-7258

Four Seasons bowl with pecked chinese character for "Jade." (Prof. Chou)

#### OPIUM PIPE BOWLS

UPT-813

One Chinese impressed character. Family name "PAN." (Prof. Chou)

UPT-1227

Longevity - other two not readable. (Prof. Chou)

UPT-1476

Whole opium bowl with intricate engraving infilled with light colored pigment. This could be old writing with Chinese sayings or decorative characters. There is a dragon that signifies power and man, and a phoenix that signifies woman and pretty. Two small characters signify year. (Mr. Toy and Mr. Tam)

UPT-1476

Two birds and eight animals (Figure 5.3) with five characters which signify time; therefore date (year) can be calculated. (Prof. Tong). According to the 60-year cycle, this date would be either 1843 or 1903. (Prof. Chou) Possibly symbols of the Chinese zodiac.

UPT-1476

Yi-xing ware. Lotus lappets around the bottom. The symbols are two dragons, crane (long life), and fish. Omens for fecundity, good luck, or, could be dragon head kites. (Mr. Kamansky)

UPT-1680

First- cicada (insect), 2nd and 3rd - official title, if reading from right to left. 3rd is only partial. (Prof. Chou)

UPT-2350

"HUANG HONG JI." Ji=company. (Prof. Chou)

UPT-2350

Company name: "WONG HUNG GAY". (Mr. Toy and Mr. Tam). (Note: JI (Chou) and GAY (Toy) probably mean company since Mr. Toy also called a similar name of a company for the large stoneware jar, UPT-475: Sing Gay Lok).

For the same pipe, an alternate reading was "STORE HUNG" (family name or flood) "WONG" (last name or Yellow). (Suellen Cheng)

UPT-3089

Chinese lion, two bats facing each other, center flower. Part of a poem with two repeated characters: "SHENG." Repeat of sounds or noises like singing of birds such as orioles. (Prof. Chou)

UPT-3090

Last two characters of a line of a poem: "there is fragrance." (Prof. Chou)

UPT-3179

Two impressed characters present, meaning "good luck"; first two should be "everything goes your way." (Prof. Chou)

UPT-3233

Same as UPT-6449. (Prof. Chou)

UPT-3233

Opium pipe bowl with nine dragons. (Suellen Cheng)

UPT-6310

Total of six stamps, but only two are complete: "venerable or honorable" and "couple" or "a pair." This could be a poem referring to a pair of birds or a couple of lovers. (Prof. Chou)

UPT-6343, -6368, -6777

Could not be deciphered due to poor quality of the stamps but seem to have a similar configuration as UPT-6449. (Prof. Chou)

UPT-6449

Two lower stamps = double good luck. Two side stamps denote name of the company "JIA JI"; middle stamp has three characters, reading from left to right: first one is unclear; second one: "BIAN" means the edge of or by the side of; and the third one, "SHUI," means water. Top two represent flowers, and the center one is broken and could not be translated. (Prof. Chou)

UPT-6561

Opium pipe bowl with seven Chinese characters. Translation: 1. "one"; 2. "day"; 3. "right or rectify"; 4. "?"; 5. "exchange"; 6. "white"; 7. "goose." This is related to ancient story of a calligrapher who loved a goose. He wrote Buddhist text to exchange for the goose. (Prof. Chou)

UPT-6628

Impressed seal with double lock signifying double happiness. (Prof. Chou)

UPT-6965

Total of nine stamps: two biggest ones are blurred, top three are flowers. Of the lower four, two represent symbolic animals such as the turtle, and the two middle ones are Double Happiness. (Prof. Chou)

UPT-6966

Four stamped Chinese characters. Translation: 1. "together"; 2. "wife" (?); 3. "to pray or enjoy with"; 4. "moon(light)." (Prof. Chou)

#### CHINESE MEDICINAL VIALS

UPT-31

Small clear glass medicinal vials with embossed bases contained either medicine drops or powder. There are three characters appearing on the bottom which form the name of the company: "CHU CHUNG HSING." (Prof. Chou)

UPT-4641

Clear glass medicine vial with three Chinese characters embossed on the base: "CHU CHONG XING" (name of a company). (Prof. Chou) Bottles of the same size and shape were recovered at Riverside, at least one with the same embossment; two, not necessarily the ones illustrated in that report, were translated as "Virility Potion" and "Liver or Lung Medication" (Great Basin Foundation 1987(2): 204-206).

Upt-6859

Clear medicine vial with six embossed Chinese characters on the neck of the bottle, three on either side. This contained a liquid remedy for common ailments that can be taken orally or by nasal application. "JI ZHONG SHUI." (Prof. Chou)

UPT-5499

Deep green medicine vial, wider at the shoulder, with gold writing on both sides. Some of the characters are indistinct; the uppermost denotes Canton, and the lower is a family name, PAN. The latter could also be the name of the factory; the shop may be named after the founder, a place, symbol - or any of these. The given name is missing. On the other side: one character is the same shop name, and the only other legible character is XUE, or snow (Prof. Chou). The vial would have contained powder, pills, or liquid to be taken internally. Often, an all-purpose drug that could be used for upset stomach, nausea, motion sickness, pregnancy, and fevers. The pills were very small - 25-40 pills per vial - and were used in different amounts for different ailments.

One suggested translation was HIN YUEN HONG, as the name of the herb shop. There was agreement that one word denotes Canton.

#### GLASS BOTTLES

UPT-15

Diamond shaped clear glass bottle, with cork. Two embossed panels, one with "ANTICONOL," the other with seven Chinese characters. The first four characters represent either the brand name, transliteration of a foreign name, or the name of the manufacturer. Produced in Shanghai. Last three characters identify the product as pills for men having involuntary ejaculation problems. (Prof. Chou). Mr. Toy and Mr. Tam confirmed that these pills were used for sexual problems or diseases.

UPT-26, UPT-96

Small fragments with partial characters that could not be read.

UPT-77

Clear glass wall fragment with "--OZ NE--" plus three Chinese characters. These represent the name of the company: "HUANG HE GUANG"; Huang = family name, He = together or partnership, Guang = expansion or extension; i.e., several people, business good to extended family company.

UPT-92, UPT-101, UPT-268

Clear glass bottle fragments with embossing. On UPT-268, "YUEN" is represented in Chinese characters. The literal translation of Yuen is "garden" and is used for the term "company." UPT-92 and 101

read "-uong-Yuen" in English, indicating that "Yuen" is the name of the company. The bottle most likely held vinegar, although glass bottles were used also for barbecue and soy sauce. (Prof. Chou)

UPT-245, UPT-271

Aqua bottle fragments with embossed Chinese characters reading "Hong Kong." (Prof. Chou)

UPT-267

Clear glass, partial wall fragment with only one complete Chinese character translating to "mountain." (Prof. Chou)

UPT-269

Aqua glass medicine bottle wall panel fragment with embossed "S. Watson ---Hong Kong." Watson Co. was a large English manufacturer in Hong Kong that produced various products, notably soft drinks and medicine. (Prof. Chou)

UPT-270

Partial base of a common green square bottle with two remaining embossed Chinese characters: "GONG" meaning grandfather or public, and "RUN" meaning profitable.

UPT-315

Base of green glass bottle. The base is embossed with the manufacturer's mark "K O." Around the heel are 12 embossed Chinese characters reading: "Made by wheat wine (beer) company of Great Japan." Separating the beginning and end of the phrase is a circle with a dot inside.

UPT-672

Wall and base fragment of common green bottle with two rows of three Chinese characters each. The three to the right are the name of the company "YUE YANG TANG," and the three to the left represent a Japanese family name that Prof. Chou could not interpret. This is based on two characters since the third one is only partial. (Prof. Chou)

UPT-3548

Glass bottle with embossed Chinese characters:

1. "JAPAN - TOKYO"
2. "SAN KAY I KWOK/HONG." A cheap aphrodisiac for strength/energy. The Chinese have more expensive aphrodisiacs such as rhino horn. (Prof. Chou)

UPT-3548

Two horizontal characters: "Japanese made and produced from Tokyo." The four vertical characters represent the name of the company: "SAN KEI IAI GOK." (Mr. Toy and Mr. Tam)

UPT-3548

"Produced in Tokyo." (Prof. Tong)



UPT-4441

Olive, blob top bottle with paper label in Chinese writing. "Liquid medicine, to enrich blood, give energy, cure colds." (Mr. Tam and Mr. Toy)

UPT-5449

Aqua medicine bottle with Chinese characters embossed on opposite sides. The name of the company or factory is "HENG CHUN GE" and the address is "ANLAN STREET, CANTON."

UPT-5949

Glass bottle with embossed Chinese characters: "HONG CHUN AND KWOK CO, CANTON, ON LAN STREET." There is no mention of the type of medicine contained. (Prof. Chou)

UPT-7270

Medicine bottle with Chinese characters on both sides of the bottle body. One side: "Liquid which will cure everything." Other side: "Produced by ...." This is a bottle from Tokyo. (Prof. Chou)

#### FIGURINES

UPT-1754

Head of a figurine. Manchu woman with Manchu headdress. Ch'ing Dynasty. Usually painted and glazed (possibly green glaze). Last half of the nineteenth century. (Mr. Kamansky)

UPT-1289

Clay sculpture of animal with rider. The animal is ass or donkey; bundle of faggots is wood. Excellent example of folk art. Guangdong Province, Fu Chien or Ju Chou (sp) City, approximately 60 miles from Canton. Probably dates from 1820s to the 1850s. Szechuan ware. (Mr. Kamansky) Others have suggested that the animal is a water buffalo, particularly because of the position of the rider over the rump. Prof. Tong interpreted the symbolism as Wang Men, a poor farm boy who was sent daily to take care of the water buffalo, and who wrote, studied books, and became a famous painter.

UPT-2372

Soapstone figurine of a monkey, leaning over a small dish. Monkey is a symbol for longevity, as is a crane.

The monkey is the cleverest of the beasts. Sometimes given to students as a good luck token. When Buddha died, great honor would come to the beast which arrived first. The monkey knew that the horse would arrive first, so he hopped atop the horse and on approaching Buddha, jumped off to be the first to mourn.

UPT-2835

Soapstone figurine of God of Longevity, one of the eight immortals (phonet.: Lae Shu). Holds peach (symbol of immortality, longevity). Had been painted; probably cinnabar, still traces visible in folds of the robe. Hole on bottom suggests that it was one of a group, attached to the rim of a vessel or decorative base. Turn of the century. The Chinese, even today, often utilize Confucian/Taoist symbols in the home, to obtain good things in present life, but rely on Buddhist figures for better life in heaven hereafter. Name is marked on the bottom. (Mr. Kamansky)

#### MISCELLANEOUS OBJECTS

UPT-62

Clay fragments depicting structures from brick or stone. This could possibly be a toy, depicting a city gate and wall.

UPT-1826

Small dish used as oil lamp or even for cooking. Any kind of oil could be used; the wick would be immersed in the oil with the end resting at the edge. With oil and a wick, any dish could be used. (Mr. Toy and Mr. Tam) Oil lamp. Uncertain, possibly a small oil lamp with a wick floating in oil. (Mr. Kamansky). Prof. Tong had never seen these, and suggested that they were leftovers from manufacture.

UPT-4346

Porcelaneous stoneware plate filled with cement (plaster?), Chinese writing on cement. Prof. Tong thought that it may be part of construction.

UPT-5311

Cylindrical bar, possibly ivory with series of punctate marks at specific intervals. This is a scale bar with one LIANG between lines. (Mr. Toy and Mr. Tam)

UPT-5654

Four Seasons serving bowl with hollow base filled with cement. This could possibly be for Chinese dice game since a die will bounce differently whether thrown onto a hollow base or a solid, filled base. (Mr Toy and Mr. Tam)

UPT-6864

Wood (bamboo?) stick with four Chinese characters. Prof. Chou could not identify the characters. This was the handle of a brush for lettering larger characters; the inscription may mean success and competition, or, success in finishing. (Mr. Tam and Mr. Toy)

UPT-6885

Wooden object with holes and one peg in place (Figure 7.5). No consultants recognized this item.

UPT-7129

Well formed bone object with pointed end. Seems to be polished. Professor Chou did not recognize it but suggested as a possibility an instrument used for accupressure. Mr. Tam suggested it was a toothpick.

UPT-6502

Carved oval tube with recessed end for lid or attachment. Prof. Chou thought that the material could be horn or teakwood. He could not identify it but suggested a part of a musical instrument or a water pipe. Perhaps a socketed handle.

BLUE AND WHITE TEA POTS

Sage(s) with assistants - collect certain plants- drink this and live long lives, i.e., collect magic herbs.

CANDLEHOLDER

For ancestor worship; the same objects have been seen as late as 1940 in mainland China. (Prof. Tong) The context of this and the other candleholders presumes an earlier date.

INCENSE HOLDER

The wealthy would use a container of similar form, but made of bronze or silver. (Prof. Tong) This particular glaze is very common in China (Chinese Historical Society of Southern California meeting on Oct. 3, 1990)

BONE BOX CLOSURES

Books were printed with big wooden blocks; each character had to be carved. Classical or medicine books would thus be 10-12 volumes. These would be covered (cloth?) and the bone pieces would be used to hold the book closed. Clasps for books or boxes. (Prof. Tong) The same form is still in use, often made now of plastic.

RED CLAY STAND

UPT-1342 is a low round object with three feet; the outer rim is elaborately molded, while the upper surface is flat, plain, unglazed, and perforated in the center. Everyone who has seen this is convinced that it is a stand for something. The remnants of clay on the feet could be for attachment of felt to protect furniture.

#### NEWSPAPER SCRAPS

There were a surprising number of Chinese language newspaper fragments that had survived discard, demolition, fire, and burial. These were pressed and dried. Fragments from one group that had been stuck together were selected for examination, and the translations below are from this single source. Many others are sufficiently well preserved that they can be translated.

UPT-6755

Fragment of newspaper with Chinese characters. It seems to be part of the newspaper, but is not a news story. It is a fictional series that appears to be a love story. (Prof. Chou)

UPT-6842

Biblical - devotional book of hymn lyrics. The text is a rendering of the New Testament into Chinese. (Eric Chau)

UPT-7187 (Feature 44, Unit 2, Level 3) - various small scraps.

Chinese medicine, pill, powder, ointment - expensive medicine for revitalization. Gin sing - from horn of deer "YONG." This is very precious and expensive.

Fresh fruit, garden or farm.

League of Nations - would date after World War I.

Sino-Japanese war - "to save our country" - (requesting donations for war effort?). China in turmoil. "To praise the donations of -- \$50," names (probably donors). (Eric Chau)

Advertising:

- Medicine. Advertiser from Hong Kong.
- Railroad in China - Southern Manchurian Railroad.
- Prices of Chinese medicine
- Three grades of gin sing - western price A = \$8  
B = \$7  
C = \$6  
fragments = \$3.50/lb
- Business name: Trading food, goose liver from Canton. Basic foods, preserved in oil.
- Advertising Chinese opera.
- Advertising for jewelry, jade ornaments.

Announcements of School organization (board of directors).

Chiang Kai-shek. General - like a hooligan (very negative comment). Dealing with the Sino-Japanese war - in the 1930s.

Announcement of death. The paper gives relative, position in family.

Date - 2481 = birth of Confucius.

This is probably from a book or magazine of early days.

All addresses are in San Francisco. Most probably, the paper is from San Francisco, or at the very least, all of the advertising. (Eric Chau)



## Appendix II

### DONG, WEN, AND MON: ASIAN COINS RECOVERED FROM THE LOS ANGELES CHINATOWN

by Margie Akin

#### INTRODUCTION

A collection of 322 Asian coins was recovered from the excavations conducted during construction. The coins, among the most common types in circulation at the time the Los Angeles site was occupied, were in very poor condition, corroded, and almost illegible. What can an analysis of this material tell us about the everyday life and activities of the people who used them? Can the coins shed any light on trade or other economic aspects of community life? Will the coins help to date any portion of the Los Angeles Chinatown? These questions will be addressed following an initial description of the coins themselves.

#### DESCRIPTION OF THE COINS

Of the 322 Asian coins recovered, 280 were from Vietnam, 41 were of Chinese origin, and one was minted in Japan. With one exception, all of the coins are round with square center holes, and range in diameter from 19 mm to 27.5 mm. Although the coins are of different denominations, were minted in different countries, and were produced over a period of 335 years, they share certain characteristics.

Each coin, whether Japanese, Chinese, or Vietnamese, bears four Chinese characters on its obverse. The right and left characters can all be translated into English as "circulating currency" or "current coin" (Jorgensen n.d.:2). The top and bottom characters give the reign name. Each emperor, in consultation with historians, astrologers, and political advisors, chose a slogan-like name for his reign, and the emperor was officially known by this name until his reign ended. (An American equivalent might be a reference to the "New Deal president" or the "Great Society president.") Numismatists almost invariably refer to the emperors by their reign names even when another name may be used more commonly by historians. The reign names usually have both political and religious significance, and have a multitude of nuances and possible translations.

Although all of the coins have the four Chinese characters on their obverse sides, the reverse sides vary. The earliest Chinese coin in the group, from the Wan Li reign of the Ming Dynasty, has no inscription on the reverse. The other Chinese coins were all



minted during the Qing Dynasty, and all bear mint marks on their reverses indicating the place where they were cast or struck. The mint mark is a single syllable written in the phonetic Manchu script, sometimes accompanied on the earlier coins of the dynasty by the Chinese character for the same syllable. The only Asian coin in the collection that lacks a center hole is a Guangdong cent minted between 1900 and 1906. It has a dragon and English inscription on the obverse, and Chinese and Manchu inscriptions on the reverse.

The Vietnamese coins have three types of reverses. Some are without any inscription, some have indications of weight and/or nominal value, and a single example in this assemblage bears the abbreviated name of a mint. The Japanese coin has no inscription on the reverse.

### HISTORICAL NOTES ON THE COINS

Coins developed in China about 2600 years ago, and a multitude of Chinese words have been used over the millennia to refer to various types of coins. The most common word for the lowest-denomination brass coins in nineteenth century southern China appears to have been *wen*, and the Chinese coins are referred to in this report as *wen*. Another word for coin, often considered more formally correct, is *qian* (*ch'ien*), but *qian* can refer to coins of larger denominations as well, and is not as specific. All these coins were often referred to by English-speakers as "cash," from a word for small copper coins used in several languages of southern India. The word "cash" has several other meanings in English, and was never used by the Chinese themselves, although it appears on some turn-of-the-century Chinese coins as part of the English-language inscriptions.

The *wen* had a value of about 1/1000th of a silver dollar in China during the nineteenth century, although that exchange value between silver and the brass currency varied widely from place to place and time to time (Krause and Mishler 1985:334). *Wen* are composed of brass or copper alloys that vary according to the mint and year of production. Strict official rules on formulation of the alloy were often stretched a little, even at Beijing, and in some remote provinces the rules appear to have been ignored, at least during some years. In 1889 modern minting methods were introduced to China with the opening of the Canton mint in Guangdong Province. Well over one billion brass *wen* were struck over the next 18 years and in 1900 the striking of copper cents, nominally equal to 10 *wen*, commenced.

The Vietnamese coins are called *dong*. The zinc coins were worth less than brass coins in circulation, but the relative values of the coins varied sharply. There were some attempts on the part of the Vietnamese governments to give high values to some

zinc and brass or copper coins, and many of the zinc coins recovered at the Los Angeles site bear numbers on their reverses, some of which were intended as denominations. However, these denominations were generally ignored by Vietnamese merchants, and were entirely disregarded when the coins circulated in China's Guangdong Province. At one point during the Tu Duc reign (1848-1883), a silver dollar was worth about 2600 zinc *dong* and 10 zinc *dong* were worth one brass *dong*, but these relative values changed often (Krause and Mishler 1985:2521).

Zinc *dong* are a grayish white when first cast, but soon take on a darker color, oxidize very easily, and are not as attractive as the brass or copper coins. They are quickly and severely damaged by fire and deteriorate rapidly in soil, and most of the *dong* recovered at this site were in very poor condition. Most were broken to some degree, and eight were completely unreadable due to fire damage or oxidation after deposition. *Dong*, and other coins made of zinc, require special care when recovered from archaeological sites. Oxidized zinc coins should always be sent to an expert for cleaning; improper cleaning will lead to a loss of information, and cleaning should only be done to the point at which identification becomes possible. Except for the one coin with the reign date of Canh Hung, the oldest Vietnamese coin recovered, all the Vietnamese coins recovered at the Los Angeles Chinatown were of zinc.

The Japanese coin that resembles the *dong* and the *wen* in both general appearance and value is the *mon*. Like the Chinese and Vietnamese coins, its relationship to silver and gold varied considerably. According to Krause and Mishler (1985:1582), "From time to time the government would declare an official exchange rate, but this was usually ignored." Only one *mon* was recovered from the Los Angeles Chinatown.

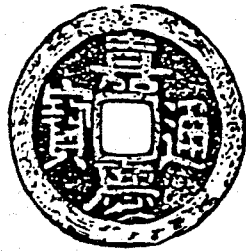
Figure A.II.1 illustrates examples of the types of *dong*, *wen*, and *mon* recovered from the Los Angeles Chinatown.

#### COMPOSITION OF THE COIN ASSEMBLAGE

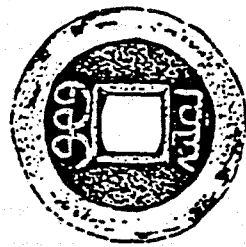
The 280 Vietnamese coins dominate the Asian coin assemblage from the Los Angeles Chinatown, comprising 85 percent of the total. This site has the highest percentage of Vietnamese coins yet found in a controlled archaeological excavation at any site in the western United States. The oldest Vietnamese coin is from the reign of Cahn Hung (who controlled only the northern half of the country) and dates from between 1740 and 1787. The most recent Vietnamese coins are from the reign of Tu Duc (1848-1883). Table 1 contains a distribution of the Vietnamese coins by reign and the number of examples found in the site as a whole. The coin assemblage from the Riverside Chinatown, 58 miles (93 km) easterly of this downtown Los Angeles Chinatown site, is similar to this

Figure A.II.1. Examples of Dong, Wen, and Mon

Chinese wen.  
(Craig #2-2.)



Obverse

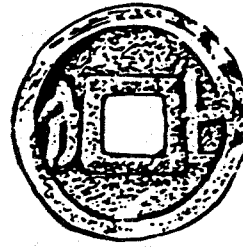


Reverse

Vietnamese dong of  
7 phan (Craig #63).

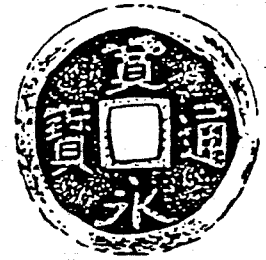


Obverse

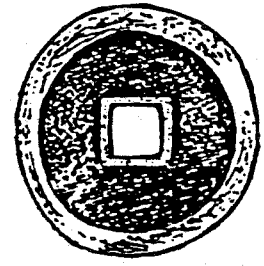


Reverse

Japanese mon  
(Craig #1.1).



Obverse



Reverse

(drawn by Kay Dougall)

assemblage in both the high percentage of Vietnamese coins, 60 percent from that site, and the reigns represented (Akin and Akin 1987). The coins of the Minh Mang and Tu Duc reigns make up the majority of the coins recovered at both sites. This suggests that some of the same cultural and economic forces led to the deposition of coins at both sites. The Los Angeles and Riverside sites were approximately contemporaneous.

The 41 Chinese coins make up only a small fraction, 15 percent, of the coins recovered at the Los Angeles site. Eight reigns are represented, the earliest being Wan Li (1573-1619), represented by one coin. Coins of the Kang Xi reign (1662-1722) are often found in California, and seven coins of this reign were recovered in Los Angeles. Fifteen of the very common coins of Qian Long (1736-1795) are represented in the assemblage, and these are also often found in Overseas Chinese occupation sites throughout the West. Table 2 summarizes the Chinese coins by reign and the number of examples found in the site as a whole.

The coins of Qian Long and Kang Xi make up the majority of the Chinese coins from the Los Angeles Chinatown. The Kang Xi coins have two characteristics that may help explain their higher numbers in the assemblage. First, they are generally larger than most *wen*, usually between 25 and 27 mm in diameter. Also, Kang Xi was an exceptionally respected emperor, and Chinese people, like people everywhere, enjoy having things that are associated with their most popular leaders. Kang Xi coins reportedly are considered to have great talismanic value (Schjoth 1976:56).

Ping Lee, a life-long member of the Chinese American community in California's Sacramento River delta town of Locke, reported that the coins of Qian Long were preferred for gaming purposes. When interviewed in July of 1989 he related that his grandmother, who was involved in the operation of a game-room, preferred the Qian Long coins because they were generally thicker and sturdier than coins from other reigns. Along with the relative numbers of these coins available in the ports of Guangdong, these factors may contribute to the relatively high numbers of these coins recovered from this site, and other similar sites. Six struck coins of the Guangdong mint were found: five *wen*, and one cent or ten-*wen* piece.

The one Japanese *mon* recovered bears the inscription of the Kan-Ei era (1624-1643), but coins with this inscription were minted until 1769. These coins are known to have circulated in Chinese port cities in the second half of the nineteenth century, together with Chinese and Vietnamese coins (Coole 1937:27).

#### DISTRIBUTION OF THE COINS IN THE SITE

The coins were well distributed in the excavation area, and were found in or around most of the features. The largest

concentrations were found in Features 2, 3, 4, 10, 29, and 39, all of which have been described as trash pits. The balance of the coins were fairly evenly distributed throughout the site, with only a few small areas failing to yield at least a few coins. Direct association of coins with any other class of artifacts was not recorded.

The distribution of the coins may provide some hints on the relative dating of some portions of the site, as well as provide confirming evidence for the dates of the site as a whole. Table 3 summarizes the numbers of Vietnamese and Chinese coins found associated with each of the features. Only Features 17, 29, and 39 have a significant percentage of Chinese or Japanese coins recovered from them. Features 17 and 29 each have about 30 percent Chinese coins, and Feature 39 contains approximately 60 percent of the same. The numismatic evidence suggests that these features are probably more recent than portions of the site that contain a smaller percentage of Chinese coins. The explanation for this conclusion can be found in the discussion on dating.

It is difficult to draw any conclusions from the association of the coins with other material in this site because many of the features in the deposit were poorly defined and badly disturbed. In addition, because most of the coins (more than 80 percent) were recovered from trash pits, there are few clues as to how they were used before their deposition in the site. Therefore, in order to determine how the coins were used by the occupants of the site, one must rely on the information gleaned from the composition of the assemblage as a whole, combined with ethnographic observation, historical records, and a systematic review of Asian coins recovered from other archaeological sites in western North America.

#### **FUNCTION OF THE COINS**

Asian coins, particularly Chinese *wen*, were used for a wide variety of purposes in the North American West. Talismanic, gambling, decorative, and medicinal uses have been reported, as has been their use as hardware. Speculation that the coins may have circulated as currency does not appear to be supported by a review of the evidence (Akin 1990). An examination of the known uses will suggest a range of possibilities for the function or functions of the coins recovered in Los Angeles. Some probable uses of some of the Los Angeles Chinatown coins will then be proposed.

#### Uses of Asian coins in the North American West

Asian coins were imported into the New World by different populations over a period of two centuries. It is often mistakenly assumed that just because an artifact is a coin, its