PAPERS ON OLD SACRAMENTO ARCHEOLOGY

Edited
by
Peter D. Schulz
Betty J. Rivers

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A SURVEY OF HISTORICAL ARCHEOLOGY IN SACRAMENTO

Peter D. Schulz

Richard B. Hastings

David L. Felton

> June 29th [1849]. Arrived at Sacramento City, the present of which is under canvas, and the future on paper. Everything is new except the ground, and trees, and the stars, beneath a canopy of which we slept. Quarreling and cheating form the employments, drinking and gambling the amusements, making the largest pile of gold the only ambition of the inhabitants (Woods 1851:47).

Over the last two decades Sacramento has been the scene of increasingly large-scale archeological investigations. Indeed, it is possible that the Old Sacramento district – the original mercantile heart of the city – is the most intensively investigated nineteenth-century urban site in the western United States. In spite of the impressive volume of field work completed, however, the record of this research that has reached either the public or the archeological profession is sparse indeed. Most of the work has consisted of salvage excavations, the primary goal of which was rescuing from destruction the buried remains of Sacramento's historic past. Little attention was paid to the interpretive potential of those remains, and this lack of attention has had two results: 1) no reports have been written for most of the salvaged areas; and 2) the various investigations have provided little stimulation to increase the perceptiveness of subsequent research efforts.

The present report is itself, in a sense, a salvage effort. As time passes it becomes increasingly unlikely that detailed summaries of many of the early excavations will ever be written. Unfortunately this means that, with their original contexts left unclarified, the interpretive potential of tens of thousands of artifacts, not to mention vast quantities of other materials, will decline accordingly.

It is our intention here to describe briefly the resource on which all this work has centered and to summarize the excavations that have taken place. Summary of this kind cannot replace detailed analyses such as those now being completed on a few of the sites. It should help, however, to increase both our understanding of the potential of urban archeology in Sacramento and to facilitate scientific study of the cultural remains of earlier Sacramentans.

HISTORICAL BACKGROUND

The early history of the Sacramento area had strangely little influence on the growth of the city. Prehistoric archeology has clearly defined a succession of native cultures which extends back over the last 5,000 years in the region; Europeans did not pass through the area until 1808. The first European settlement was not made until 1839, when John Sutter arrived with a few Hawaiian and European followers to establish his fort and begin his ranching operations. New Helvetia, however, was not a capitalist enterprise but a feudal enclave, connected economically to the outside world primarily by the sale of hides destined ultimately for the shoe factories of Massachusetts. Most of Sutter's attempts to establish more lucrative ties to the industrial revolution were conspicuous for their failure; and it was his unfortunate decision to employ the skilled labor of American immigrants in yet another such endeavor – the erection of a sawmill at Coloma – that led to the accidental discovery of gold and the ultimate downfall of his empire. The uncontrolled influx of ever-increasing thousands of hopeful miners quickly overturned California's pastoral economy and was directly responsible for the growth of Sacramento.

Doubtless the areas's history of use as Sutter's embarcadero – and its proximity to the fort – was influential in determining the site of the city. But geography, not tradition, was the deciding factor. Providing good anchorage near the mouth of the American River, it was the ideal site for unloading the men, supplies, and equipment that poured upriver from San Francisco. The latter city itself was undergoing a similar process:

> From 1848 to 1869, from the discovery of gold to the completion of the transcontinental railroad, the Bay of San Francisco was the warehouse for the economic life of California. Into that structure poured the mass of goods necessary to support a far from self-sufficient population. So long as hides had been the primary export, California's population could feed itself, turning to the traders only for textiles, trinkets, and manufactured staples. But the men who came to dig for gold were entrepreneurs, not farmers, so their economic existence depended upon the presence of a warehouse kept filled by full-time merchants (Vance 1964:9-10).

Since the goods destined for California's new population came by sea and were usually transferred to other vessels for the trip to the interior, San Francisco immediately became the commercial center of the region. But the same process determined that Sacramento would dominate commercial activity in the Central Valley. Virtually all supplies for the mines came up the river, and the vast majority of those destined for the northern mines – which could not be reached by boat were off-loaded at the nearest convenient point: just below the mouth of the American.

The streets of the new town were laid out late in 1848. By the following July the town consisted of "but 50 tents and 6 frame buildings, some of them covered merely with cloth" (*Sacramento Transcript* May 28, 1850:2). Thereafter, growth – both in people and in more permanent buildings – was rapid. The city's population, estimated at 150 in April, 1849 had grown to 9,087 in 1850. By 1860 it had reached 13,785 and by 1880, 21,420. The rapidity of this growth provided the economic incentive for the investment in wood-frame and then brick structures by merchants. And two devastating fires, in 1852 and 1854, quickly made obvious the selective advantage of brick.

As is usual in incipient settlements, most of the early businesses were general merchandise firms. The first real specialists were probably those who catered to the immediate needs of a transient population: owners of restaurants, hotels, saloons, and gambling halls. Specialists typical of an established community quickly followed, and Sacramento soon had tinsmiths, livery stables, pharmacies, slaughterhouses, and even sewing factories and bookstores. Meanwhile, in addition to acting as a supply center for the mines, the city began serving the same functions for the valley's expanding agricultural industry. It was doubtless this central commercial and geographical position that allowed it to acquire and retain the state capital.

It may have been fortunate coincidence that the Central Pacific Railroad was owned by Sacramento businessmen. But the effect was to reinforce Sacramento's domination of commerce in the interior of the state. As federal money poured in and the new industry expanded its operations, the city continued to grow until, with the completion of the transcontinental line, it became the western terminus for cross-country transport of passengers and goods.

Sacramento is thus an example of rapid urban growth based on control of transportation. In the western United States it was second only to San Francisco as a nineteenth-century commercial success story. Its archeology, consequently, should reflect most of the diversity of urban life in Victorian America: the failures and the successes of both the American economic dream and of its ethnic melting pot. Adequate management and exploitation of Sacramento's archeological resources, however, require knowledge of their particular characteristics and potentials.

SACRAMENTO'S ARCHEOLOGICAL RESOURCES

Cities, like all human habitations, leave in the ground a record of their existence: the abandoned privies and trash pits and the foundations of demolished buildings, the accumulating debris of daily life which holds evidence of the architecture, the origins and lifeways, the living conditions, and changing culture of their residents. In Sacramento two natural processes – fire and flood – have been especially helpful in augmenting and preserving this record.

Sacramento was barely founded when in January, 1850 the river topped its banks and inundated the town. The loss of property was substantial. Though the city took steps to raise and strengthen its levees, these repeatedly proved inadequate.

The town flooded again in March, 1852 and in December, 1852 and in April, 1853. Finally, the most devastating flood of all poured tons of mud and water into the town in December, 1861; and hardly had the waters receded when the disaster was repeated a month later (Briones 1979). Having lost all faith in the levees, the town in 1864 began raising the streets - in some areas as much as 12 ft. Sand by the wagonload was brought in to raise the streets, and the buildings along them were jacked up to the new levels (Lagomarsino 1969; 1976). This not only preserved Sacramento from future inundation, it also sealed below the layers of fill much of the remains of the town's pre-1860s past.

Fires have been in an historical sense - equally as productive. On the night of November 2, 1852 a fire that started in a small shop on J Street spread out of control and began consuming the neighboring buildings. By the next morning seven-eighths of the city lay in ashes. The same process was repeated in July, 1854 (Askin 1978). Yet, in each instance, so valuable was commercial property that the embers were hardly cool before new buildings were thrown up over the ruins of their predecessors. Only occasionally was any special effort made to clear the debris, and in several cases excavation has encountered these layers of ash and charcoal, still largely intact and still containing the burned merchandise of the stores. Now preserved beneath the layers of fill brought in in the 1860s, these burned strata contain an invaluable collection of closely dated information on Sacramento's early history.

ARCHEOLOGICAL EXCAVATIONS

Just as the original impetus for the growth of Sacramento occurred not here, but 40 miles upstream at Coloma, so it is interesting that it was the excavation of the site of Sutter's sawmill that initiated archeological investigation of the American period in California. Work there by the University of California in 1947 exposed the timbers of the original mill foundation (Heizer 1947), as well as a variety of contemporary artifacts (Fenenga 1947).

A few years later this first foray into gold rush archeology was followed by a series of investigations at Sutter's Fort. Initial work, under the auspices of Sacramento State College, consisted of a few small test trenches. More extensive investigations by the Central California Archeological Foundation followed (Olsen 1961; Payen 1961). This work demonstrated that the fort was constructed upon a prehistoric occupation mound, established the original position of a number of adobe walls, and located two wells and the floor of the fort's shoemaker's shop.

These early excavations were important not only for what they accomplished but also for their influence on later work. Both at Coloma and at Sutter's Fort the primary objective was the exposure of original architectural features. Fenenga's summary of the relevance of other remains particularly artifacts is worth repeating:

> These, no less than the mill timbers themselves, are of historical importance, for some of them can be precisely dated, thereby offering a test of our general conclusions. Perhaps of equal importance is the insight the objects afford into the needs and into the means of satisfying those needs amongst the people of Coloma in the period 1847-1853 (Fenenga 1947:160).

Yet at each site the nature of the deposit determined that few artifacts would be found. Little effort was consequently expended in their analysis, and when, a few years later, work began in a very different kind of deposit in Old Sacramento (Fig. 1), archeologists continued to view the nineteenth century through the foundations of its architecture.

Third and J Street Excavations

The first archeological investigations of Sacramento's commercial district were undertaken in 1966 as a salvage project, funded by the California Division of Highways. Five city blocks along Third Street, in the oldest area of the city, were cleared for the construction of Interstate Freeway 5. All buildings in the project area were demolished and most of the rubble removed. Preliminary historical investigation of the area had been conducted by students and staff at the University of California, Davis and by personnel of the Sacramento Housing and Redevelopment Agency. Using this research, areas for excavation were selected to obtain large

numbers of artifacts and maximum architectural information. Initial plans included excavation in several of the vacant blocks. As the project proceeded, however, extensive vandalism and theft required the concentration of all archeological work in one block, surrounded by J, K, Second and Third streets, where 24-hour security could be provided.

The site as it appeared at the start of the field work was a one-square-block, level area consisting of sandy soil, brick rubble, and small fragments of wood. Since it was immediately recognized that more than shovel power would be needed, a backhoe-front loader was employed to assist in the excavation, and clearance of the site began. Even though heavy equipment had driven over the entire area and bulldozers had pushed rubble about, it was found that below the 6-12-in thick demolition level, little damage had been done to the soil other than some compaction.

After clearance of the demolition rubble, excavations were initiated in the remains of seven buildings (222-230 J, 1016-1020 Third). Some of these buildings were excavated in their entirety; others were cross-trenched and sampled. Since most of the work was conducted *within* the buildings, major trash deposition areas were seldom encountered. At three of these sites (226, 228, and 230 J), the project exposed ash-and-charcoal strata deriving from stores which had burned in the conflagration of 1852. Hastings (1968) has described the stratigraphy and architecture of the buildings investigated, and two of these deserve more extended comment.

The Carroll Building (228 J Street, Project Bldg. 115A) was located at the corner of Third and J streets. The major levels of occupation exposed through excavation were the burnt remains of the original wood-frame construction (which extended back only 60 ft from the J Street entrance), destroyed in the fire of 1852, and the post-1852, 21-by-83-ft brick structure which superceded it (Fig. 2a, 2b). The wooden structure had originally been used as a general merchandise store, and this use was reflected in the material recovered from its burned remains. Immediately after the fire a new perimeter trench was dug around the outer edge of the property in order to construct brick footings for a new building -- destroying in the process, unfortunately, anything that might have remained of the foundations of the original wooden building. Because of the desire to erect new buildings as rapidly as possible, the burned merchandise within the store and the remains of the store itself were left *in situ*, suffering only from some leveling as the new construction proceeded. A cross-foundation left intact near the rear of the building may have been the brick foundation for the rear portion of the wooden structure. This was smaller in cross-section than the larger brick footings for the second building but would have been sufficient to support a lighter wooden structure. Directly under the smaller footing was a level of charred wood which represented a wood pad laid to receive the brick in the soggy ground, and thus to stabilize the weight of the building above.

Similarly, after the new peripheral construction trench had been dug through what remained of the original wood structure, 2-in thick oak planks were laid down at right angles to the foundation line along the entire bottom of the trench. The brick foundation was then laid on top of this wooden pad. The foundation was constructed in the same manner as those of most other buildings in Old Sacramento. Stepped brick carried the wall directly above: a wooden ledger supported by brick held the floor joist on the inside of the foundation wall. The pockets that received the wooden floor joists were clearly outlined on the inside face of the wall immediately above the foundation. This floor was removed, and a concrete one poured in its place, some time after the building was raised to the new street level in the 1860s. After the pouring of this last floor (which effectively preserved the underlying deposits), the only indication of later use of the area was staining on the concrete surface where wooden partitions had rested.

The most interesting aspect of the Carroll site excavation involves the distribution and variety of artifacts in the fire level, since this material provides a record of the merchandise on hand in the store at the time of the 1852 conflagration. As the location of these burned remains was mapped, an outline of the inventory and operation of the establishment began to emerge. The great majority of the artifacts were found concentrated in the rear three-quarters of the building, while the front 15-20 ft of the store yielded very few artifacts

relating to the 1852 period. At a position 15 ft inside the front door, large concentrations of burned material appeared. Two major collections of burned and broken clay smoking pipes were found at this location. Directly behind these were concentrations of buttons, burned grain, and other remains representing goods that were sold during the first few years of the store's history. This appears to indicate that a counter ran across the front of the store about 15 ft back from the front entrance. Behind the counter were storage shelves or tables which contained all of the goods sold by the store. The public would enter the front door and stop at the counter, the areas behind the counter being reserved for the employees. The location of large concentrations of artifacts in the remains of the fire indicates that the store was well stocked with provisions, and that destruction of the entire stock took place when the fire destroyed the building. Except for the clay pipes (Humphrey 1969), however, the artifact assemblage from this building (like those from the other buildings in the project) has never been analyzed.

Archeological investigation indicates a somewhat more complex history for the D.O. Mills Bank building (226 J, Project Bldg. 114), including three discernible building phases (Fig. 2c, 2d). Evidence of the first and earliest phase consisted of the burned wood and ash of a pre-1852 structure. Very little of this debris remained. The second phase consisted of a one-story 1852-1865 building, and the third of a new two-story structure probably erected when the street was raised in 1865-1866.

Archeologically, the most noteworthy remains are those of the 1852-1865 building, the original D.O. Mills Bank. The archeological data, as with the Carroll Building, demonstrate the public and restricted areas associated with the use of the structure, as well as the building techniques of the time. Contemporary newspaper accounts advertised the building as a granite structure. When excavation took place in front of the building, a lower portion of the exterior wall revealed what was called the granite surface. Actually, it was a stucco over brick – the stucco lined and painted to represent a stone facing. This was a standard facing technique and the stucco finish, called mastic, was found on many of Sacramento's buildings in the 1850s and 1860s. The use of simulated granite on the front of the building was in keeping with the flooring material discovered in the public portion of the bank area. This material consisted of 15-in marble squares laid on a diagonal and resting directly on top of wood flooring, which carried the load of the stone. The marble flooring was found only in the front public section of the bank and was doubtless designed to maintain a feeling of stability in keeping with the qualities that the public would have expected in a banking firm. Behind what would have been a counter or barrier and surrounding the brick vault pad was the employee area. This section revealed no indication of stone flooring and was in all likelihood merely finished with wood.

A third area at the rear of the bank consisted of an open patio and brick walkway which had extended from the back door to a privy. This area is of interest because it contained two different levels of walkways interspaced with what was probably flood-borne sand. Both walkways extended from the vicinity of the back door and continued over to what may have been a common privy area for both the bank building and the structure directly to the east. The rear portion of the building also contained three different superimposed cistern or privy pits all brick-lined, of either circular or rectangular construction.

Hastings Bank

A few test units were excavated beneath the Hastings Bank building, located on the southwest corner of Second and J streets, in 1975, prior to its restoration. The structure is important historically as an early location of the state supreme court, Wells Fargo Express Company, and the Pony Express. No report was prepared on the project.

Central Pacific Railroad Depot

In January, 1863, the Central Pacific Railroad Company began construction of the western half of the nation's first transcontinental railroad, starting from the embarcadero in Old Sacramento. In the fall of 1867, a large (75-by-200 ft) passenger depot was constructed at the foot of J Street on the levee. This structure, which stood on the site until 1880, was reconstructed in 1975-1976 by the California Department of Parks and Recreation. Limited archeological investigations were con-

ducted on the site in September, 1975 (Felton 1978). Excavations included trenches across the site and exposure of several broad areas. Overburden was removed by backhoe.

The 1975 work revealed little direct evidence regarding the architecture of the building to be reconstructed. Presumably, this was due to the systematic demolition of the depot and almost immediate construction of a series of freight sheds on the site, as is indicated in contemporary newspaper accounts. Evidence of the location of the 1867-1880 depot was limited to a series of wood-lined drainage trenches, foundation pits, and railroad track ballast deposits inside and outside of the building. Extensive remains of the post-1880 freight sheds, in the form of brick and concrete foundation elements, were superimposed on the depot-related deposits.

Artifacts representing four different stratigraphic components were recovered. Two of these components predate the construction of the 1867 depot. Because of their depth (8 to 12 ft below the present surface) and limited exposure, only very small artifact samples were recovered from these layers, making accurate dating impossible. Few diagnostic artifacts datable to the 1867-1880 period were recovered, a situation possibly attributable to clearing of the depot site for the construction of the freight sheds.

Most of the artifacts encountered date to the late nineteenth and early twentieth centuries, and were apparently deposited while the freight sheds stood on the site. Documentary records and oral history indicate that these structures and the surrounding grade were raised to the present level by 1914, an event which seems to account for the burial of these artifacts by 4 ft of fill. This component contained numerous railroad-related artifacts (a brass lock, telegraph battery electrodes, lead seals, spikes, tie plates, etc.), a variety of glass bottles, early electric light bulbs, and an English ceramic urinal with a maker's mark dated 1860-1898. Most of these artifacts were concentrated in the office area of the freight sheds.

While these limited investigations yielded relatively little direct architectural evidence of the 1867-1880 depot, they did provide useful insight into the industrial and depositional history of the site, the logistics involved in examining complex, deep, urban/industrial deposits, and the critical interrelationships among archeological, oral, and documentary historical data.

Fourth and K Streets Excavations

Excavations were conducted on the south half of the J/K/3/4 Block during the winter of 1976-77 as a salvage effort prior to construction of a major hotel complex. These investigations were organized into two phases. First, a trench was dug mechanically along K Street about 30 ft back from the street front, in order to clarify building stratigraphies and depth of deposits. The resulting stratigraphic profile was also used to test the assumption that sand-fill strata encountered in previous excavations were flood-deposited (Pritchard 1972; Hastings 1974). Sand-fill strata were repeatedly encountered within the ten buildings transected by the trench, but as the stratigraphic profile of each building was unique, and some contained no sand at all, the sand layers are attributed to fill intentionally deposited by individual owners during or after the raising of their buildings in the 1860s.

Independently of the trench, a 30-by-30-ft area was excavated which was known to have been, from 1854 until after 1900, an open courtyard formed by the back walls of four saloons. This, as expected, proved to be an area of intensive trash deposition, and three major features were encountered (Fig. 4).

Two of the features were situated along the rear wall of 325 K Street, a brick structure erected in 1854. The deeper of these was a wood-lined privy (Privy 1) which extended below the demolition surface from 72 to 114 in. Since, during the "life" of such facilities the accumulating privy fill was periodically removed, encountering one containing the original deposit is unusual. This anomaly, plus a *terminus post quem* of 1862 based on dated ceramics, suggests that the contents date to the raising of the building (and apparently the privy facilities) to the new street level in 1866. The raising of the structure corresponds with the beginning of an 18-year occupation by Owen Hannan, an Irish immigrant who used the place as a saloon. Hannan was the first occupant who had children, and it is noteworthy that a child's crutch

was found in the bottom of the pit. An unexpected aspect of this deposit is the recovery of Chinese liver fluke (*Clonorchis sinensis)* eggs from the privy soil (Hall 1978a; 1978b; Fig. 3b). Since this fluke, which is a major human parasite throughout the Orient, was not discovered by medical science until 1875, its recovery here presents an interesting example of the potentials for paleoepidemiology of the microscopic study of privy soils.

Immediately overlying the privy was a 6-ft thick deposit of later trash (Trash Pit 1). An artifactual *terminus post quem* of 1881 is available, so the deposit may be expected to date within a few years thereafter. The common occurrence of German mineral water jugs in this deposit may date it to the occupancy of the saloon by Elias Gruhler (1884-1888), a German immigrant. This suggestion is strengthened by the numerous toys recovered, since Gruhler had several small children, while Hannan's children by 1880 had grown and moved away.

On the opposite side of the courtyard, at the back of 1020 Fourth Street, a brick-lined privy was excavated which, prior to its abandonment, was emptied and then filled with trash (Trash Pit 2). Artifacts from this feature, too, indicate a deposition date in or shortly after 1881. This presumably associates it with the occupation of the building by Klebitz and Green's Saloon (1855-1885), a prominent Sacramento establishment.

Several units were also placed in the open courtyard (assignable to 1022 Fourth Street) which separated these features. They encountered a series of fill layers (numbered sequentially upward, Fill I-IV) separated by compacted surfaces. Datable artifacts were scarce, though a *terminus post quem* of 1856 is available for Fill III. The concentration of hundreds of oyster shells in Fill III and Fill IV may well associate them with the operation of an oyster saloon at this address in 1861. As the shells are all of Pacific oysters *(Ostrea lurida),* the deposit should at least predate 1870, after which time Atlantic oysters swamped the market (Carlton and Kellogg 1978).

A preliminary study of the excavations, including analyses of several categories of the recovered materials, has been reported by Schulz (1977). A final report is now in preparation.

California State Railroad Museum History Building Site

Test excavations were conducted in 1977 on the site of the proposed California State Railroad Museum History Building, at the north end of Old Sacramento, in the area between I Street and the freeway to the north.

Historically this parcel was used for industrial and commercial purposes. It was the site of the Lambard Flour Mill (built in 1853 at the corner of I and Second), the Sacramento Iron Works (built in 1852; it stood immediately west of the flour mill), and the Sacramento Waterworks and City Hall building (built in 1853, I and Front streets). The northern portion of the site was occupied by Sutter's Slough, an old river channel that was gradually filled between 1857 and 1880. A series of small dwellings and stores stood on pilings at the west end of the slough during the 1850s and 1860s (Porter and Reinoehl 1977).

Excavations included backhoe trenches transecting various building locations. The work was planned to determine placement of the structures and to define, date, and interpret the stratigraphic profile in each area of the site.

Of particular interest were the flour mill building, the iron works machine shop, and the waterworks powerhouse. Architectural evidence of the flour mill and machine shop was encountered from 5 to 12 ft below the present surface. These remains include brick walls, foundations, column footings, and machine mounts. Deposits were identified which represented the original surface of the parcel, the slough bank and bottom, later additions and modifications of the buildings and grounds, the demolition of the buildings, and subsequent uses of the site.

The city waterworks building itself was located on the southern periphery of the proposed museum history building site, and so was not extensively investigated. This structure was used as the city jail in addition to its other functions; the floors of two small cells were exposed. The powerhouse which enclosed the waterworks boilers, engine, and pumps was located to the north of the waterworks building within the construction project's impact zone. Excavations in

this area reached depths exceeding 20 ft, and exposed brick walls, a stairway, and a large timber configuration believed to be a pump and/or steam-engine mount.

After removal of the waterworks to a new site in 1873, the original building continued to be used as the city hall and jail. Fill covering the powerhouse ruins contained large quantities of both animal bone and the fragments of a large number of plain white earthenware ("ironstone") plates, bowls, and pitchers. Presumably this debris represents the remains of nineteenth-century prisoners' meals, which were discarded in the then-empty building (Schulz 1979a). The lowest artifact deposit, which rests directly on the wooden floor below the machine mounts, may represent earlier material deposited while the facility was in use prior to 1873.

The Railroad Museum History Building is now under construction. Because of the pressing construction schedule, no further archeological investigation was conducted on the site. A draft report describing and interpreting the stratigraphy and artifacts revealed during the 1977 excavation has been completed (Porter and Reinoehl 1977).

The 1849 Scene

This half-block area (the east side of Front between I and J) of Old Sacramento State Historic Park has witnessed a more intensive series of excavations, over a longer period of time, than any other area of the city. Work was initiated by Sacramento State College in 1970 and 1971, followed by Junior League excavations in 1972, and State Parks excavations in 1974, 1976, and 1978. Except for the last two seasons, this work has consisted primarily of test operations, designed to clarify stratigraphy and depth of deposits, or to locate portions of specific historical structures. The sites of seven buildings have been the focus of a large portion of this work, since they are slated for reconstruction as part of the interpretive design for the state historic park (Figs. 5, 6).

The Eagle Theatre, California's first specially constructed theater, was a wood-and-canvas structure built on Front Street (modern 925 Front) in July 1849 and destroyed the following winter (Hume 1976). Excavations at the site encountered only limited evidence of this early use of the site. They did, however, locate at the base of the cultural deposit a large wooden plank which represented the back (eastern) wall of the theater. Shallower levels contained abundant evidence of later brick structures that occupied the site, and a wide variety of cultural debris (Fig. 3c). The site has been described in detail by Pritchard (1972).

South of the theater, at the corner of Front and J streets, was the Tehama Block - a wooden structure erected in late 1849 and torn down to be rebuilt in brick in August, 1851 (Woodward 1975). Investigations, though limited, demonstrate that the site was thoroughly cleared and leveled after the demolition, and a basement excavated through the original ground surface.

North of the theater was the City Hotel, built in 1849 as Sacramento's first attempt at rudimentary elegance in transient lodging. The hotel was the first and largest of a succession of wooden buildings which occupied the front quadrant of Lot 3 (917-919 Front). The site has been tested repeatedly since 1970, and though a few wooden architectural features have been encountered, they have not been firmly associated with the hotel. While structural remains of the wood buildings were very scanty, small trash and privy deposits were common. Ten strata have been identified, the lower three of which represent the earliest years of occupation, 1848 to 1878. In 1878 Baker & Hamilton built a hardware warehouse over all of Lot 3, and the upper seven strata are associated with this and succeeding structures (Furnis 1979).

Adjacent to the City Hotel was a contemporary structure, the Hotel de France (915 Front). This building too was constructed in 1849, but unlike its neighbor it stood (through several changes in name and ownership) until after the turn of the century. Archeological investigation has demonstrated that in 1864 the structure was raised about 4 ft, so that its second floor would be at the new street level. Consequently, no remains of the hotel itself were low enough to be buried in the fill. However, an annex which had been attached to the rear of the building by 1852 was apparently demolished to facilitate the raising operations, for its floor was encountered intact on the original ground surface (Fig. 5a). A single cultural stratum underlying the annex floor doubtless dates from

the early gold rush period. Eight overlying strata – alternating levels of trash and sterile sand – span the period between raising of the hotel in 1864 and its demolition (and the sealing of the site beneath a warehouse floor) in 1905. The trash levels at this site are among the most productive thus far encountered. The rich assemblage of ceramics, bottles, glassware, food remains, and other items should provide an interesting record of life at the hotel, and analysis of these remains is now underway.

Further north along Front Street, on the northernmost parcel on Lot 2, early (1849-50) illustrations depict a wood-and-canvas restaurant. This structure has been argued to be the site of the French Restaurant, which is otherwise known only from newspaper accounts (Woodward 1975). Re-examination of the historical evidence in connection with the archeological work at the Hotel de France, however, indicates that by mid-1852 – if not originally – the restaurant was situated in the hotel. This is perhaps fortunate, since investigation of the more northerly site has failed to elicit any clear evidence of early gold rush period structures or strata. The deposit is badly disturbed by a complex structural history, and attempts to find evidence of an end-of-the-century Chinese laundry operation were equally unsuccessful.

Two early buildings located on J Street (115 and 113 J) have been much more productive. These are the New England Seed Store of J.L.L.F. Warren, who was undoubtedly the dominant figure in introducing modern agricultural methods and plant varieties to California, and the adjacent general merchandise store of Cothrin and Potter. Both structures burned in the fire of November, 1852. Investigation of the resulting charcoal-and-ash stratum provided some limited details on the structures. The Cothrin and Potter building, for example, was clearly 20 ft wide and at least 60 ft deep. More importantly, however, the excavations yielded a partial stock inventory of the two enterprises (thousands of identifiable seeds and clay tobacco pipes; dozens of hoes (Fig. 3d), shovels, and pickle and ale bottles; as well as a variety of other goods), and it also revealed the approximate distribution of these goods within the stores (Butler 1979).

A final feature investigated at the 1849 Scene was a brick-lined cistern located near the northern end of the block (at 903 Front). Apparently the cistern was excavated sometime during the early history of the city and then abandoned when municipal water supplies made it unnecessary. It was filled with a wide variety of trash and food debris, all dating to about the turn of the century. Similar cisterns have been located on adjacent parcels but have not been excavated.

J/K/6/7 Block

Excavation on this block took place in 1979. Initially investigation focused on locating deposits associated with the Golden Eagle Hotel (located on the northwest corner of Seventh and K streets), an important Sacramento enterprise from 1851 to 1964. These efforts met with very limited success, although two trash features associated with the hotel and probably dating to the early 1860s were encountered. Investigation of neighboring areas of the block encountered two trash features associated with an 1870s oyster saloon at 621 K Street, as well as features associated with a blacksmith shop at 615 K Street. Analysis of the results is now in progress (Adrian Praetzellis, Sonoma State University, personal communication).

Other Excavations

Archeological investigations were undertaken in 1978 prior to construction of a state office building and parking complex on two city blocks bounded by Eighth, Tenth, O, and P streets. Excavation consisted of four 45 to 55-ft backhoe trenches. Trench placement rationale is unclear, but as few artifacts and no features were encountered, the area was considered to have minimal archeological potential (Orlins 1978).

Early in 1979 Cosumnes College began an investigation program at the Enterprise Building (914-918 Second Street), across the alley from the 1849 Scene. No reports on this work are yet available (David M. Abrams, personal communication).

DISCUSSION

The primary objective of this paper has been to provide a summary of historic sites archeology in Sacramento. The detailed review necessary to provide this summary, however, has led us to several conclusions. For the most part these conclusions deal with approaches to excavation. Yet, since field methodology proceeds from our research objectives and our view of the resource, it is closely related to more theoretical concerns.

It is certainly a fair assessment that research strategies in Sacramento have been heavily influenced by those applied in prehistoric archeology. One of the obvious by-products of this influence has been the often cavalier notice given to archival evidence related to site history. Even when attempts at thorough investigation of the records have been made, the efforts have tended to postdate the excavations. The more recent work at the 1849 Scene has been an exception to this generalization, in that it has relied heavily on the detailed historical background prepared by Woodward (1975; 1977). Yet Woodward's research too has tended to underplay twentieth century developments that have affected the deposits. Even the recent work on the J/K/6/7 Block suffered from a research design (Schulz 1979b) which, because of insufficient attention to developments during demolition, emphasized investigation of "resources" that had already been destroyed when the block was leveled several years previously.

Approaches to fieldwork have also been influenced and not always favorably by methods developed in prehistoric archeology. Thus, sampling designs that are applicable to the highly mixed deposits characteristic of aboriginal middens and to time frames measured in centuries or millenia, are maladapted to recent urban deposits marked by clear stratigraphy, a diversity of highly specialized depositional patterns, and a chronological framework in which control in decade-or-finer units is crucial.

While, for example, small randomly positioned units have been an invaluable tool for prehistoric research, their record here is far less positive. Such units (Fig. 5b) usually produce only stratigraphic information, and even this ordinarily lacks chronological control and is reliable only for a specific building site or property parcel.

Another result of the same influence is the conflict between excavation in arbitrary vs. natural layers and the difficulty in correlating the results of these two approaches. This problem arose during the first excavation project in Old Sacramento (Landberg 1968:62), and it is no compliment to those who have worked in the area that it has repeatedly afflicted us ever since.

To some extent, the use of both small units and arbitrary layers is related to the primary concern with architecture which has guided much of the work in Old Sacramento: neither broad exposure nor natural stratigraphy is essential when the objective is merely to locate and describe structural foundations.

While excavations directed toward the definition of particular architectural features have sometimes been successful, they have tended to direct interest away from investigation of the *use* of the given sites. This is perhaps understandable, since available expertise is greater in areas of architecture and structural history than in the analysis of material culture and its use in studying past human behavior. Historical archeology elsewhere, however, has begun to move in the latter direction. J.S. Otto (1977), for instance, has demonstrated and analyzed a correlation between archeological ceramics and socioeconomic status in the antebellum South. Similarly, Payen (1978) has used the farriery and related gear recovered from two Shoshoni camps in Nevada to study the economic conditions of the inhabitants. Preliminary efforts have been made in other areas to employ faunal analysis to the same ends (Losey 1973; Herskovitz 1978; Schulz 1979a). The identification of ethnic differences in site usage has also become an increasing concern of archeologists (Schuyler 1980).

It may be noted that an increasing interest in such problems in Sacramento has been accompanied by a shift in field methodology. Most recent work, for example, has returned to the productive use (pioneered in 1966) of heavy equipment, particularly backhoes, both for trenching and for removing overburden from strata to be investigated (Fig. 5c, 5d). The latter procedure was especially valuable in the Warren and Cothrin excavations at the 1849 Scene in 1978, allowing broad horizontal exposures of nearly the entire buildings. Hand excavation, meanwhile, has shifted from scattered

units to concentrated exposure of discrete features or particular strata. This has the advantage of yielding assemblages sufficiently large to allow quantitative analysis; it also, incidentally, facilitates close chronological assessment on internal evidence.

We believe that recent work in Sacramento illustrates a shifting focus in historic sites archeology. We also believe that many of the results of this work will begin to demonstrate its significant potential. A few of these studies are included in this volume; others are in preparation for subsequent reports. Hopefully these initial attempts will stimulate a further refinement in methods and goals and result in even more productive analyses.

ACKNOWLEDGMENTS

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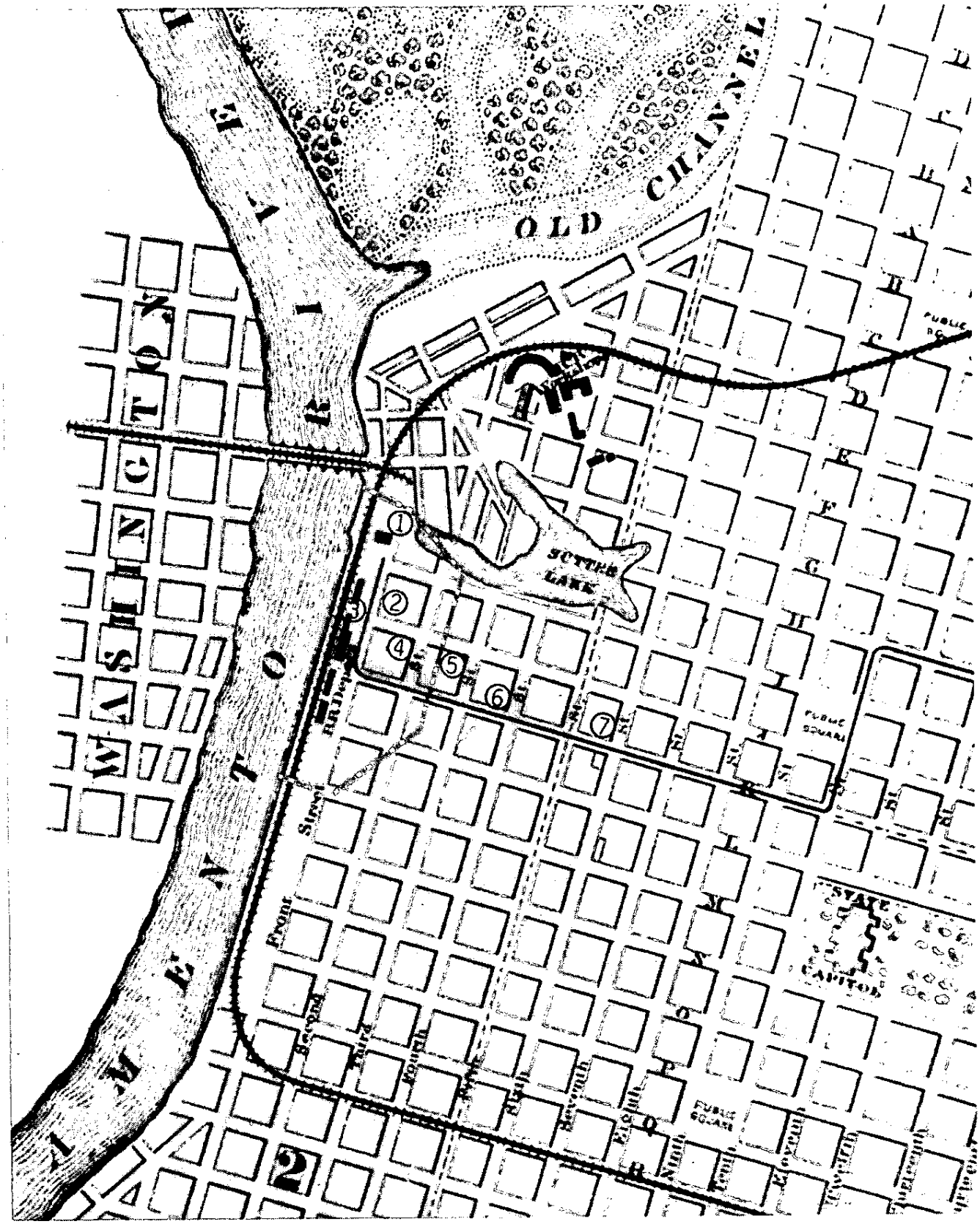


Figure 1. Downtown Sacramento, ca. 1870, showing sites of major archeological excavations: 1) Waterworks/City Jail, 2) 1849 Scene, 3) CPRR Depot, 4) Hastings Bank, 5) Third and J streets, 6) Fourth and K saloons, 7) J/K/6/7 Block (Golden Eagle Hotel). Dashed line indicates the Old Sacramento District.

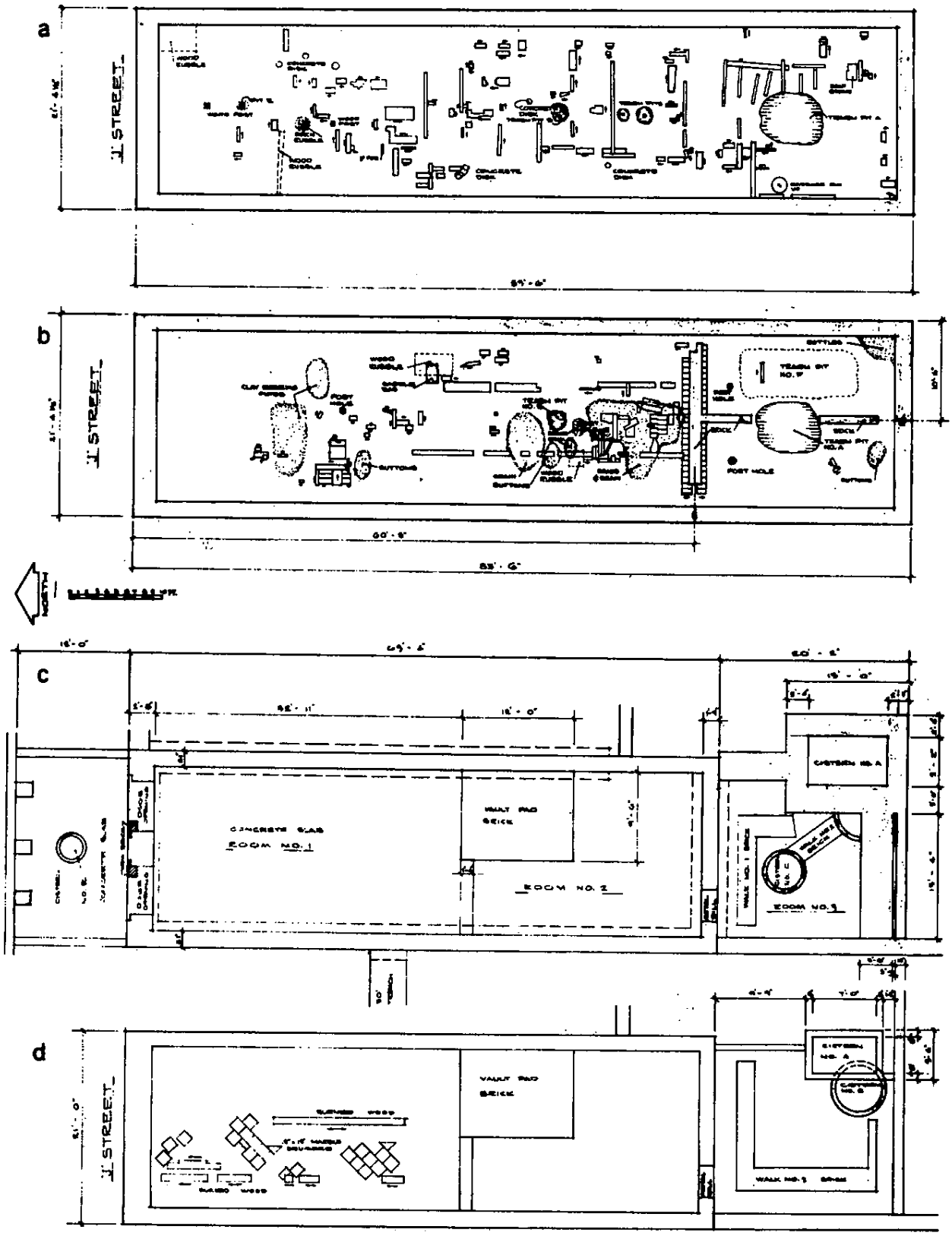
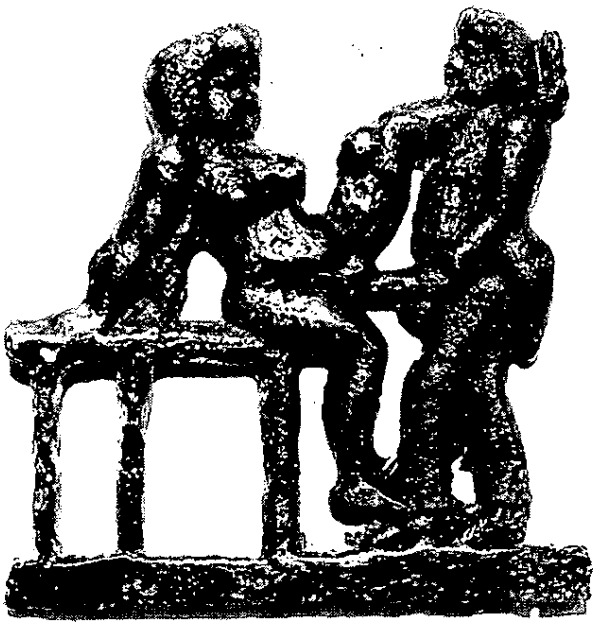


Figure 2. Floor plans from Third and J Street excavations, 1966: a) Carroll Building, upper concrete slab level; b) same building, 1852 fire level; c) D.O. Mills Bank, upper level; d) same building, 1852-1860s level.



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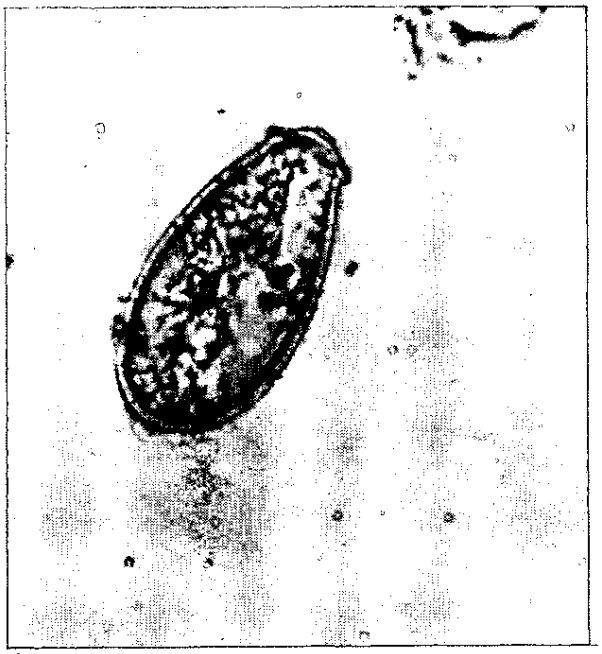

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Figure 3. Unusual finds from Old Sacramento: a) A seldom seen sidelight on Victorian culture is provided by this erotic plaque, recovered on Third Street in 1966; b) Egg case of the Chinese liver fluke, recovered from privy deposits at 325 K Street; c) An 1850s handbill, still preserved and legible, found at 925 Front Street; d) Part of a supply of hoe blades which burned with the Cothrin Store (710 J) in 1852.

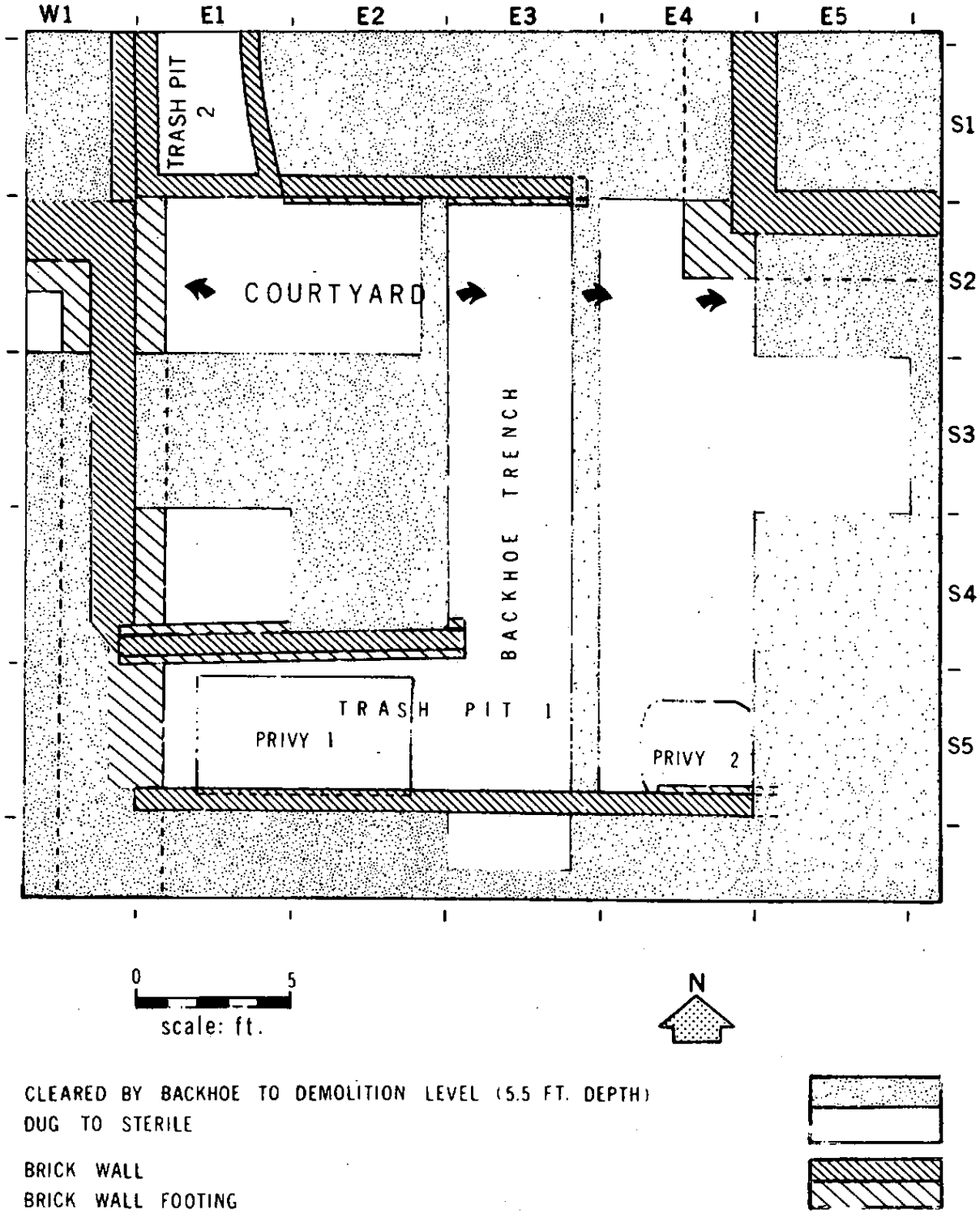

Figure 4. Excavation plan of the Fourth and K Street project, showing the features located behind two saloons.

a

b

c

d

Figure 5. Excavation in Old Sacramento: a) Exposure of an early 1850s wooden floor of the Hotel de France (915 Front), in 1976; b) Use of small scattered units at the 1849 Scene, 1976; c) Use of backhoes for large-scale trenching and overburden removal, Fourth and K excavation, 1976; d) Recording soil profiles in trench along K Street, 1976.

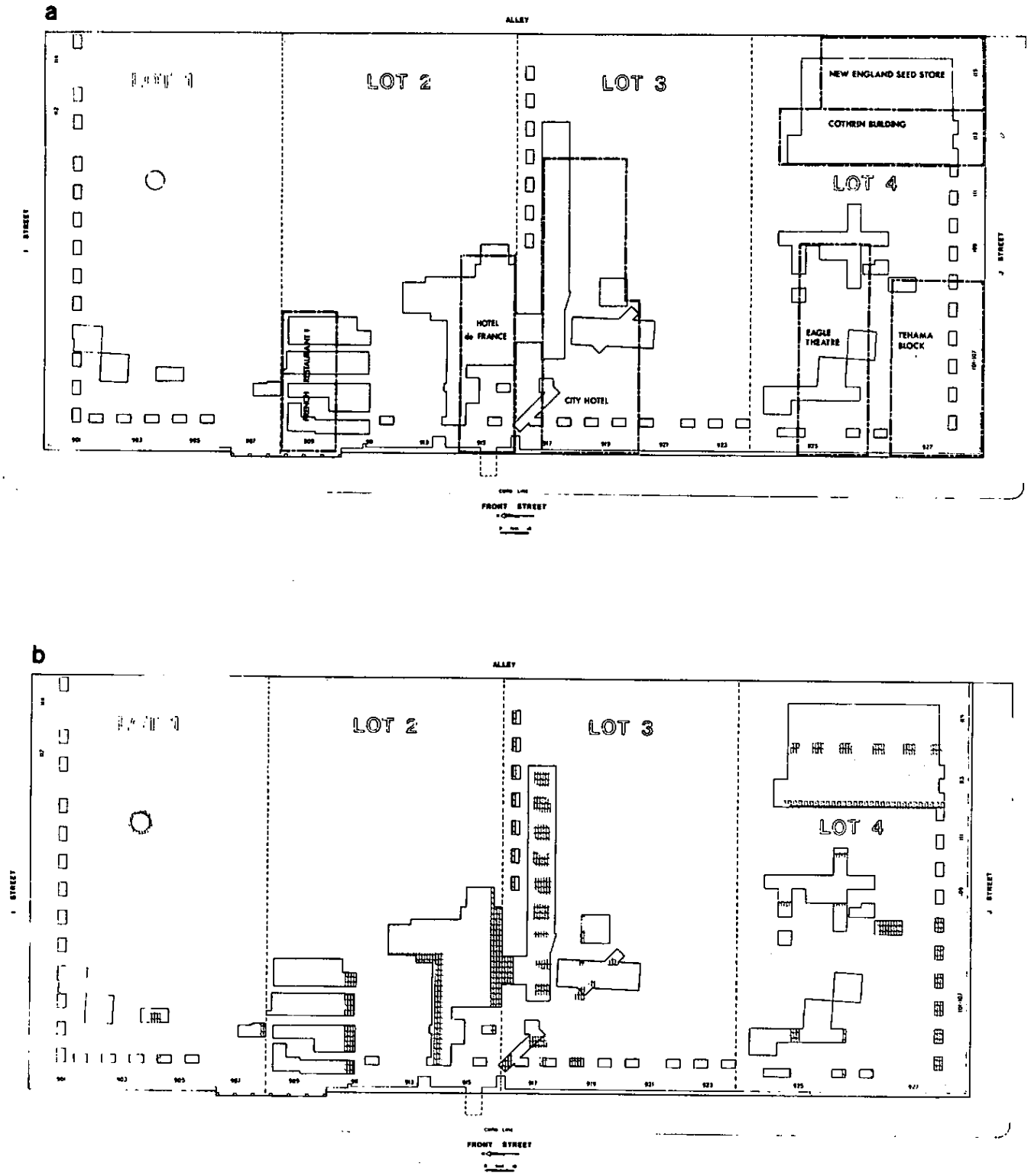

Figure 6. Map of the 1849 Scene, Old Sacramento: a) Locations of early buildings which have been investigated; b) Major features encountered. Position of all excavation units is outlined.

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COINS AND TOKENS OF OLD SACRAMENTO

Glenn J. Farris

INTRODUCTION

The 216 coins and tokens recovered from archeological excavations in Old Sacramento from 1966 to 1978 provide a remarkable sampling of the variety of monies used in the city's downtown commercial area between 1848 and the 1920s. These pieces, which were found in the area of Front to Fourth streets between I and K streets (Schulz, Hastings, and Felton, this volume), have been analyzed in respect to their archeological contexts as well as their numismatic categories. The collection has been organized into four main groupings:

1. United States coins, including examples of nearly every copper, nickel, and silver denomination issued by U.S. mints;

2. Foreign coins, representing 12 nations and colonial governments;

3. Chinese "cash" coins which, since they merit special discussion, have not been lumped under the rubric of "foreign coins";

4. Tokens, or "trade checks," including pieces from perhaps eight Sacramento establishments, as well as businesses from Woodland and San Francisco, Tacoma (presumably Washington), and Douglas, Wyoming.

In preparing this study, it is my hope that the value of the coins and tokens of Old Sacramento may be seen in a balanced perspective. Too often archeologists seize on a dated coin as an accurate time marker for a given stratum of an excavation. Though such a piece may well provide a *terminus post quem*, many coins circulated for decades or even centuries prior to their deposition. It is therefore necessary to look for information that can contribute to the refinement of dating with coins and tokens. In the case of Old Sacramento, I think that the historic consequences of an 1857 law demonetizing foreign coins (i.e., removing their status as legal tender), the opening of the San Francisco mint in 1854, and the use of tokens in the early decades of the twentieth century all provide important chronological indications for the monies found.

UNITED STATES COINS

The 146 U.S. coins found in the Old Sacramento excavations (Table 1) provide an excellent sample of the pieces in use during the century following the argonauts' invasion of Sutter's domain and the establishment of Sacramento as a boomtown. Most of the denominations minted are represented, although there are notable exceptions: half-cents, nickel three-cent pieces, 20-cent pieces, silver dollars, and gold $1, $3, $4, $10 and $20 coins. Also, there are no examples of the privately minted pieces which were issued by various banks and assay offices in 1849 and 1850. Nor were any coin hoards found; these would have been the most likely sources of the higher denomination pieces (cf. Hattori 1979). Given the relatively sparse distribution of the coins, it appears that this collection mainly represents pocket change. There are instances of coins transformed into jewelry, but these are few indeed.

Large Cents

Large cents were issued between 1793 and 1857, only at the Philadelphia mint. The four Old Sacramento examples are from the 1852 fire level at the Cothrin Building (113 J), and are all dated prior to 1849. The fact that so few of this type were found, as well as their proximity to each other in the site, seems to underscore the paucity of smaller monetary denominations in Sacramento's early economy (Table 2). This scarcity is amply described in gold rush period accounts. One

forty-niner went so far as to state that "copper coins do not exist here" (Lecouvreur 1906:288). Even as late as October, 1854, it was observed in the thriving city of San Francisco that "the superfluity of money...is so great, and the prices so high, that no copper money is in use at all, and the people have no wish that there should be" (Pfeiffer 1856:297).

Small Cents

Under provisions of the coinage law of February 21, 1857, large cents were replaced by smaller pieces. Eight of these, all Indian-head cents, were found; three of these are so badly corroded as to be illegible. The earliest legible example is dated 1883, leaving a remarkable gap of 26 years between their introduction and their appearance in the archeological record. The apparent scarcity of this denomination in Sacramento prior to the 1880s may have been due to a problem of availability since these coins were minted only at Philadelphia until 1908.

Production of the Lincoln cent began in 1909. Twenty-three examples were found, 7 of which were badly corroded. Mint dates of the remaining 16 ranged from 1912 to 1972. Of the 14 coins for which the mint could be determined, 13 were from San Francisco.

The use of one-cent pieces increased, particularly in the early part of the twentieth century, even as the larger denominations were in decline (Table 2). I believe this reflects the low prices prevalent in this period (cf. Farris 1979; Hattori 1979).

Two-cent Pieces

Two examples were found of these copper coins, which were minted from 1864 until 1872 in Philadelphia.

Silver Three-cent Pieces

These delicate coins (colloquially called "trimes") were issued between 1851 and 1873, although specimens dating after 1863 would be rare, since the bulk of those issues were melted down or exported (Yeoman 1973:97). They were initially issued in conjunction with the lowering of the postage rate from five to three cents (Reed 1972:115). Two examples were found; one is perforated and was probably made into jewelry.

Five-cent Pieces

The half-dime was a silver coin issued from 1794 until 1873. Apparently it was not popular either during or after the gold rush, and according to one miner, it was "very scarce as people do not care to handle so small a coin...which in reality is therefore of little use" (Lecouvreur 1906:288). This viewpoint seems to have been common in the East as well; once the larger nickel five-cent piece was introduced, the half-dime was soon retired from circulation.

The six half-dimes of Old Sacramento are all from eastern mints and are all dated prior to 1860. The three specimens that are legible enough for certain dating were minted in 1839, 1840, and 1842. Three others can be assigned to ca. 1837-1860 on the basis of a major style change that occurred in the latter year. It is interesting to note that no half-dimes were found from the San Francisco mint, even though these pieces were produced there for ten years, beginning in 1863.

Nickel five-cent pieces were first introduced in 1866 and minted only at Philadelphia until 1912, when the San Francisco and Denver mints began to produce them. Nineteen examples were found; 16 date between 1882 and 1920 (Table 1). Ten of these came from the adjoining sites at 230 and 228 J Street, which were operated as the Old Universal Saloon and the Old Universal Restaurant in 1910-1911.

Dimes

The relatively large number (44) of dimes recovered from Old Sacramento is an indication of the convenience of this denomination. What is somewhat surprising is that 19 of these pieces (Fig. 1a) are from the pre-1860 period, when Americans figured in terms of the Spanish bit (12½¢); the dime would seem to have been inconvenient currency at this time (see the discussion of foreign coins). However, from the account of one traveller,

it appears that the dime and the bit were considered almost synonymous:

> The American River was at length reached. It took my last two-bits — a dime and a Spanish shilling [i.e., a bit or one-real piece] — for ferriage (Leeper 1950:83).

It is also curious that only 14 examples derived from the 1860-1900 period, when the dime was presumably gaining in popularity (Table 2).

Once the San Francisco mint was well into production, dimes from Philadelphia and New Orleans disappeared from Old Sacramento almost completely.

Quarters and Half-Dollars

Thirteen quarters were found. Five predate 1860 and were minted at Philadelphia and New Orleans. Of the remaining eight, at least six are from San Francisco. This "two-bit" coin was popular in the early days (Table 2).

Sixteen half-dollars were recovered, 11 predating 1876 and clustering most heavily from 1860 to 1869. The sole example of a Carson City issue found in the excavations was a half-dollar.

Gold Coins

Five quarter eagles ($2.50 gold pieces) were found, dated 1836, 1843, 1851 (Fig. 1b), 1855, and 1857. The first four are from the Philadelphia mint, the fifth piece having been issued at San Francisco. It is worthy of note that the latest quarter eagle found in Old Sacramento is from 1857, even though this denomination was minted until 1929.

The four half eagles ($5 gold pieces) recovered all predate 1860. Three were minted at Philadelphia, while the fourth (1856) came from the newly opened San Francisco mint. Like the quarter eagles, these pieces appear only in early levels of various sites in Old Sacramento, even though the coins were issued well into the twentieth century. The abundance of these pieces during the early period may well be a reflection of gold rush inflation.

FOREIGN COINS

Most of the 27 foreign coins found in the Old Sacramento excavations are associated with the first span of the city's history (1848-1860); their variety exemplifies the diverse origins of the early gold-seekers (Table 3). Whatever their derivation, minor coins were in such short supply at this time that most of these pieces were probably circulated in the bustling commerce of the city. Their ready acceptance is attested to by one of the forty-niners:

> Mr. Hudson had paid us off every Saturday night, and it was laughable to see the kinds of currency tendered and accepted as a matter of course. He would come with a bag filled with roleaus [rouleaux] of silver coin, foreign coins of every description, simple slugs of gold stamped with their weight and value, Miner's Bank coins, etc. Everything went in those days, and in whatever shape wages came, there was no grumbling, as there was not sufficient coin in circulation to supply the demand (Gardiner 1970:71).

Although foreign coins were legal tender in the eastern states, California's coin shortage and its cosmopolitan populace combined to increase dramatically the volume in circulation here. In an 1853 letter home, a German argonaut illustrated the resulting diversity of coinage, offering as evidence the contents of his purse:

> As you know, we mix here with representatives of every nation on the globe, and consequently there is probably no place where one finds so much foreign money in circulation as here. To give a striking example, I shall mention the present contents of my purse which is divided into four parts:
>
> First pocket: One French five-francs dollar; one Peruvian piaster; one French half-franc; two Chilean reals.
>
> Second pocket: Four French francs; one Prussian half-florin; two Spanish two-real pieces.
>
> Third pocket: One East India rupee; three American half-dollars; two American dimes.

interesting historical sidelight. This monarch's reign, begun in 1830, was ended by the revolutions of 1848, which in turn sent numerous Europeans to America just in time to join the gold rush; and Front Street in Old Sacramento had a considerable French population in its early days as a commercial area (Askin 1978a). Similar French coins found in California include an 1848 franc from the Coloma (Sutter's sawmill) gold discovery site (Heizer 1947:137) and a Louis Philippe half-franc that was mixed in with some U.S. dimes in a Colusa County aboriginal site (Peter D. Schulz, personal communication).

The 1844 Belgian one-franc coin found in Old Sacramento reflected a monetary system equivalent to that of France. The piece, however, circulated as 25 cents (Lecouvreur 1906:289). This seeming anomaly is a further illustration of the entrenched concept of multiples of 12½ cents rather than 10 cents.

British Empire

Four coins issued by the British East India Company were found at Old Sacramento, including two one-rupee pieces, described by Lecouvreur (1906:290) as worth 50 cents each, and a half-rupee, valued at 25 cents. Both of these coins were evidently in common usage. The fourth East India Company piece is a "quarter anna" (Fig. 1e), about the size of a U.S. large cent, though thinner. It was worth only one sixty-fourth of a rupee, considerably less than an American cent, and may have been merely a souvenir.

Two British coins, a half-penny dating to ca. 1838-1860 and an 1862 penny, were the only pieces from the United Kingdom that were recovered. They may have had a value of roughly one and two cents respectively, since the nineteenth-century British pound was worth $4.86 U.S. (Schilke and Solomon 1964:188), and there were 240 pennies in a pound. It is uncertain, however, whether or not they were accepted as currency: I believe they were souvenirs.

An 1865 Hong Kong cent could have come in with travellers returning from the Orient or with Chinese immigrants in the latter half of the nineteenth century. Two similar coins were found at Yreka Chinatown (Farris 1979). Again, this piece was probably a souvenir.

Brazil

From Brazil comes an odd trio of coins, three copper, counterstamped 40-reis pieces (Fig. 1f) with diameters of 39-40 mm. These coins were found among the 1852 ashes of the Cothrin and Warren buildings on J Street. They seem too large to have been convenient for trade, and yet the appearance of three of them at the sites of two early adjacent commercial buildings suggests this use. The counterstamping is reported to have occurred about 1836 (Hobson and Obojski 1970:119).

Italy

A two-centesimi piece dated 1897 may well reflect the wave of southern European immigration around the turn of the century. It was probably a souvenir.

As an aggregate, this sampling of "foreign coins of every description" links the archeological finds in Old Sacramento with the historical records. It was indeed a cosmopolitan city, and its merchants must have been accomplished at computing exchange rates. They were probably very relieved when the 1857 law demonetized these coins. By 1860, in all likelihood, most of the foreign coinage that had circulated in Old Sacramento would have been turned in to beat the treasury's deadline for redemption, mainly in exchange for the products of the new San Francisco mint. Of 14 foreign silver coins to which an archeological date range has been assigned, 12 are associated with actual or potential pre-1860 dates (Table 3).

CHINESE COINS

Twenty-four Chinese cash (the familiar round coins with square holes) were recovered in the excavations of Old Sacramento (Table 4). Unfortunately, many were highly corroded and often illegible, and five from early excavations were not available for analysis. For those studied, it was generally possible to determine the reign in which each was issued. However, the mint mark was legible on only nine specimens. Overall the sample was too small and dispersed to allow analysis like that of the 75 Chinese and Annamese coins found at Ventura (Kleeb 1976) or the 72 such pieces from Yreka (Farris 1979).

It is a constant lament of historical archeologists attempting to use coins for dating strata that Chinese cash coins were so long-lived. In the sample from Old Sacramento the reigns of five emperors are represented:

Title of Reign	*Dates*	*Coins*
Shun Chih	1643-1662	1
K'ang Hsi	1662-1722	5
Ch'ien Lung	1735-1796	8
Chia Ching	1796-1820	2
Tao Kuang	1820-1850	1

Although these coins were issued until the overthrow of the Manchu dynasty in 1911, no later example than that of the Tao Kuang period (1820-1850) was found. The relative abundance of pieces associated with the Ch'ien Lung and the K'ang Hsi periods (Fig. 1g) is reasonable, considering the long reign each represented. This distribution also matches the chronological profile for the cash from Ventura (Kleeb 1976:550-551) and from Yreka Chinatown (Farris 1979).

Typically, the Peking Board of Revenue and Board of Works mints are represented, as are several provincial mints, including those of Chekiang, Kwangtung, Nan-chang, and Chih-li (Hopei). All but the last are in the southern portion of China, which accords with the patterns noted by Kleeb (1976:502) and Farris (1979).

The possible role of these small-denomination coins in the commerce of the Chinese community has been frequently discussed (Hattori 1979:431; Kleeb 1976:505; Kareofelas 1972:22). It has generally been thought that they were used as good-luck charms or mementos rather than as money. However, given that most Chinese of this period were culturally conservative and that these coins had been currency in their native country for 2,000 years, it seems possible that they were used commercially within the Chinese community. Although I have found no published reference to this utilization, Caroline Yee (Interpretive Services Unit, California Department of Parks and Recreation, personal communication) relays the testimony of an elderly Chinese man (since deceased), a resident of the Sacramento Delta town of Locke. He reported that in the early 1900s Chinese merchants in California would send to China for large quantities of cash coins to be used as tokens.

One benefit of this currency was the flexibility it offered in making change, since the cash was valued at between one-tenth and one-fifth of a cent (Kleeb 1976:506), which would have facilitated small transactions. The major advantage of cash, however, was that it could be used only in Chinese establishments. The early decades of the twentieth century in particular saw a bewildering variety of tokens issued in the names of various non-Chinese businesses for redemption there only. It is difficult to believe that the Chinese merchants would have passed up such an opportunity.

Cash coins could have served also as decorations, gifts, good-luck charms, or simply collector's items in the early Chinese community. These uses would in no way have precluded their circulation as currency, since U.S. coins have been and continue to be employed in the same way.

It has been suggested by Kleeb (1976:507) that the use of cash as currency by the overseas Chinese could be discerned through archeological evidence:

> The hypothesis that the coins were circulated within Chinese communities can be tested using the contents of monetary hoards found within a Chinese community context. If coin hoards contain Chinese cash mixed with United States coins, it seems reasonable to conclude that they were considered currency. If Chinese cash are not found in hoards containing United States copper coins, then they probably were not considered currency. If the cash were used as currency, the date that the cash ceased to circulate can be determined using the same test implications.

The main problem with this suggestion is the necessity of discovering a coin hoard, since it seems highly unlikely that anyone would hoard money of such little worth. On the other hand, a mixing of Chinese and U.S. coins of low denomination, particularly in areas known to have been commercial districts, would seem to be better evidence of circulation in trade. Also, token money of small value would have been more subject to random loss or discard than coinage with a souvenir or talismanic use. As indicated above, Chinese coins were found scattered throughout Old Sacramento, as were the small-denomination U.S. pieces (cf. Farris 1979; Hattori 1979). Lastly, a fact that may or may not be relevant here: in 1914 cash coins were finally demonetized in China (Kleeb 1976:502).

The effect on their use as money in the United States is uncertain, although I believe the overseas Chinese' sense of community with the home country would have weighed in favor of local demonetization as well. At this time the coins could easily have assumed more purely decorative and talismanic functions, or, having no money value, could have been more liable to be discarded.

TOKENS

The 19 tokens found in Old Sacramento (Table 5) are in some ways more useful to archeologists than are the coins, particularly in establishing dates. Although such pieces rarely bear dates, they are often associated with particular businesses and give a name and address, as well as a value. They were worth from a tenth of a cent up to $5 or more (Gaylord 1968:18), although in Old Sacramento the overwhelming majority were for "5 cents in trade." These were most often issued by saloons, and the convenient item of trade costing five cents was a glass of beer. This is important, because the arrival of Prohibition in 1919 spelled *finis* to most of the saloons. Most of the datable tokens derive from the period 1905-1919. Within this time, however, the establishments that issued them appeared and disappeared, frequently with very short life-spans.

In researching this collection, I relied most heavily on the Sacramento and San Francisco city directories. In two instances I was fortunate enough to locate either the former owner of the establishment or a relative of the owner. Only two of the tokens came from outside the state; curiously enough, they are the only examples with values other than five cents.

Where possible, the dating of the establishments redeeming tokens is given below. It is noteworthy that 16 of these pieces were concentrated in the vicinity of three adjoining buildings on J Street (226, 228, 230 J) (Hastings 1968).

Old Universal Saloon – 230 J Street

The 1910 and 1911 Sacramento city directories list an Old Universal Restaurant, owned by M.J. Marincovich and, next door, a saloon operated by Mrs. Angeline Marincovich. Both persons lived at 1006 Third Street, and were probably mother and son, since Angeline is listed as the "widow of George Marincovich." All eight Old Universal Saloon tokens were found in the excavations at 226 and 228 J Street. Since the saloon was operated at 230 J and the restaurant at 228 J Street, it is likely that the tokens were used in both establishments.

Golden Gate Saloon – 500 K Street

This establishment was operated by Rasmus Carstenson from 1910 to 1919. In 1920, with the advent of Prohibition, it became the Golden Gate Pool Hall, listed under the same owner. In 1922 it was rechristened the Golden Gate Cigar Store, a name it had borne in 1908.

Ensign Saloon – 1 Market Street, San Francisco

The Ensign saloon is shown in the San Francisco city directories as operating from 1907 to 1918, first under Henry Schwartz and Diedrich Meyer (1907-1909), then under M. Theo Reinke (1910-1918).

Duhain & Radonich – 130 K Street

Prior to 1908 John C. Duhain and George Radonich were listed as police officers, but in that year they opened the Gem Saloon and Grill at 130 K Street. The enterprise maintained this name until 1912. For 1913-1914, however, it is simply listed as Duhain and Radonich. I would therefore date the token to the 1913-1914 period. The place apparently folded in 1915.

Bauer's – 710 J Street

Although Charles F. Bauer operated Wissemann's Saloon at 1020 Fourth Street, the city directories for 1908 and 1909 show him briefly as also the proprietor of a saloon at 710 J Street. Considering that this token (Fig. 1h) was found in the vicinity of Wissemann's Saloon, Bauer may have continued to honor his earlier tokens for some time following 1909. This piece is of particular interest because of the imprinting, in tiny letters, of the name of its manufacturer. The firm, Patrick & Co., S.F., is listed for the period 1898-1930 in the San Francisco city directories. After this date the name changed to Patrick and

Moise-Klinkner Co. (Kappen 1976:xvi). According to Mr. Henry Sleeper, of Sleeper's Stationery Store in Sacramento, whose firm also made tokens in the first four decades of the present century, it was uncommon for the manufacturer's name to appear on the tokens.

Boede's (Bouie's) Cafe – 1015 Fifth Street

A token from this establishment for five cents in trade was found at 230 J Street, two blocks from the location of the cafe. The latter is listed in operation only in the 1907 Sacramento directory. It was owned by William Boedefeld, who resided at 1509 13th Street. In 1908 he had taken a job at the Sacramento Brewery.

Cigar Store J.W.R. – 816 K Street

One five-cent token from this business was found at 226 J Street. The store was operated by J.W. Rogers and is listed in the Sacramento directories only in 1908.

Wingard's – 25th and O Streets

Prior to 1888, John J. Wingard (or Winegardt) is listed as a brewer at the Sacramento Brewery. From 1888 to 1921 he and his heirs operated a business variously listed as a grocery store and/or saloon. In the first two or three years (1888-1890) the address is given as "25th and O"; afterwards it is specifically 2430 O Street. The place is last listed as a saloon in 1919. One five-cent token from this business was found at 226 J Street.

Storkman's – Woodland

This brass five-cent token from the nearby town of Woodland dates from the Prohibition era. George Storkman and his brother William operated two pool halls on Main Street, the former from 1919-1926 and the latter from about 1926-1935. Both used the same tokens, purchased from Sleeper's of Sacramento for $30 per thousand (William Storkman, personal communication). After George Storkman died in 1927, his widow operated the business until about 1930. When she closed up, Mrs. Storkman took a large bag of the brass tokens to a San Francisco Bay ferry and dumped them overboard during the crossing. They were mistaken for gold coins by other passengers, and the incident received some play in the San Francisco press. The jettison of the tokens emphasizes the fact that once an establishment went out of business, these pieces became valueless and were usually soon discarded. They thus often represent more sensitive dating instruments than coins, which could be circulated long after the date of minting.

Wm. Albaugh – Douglas, Wyoming

This token was unique among those found, not only because of its origin but because of its denomination. The reverse states, "Good for 6¼ cents in trade." N.C. Albaugh, the nephew of William Albaugh, informed me that his uncle operated a saloon and pool hall in Douglas between 1884 and 1900. The denomination, equal to a half-bit, documents the conservatism of merchants and the general populace in retaining the concept of breaking the dollar into "bits." Further proof of the persistence of this preference came from Henry Sleeper, who showed me a die he had made for a 6¼-cent token for use in Placerville, California in the 1920s and 1930s. Hattori (personal communication) states that a 6¼ and a 12½ cent token from Nevada dating to the early twentieth century were found in the Lovelock Chinatown excavations.

Unidentified Tokens

One token was not identified as it had only a five-digit number (31556) and the partial legend "Good for (illegible)." A final token, issued by the Tacoma (presumably Washington) School District, and good for "school fare" was recovered, but nothing is known of the date or context of its use.

DISCUSSION

Although we may assume that these coins and tokens were deposited irregularly throughout the last 120-odd years (the latest being a 1972 penny), the overall collection appears to represent three major periods of accumulation. The first, ca. 1848-1860, is typified by a motley span of foreign coins and U.S. pieces from the eastern mints. These coins monopolized the marketplace until the occurence of two events. The first was the opening of the San Francisco mint, which began producing dimes, quarters, and half-dollars in 1855 (Table 2).

As noted above, in 1857 the U.S. government passed a law demonetizing foreign coins in American domestic commercial transactions, with a provision for a two-year grace period during which foreign coinage could be exchanged for newly minted U.S. pieces (Fig. 2a; Schilke and Solomon 1964:64-69). I believe that by about 1860 the currency in general circulation in Sacramento had changed to reflect the retirement of foreign coins and many of the eastern mint pieces in favor of the products of the San Francisco mint. California's dependence on this mint was increased by the War between the States (1861-1865), which further limited the availability of coins from the East. The loss of the New Orleans mint, for example, certainly aggravated the coin shortage in the East.

The second period, commencing ca. 1860 and extending to the end of the century, is characterized by the predominance of San Francisco-minted silver coins. Until after 1900, the San Francisco mint produced only gold and silver coins; the smaller denominations, such as pennies and two-cent, silver three-cent, and nickel five-cent pieces still came in from the eastern mints. The shift from eastern coins to those from San Francisco is evident in the date/mint distribution of dimes, quarters, and half-dollars.

Of the coins for which date and mint can be determined, 15 out of the 17 dimes dated prior to 1860 are from eastern mints, whereas from 1860 on, 17 out of 19 are from San Francisco. All five pre-1860 quarters are from eastern mints; six of the seven later examples come from San Francisco. In the case of half dollars, the four pre-1860 coins are from eastern mints; seven of the eight later pieces were minted in San Francisco or Carson City.

Although half-dimes were produced in San Francisco, the six examples from Old Sacramento are pre-1860 and from eastern mints. This may reflect the introduction in 1866 of nickel five-cent pieces, which were then issued in the tens of millions annually, versus the comparatively small yearly mintage of around 100,000 silver half-dimes (Yeoman 1973:89-90, 101).

The shifting coinage during the first and second periods of Old Sacramento's monetary history is illustrated in a sampling of restaurant menus from 1849-1859 and ca. 1870-1880 (Askin 1978b). In the first menu (Fig. 2b), a combination of gold rush inflation and the dearth of small change apparently resulted in a price list in which the lowest common denominator is 25 cents. No pieces of smaller value would have been necessary either to pay for a meal or to make change on payment. The then-common Spanish two-reales coin (two bits) would have been readily accepted in place of an American quarter.

The second menu (Fig. 2c) is from 1859; its much-reduced prices (50 cents being the maximum for any item instead of the minimum, as on the 1849 menu) are in multiples of one bit, or 12½ cents. A curious anomaly appears in that the three beverages, coffee, tea, and chocolate, are priced "12½ cents each," while the remaining items, although obviously based on multiples of 12½ cents, lack the half cent, resulting in prices such as 12, 25, 37 and 50 cents. Perhaps it was assumed that the customer would consume more than a single beverage, preferably in multiples of two.

The third menu (Fig. 2d), from the depression years of the 1870s, reflects even further price reduction. By this time the nickel and dime had become well established. The highest price of any item is 25 cents, with the overwhelming majority of the dishes going for 10 or 15 cents.

The first quarter of this century is the third period distinguished in the coin accumulations of Old Sacramento. Along with a large number of small-denomination U.S. coins dating from 1890 to 1930, there was another numismatic introduction from 1900 to 1920: the trade check or token, issued mostly by establishments such as saloons and pool halls. I believe that these tokens provide for relatively refined dating of the strata in which they are found, since, although individually undated, they were often issued in the names of businesses with known spans of operation. In five instances these periods are as little as two years or less. Further, when the particular establishment honoring them went out of business, the tokens became worthless and were generally soon discarded.

In other areas of the West widespread token use began in the 1880s (Thrapp 1977), but the evidence from Old Sacramento indicates that merchant's trade checks did not become common here until the early twentieth century. Initially, saloons provided most of these tokens, but with the coming of Prohibition in 1919 they were issued by pool halls and smoke shops. There was an adequate supply of small coins by this time; the San Francisco mint had begun producing pennies in 1908 and nickels in 1912. The primary purpose of the tokens was obviously not to make change but to increase the volume of business. In the Storkman establishments noted above, for example, customers paid ten cents to play a game of pool; the winner would be awarded a five-cent token good for a purchase on the premises (William Storkman, personal communication).

In five instances tokens were found on the site, or in the immediate vicinity of the site, of the business from which they were issued. The primary example is that of the Old Universal Saloon tokens, eight of which were found in two adjoining building locations. If these pieces were found in a site, with no historical evidence, it would be hypothesized that the establishments were related in use or in operation. In this case, historical corroboration is there.

Concern with tokens in historical archeology seems to have been limited, perhaps due to the comparatively late use of many types, particularly in the West. However, the analysis of currency from Old Sacramento indicates that they can be useful in contexts from the first two decades of the twentieth century.

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TABLE 1

United States Coins from Old Sacramento Excavations

Date[1]	Mint[2]	Site Address/ Archeological Date[3]	Catalogue No.
One Cent (Large)			
1838	P	113 J St./ 1852	P-161-2646
1847	P	113 J St./ 1852	P-209-6-82
1848	P	113 J St./ 1852	P-209-6-83
1816-1835	P	113 J St./ 1852-1864	P-209-43-87
One Cent (Small)			
1883	P	909 Front/ 1880-1900	P-211-7-31
1888	P	909 Front/ 1880-1900	P-161-1491
1900?	P	909 Front/ 1880-1900	P-211-7-106
1864-1899	P	915 Front/ ?	P-161-2003
1890	P	222 J St./ 1900-1925	112B-1624
1864-1908	P	228 J St./ 1900-1925	115B-4105
1907	P	228 J St./ 1900-1925	115B-10502
1864-1908	P	230 J St./ 1900-1925	115A-3399
1912	?	1000 2nd St./ ?	P-203-424
1927	S	1000 2nd St./ ?	P-203-496
1965	P	1000 2nd St./ ?	P-203-115
1921?	?	1016-20 3rd St./ ?	116A-387
1913	S	1022 3rd St./ 1900-1925	117-3217
1946	S	1022 3rd St./ ?	117-4233
1944	S	1022 4th St./ ?	P-166-6760
1972	S	1022 4th St./ ?	P-166-6776
1937	S	222 J St./ 1925-1966	112B-996a
1944	S	222 J St./ 1925-1966	112B-996b
1953	S	222 J St./ 1925-1966	112B-996c
post-1909	?	222 J St./ ?	112-2412a
post-1909	?	222 J St./ ?	112-2412b
post-1909	?	222 J St./ 1925-1966	112-3192
post-1909	?	222 J St./ ?	112-436
post-1959	?	222 J St./ 1925-1966	112-229
1918	S	228 J St./ 1900-1925	115B-10305
1920	S	228 J St./ 1900-1925	115B-10303
1909-1958	?	228 J St./ 1900-1925	115B-4104
1917	S	230 J St./ 1925-1940	115A-633
1929	S	230 J St./ 1852-1860?	115A-2715
1909-1958	?	230 J St./ 1925-1940	115A-957
1920	S	323 K St./ ?	P-166-6052
Two Cent			
1864	P	909 Front/ 1856-1880	P-211-18-266
186-	P	325 K St./ ca. 1885	P-166-5260
Three Cent (Silver)			
1856	P	909 Front/ 1856-1880	P-161-2188
1852	P	915 Front/ ?	P-161-1313
Half-dime			
1837-1860	O(?)	1000 2nd St./ ?	P-203-515
1840	P	1022 4th St./ 1860s ?	P-166-6750
1839	P	113 J St./ 1852	P-209-29-8
1860?	O(?)	113 J St./ 1852-1864	P-209-17-103
1840	?	226 J St./ 1852	114-3026
1842	P	226 J St./ 1852	114-2776
Five Cent (Nickel)			
1868	P	226 J St./ 1900-1925	114-2777
1882	P	925 Front/ ?	022-46-3131
1910	P	1000 2nd St./ ?	P-203-422
1906	P	226 J St./ 1900-1925	114-124
1905	P	228 J St./ 1900-1925	115B-4044
1887	P	230 J St./ ?	115A-?

Table 1 (cont.)

Date	Mint	Site Address/ Archeological Date	Catalogue No.
1897	P	230 J St./ 1900-1925	115A-4309
1899	P	230 J St./ 1900-1925	115A-3221
1903	P	230 J St./ 1900-1925	115A-2718
1904	P	230 J St./ 1900-1925	115A-267
1905	P	230 J St./ 1900-1925	115A-5015
1907	P	230 J St./ 1900-1925	115A-2682
191?	?	1000 2nd St./ ?	P-203-423
1916	S	222 J St./ ?	112B-996d
1917	S	228 J St./ 1900-1925	115B-10289
1913-1937	S	230 J St./ 1900-1925	112A-306
1917	P	230 J St./ 1900-1925	115A-3216
post-1938	?	222 J St./ ?	115A-4226
1954	S	222 J St./ ?	112B-996e
Ten Cent			
1834	P	115 J St./ 1850-1852	P-210-20-85
182-	P	228 J St./ 1900-1925	115B-4103
1838-1860	O	901 Front/ ?	022-46-3132
1845	O	905 Front/ ?	022-46-3127
1860	S	909 Front/ 1890-1950	P-161-1093
1861	?	909 Front/ 1856-1880	P-161-2187
188-	?	909 Front/ 1880-1900	P-161-1617
1860-1891	?	909 Front/ 1856-1880	P-161-2364d
184-	?	915 Front/ 1854-1865	P-208-16-333
1849?	P	915 Front/ 1870-1890	022-46-1953
1873	S	915 Front/ 1865-1880	022-46-2018
1850	P	917 Front/ 1861-1878	P-207-1-96
1837-1860	?	925 Front/ ?	022-45-3624
1866?	?	925 Front/ ?	022-45-411
1848	P	1000 2nd St./ ?	P-203-919
1850	P	1022 3rd St./ ?	117-4159
1850	P	1022 3rd St./ ?	117-3670
1855	P	1022 3rd St./ ?	117-4160
1856-1860	S	1022 4th St./ 1860s	P-166-6710
1843	O	113 J St./ 1852-1860	P-209-39-37
1839	P	115 J St./ 1852-1860	P-210-13-309
1865	S	222 J St./ ?	112B-2411
1849	P	226 J St./ 1852	114-3025
1856-1860	S	228 J St./ 1900-1925?	115B-4088
1887	S	230 J St./ 1900-1925	115A-2716
1855	P	? / ?	022-46-1158
1841?	O	325 K St./ 1866	P-166-7386
1871	?	325 K St./ 1885	P-166-5100
1872	S	325 K St./ 1885	P-166-497
1874	S	325 K St./ 1885	P-166-5748
1910	S	1000 2nd St./ ?	P-203-419
1903?	P	1022 3rd St./ ?	117-458
1902?	S	226 J St./ 1900-1925	114-1526
1903	S	226 J St./ 1852?	114-1209
1899	S	228 J St./ 1900-1925	115B-10288
1918	S	1000 2nd St./ ?	P-203-420
1919	S	1000 2nd St./ ?	P-203-421
1944	S	222 J St./ ?	112B-996f
1926	S	228 J St./ 1900-1925?	115B-10304
1945	S?	228 J St./ 1900-1925?	115B-5036
1924	S	230 J St./ 1900-1925	115A-5016
1916-1945	?	230 J St./ 1900-1925	115A-3017

Table 1 (cont.)

Date	Mint	Site Address/ Archeological Date	Catalogue No.
1964	P	1000 2nd St./ ?	P-203-116
1954	S	222 J St./ ?	112B-996g
25 cent			
1860	S	909 Front/ 1856-1880	P-161-2364c
1840	O	1022 3rd St./ ?	117-2942
1854	P	1022 3rd St./ ?	117-3305
1861	S	1020 4th St./ ca. 1885	P-166-931
1853	P	113 J St./ 1852-1860	P-209-3-103
1846	P	226 J St./ 1852	114-859
1857	P	226 J St./ 1900-1925	114-1332
1891	S	226 J St./ 1852?	114-4332?
1898	S	909 Front/ 1890-1950	P-211-1-21
1915	S	1000 2nd St./ ?	P-203-418
1918	S	230 J St./ 1925-1966	115A-2581
1916-1930	?	230 J St./ 1925-1966	115A-2684
1940	P	230 J St./ 1925-1966	115A-2681
50 cent			
1833	P	925 Front/ ?	372-002-2033
1807-1836	?	1022 3rd St./ ?	117-3849
1833	P	228 J St./ 1900-1925	115B-4119
1874	P	901 Front/ ?	022-46-3135
1863	?	909 Front/ 1856-1880	P-161-2364b
1864	S	909 Front/ 1856-1880	P-161-2364a
1867	S	915 Front/ 1880-1900	022-46-537
1854	O	1022 3rd St./ ?	117-4156
1862	S	1022 3rd St./ ?	117-4157
1876	CC	226 J St./ 1852?	114-4330?
1838-1891	?	226 J St./ 1852	114-1060
1860	S	1020 4th St./ 1885	P-166-959
1868	S	325 K St./ 1885	P-166-5164
1896?	S	226 J St./ 1925-1966	114-1061
1923	S	226 J St./ 1900-1966	114-1395
1949	?	903 Front?	P-161-1520
$2.50 gold			
1836	P	925 Front/ ?	372-002-2034
1851	P	901 Front/ ?	022-46-3133
1857	S	915 Front/ 1856-1870	P-208-16-443
1855	P	1022 3rd St./ ?	117-4155
1843	P(?)	226 J St./ 1852	114-1210
$5 gold			
1856	S	915 Front/ 1856-1870	P-208-16-444
1844	P(?)	226 J St./ 1852	114-2775
1847	P	230 J St./ ?	115A-3984
1856	P	325 K St./ 1885	P-166-6671

1. When the full date is illegible, the probable date range is given. Specific types of each denomination are grouped together.

2. Mint abbreviations are: CC = Carson City, D = Denver, O = New Orleans, P = Philadelphia, S = San Francisco.

3. "Archeological dates" refer to the date of deposition assigned to the stratum in which the specimen was found (Cf. Schulz, Hastings, and Felton, this volume).

TABLE 2

Shift in Use of Major U.S. Coin Denominations over Time

	Denominations						
Date Range	1 cent	5 cent	10 cent	25 cent	50 cent	$2.50 gold	$5 gold
(First San Francisco Issue)	(1908)	(1863[b] 1912)	(1856)	(1855)	(1855)	(1854)	(1854)
Pre-1850	4[a]	3[b]	10	2	3	2	2
1850-59	0	3[c]	5	3	1	3	2
1860-69	0	2	4	1	7	0	0
1870-79	0	0	4	0	2	0	0
1880-89	2	2	2	0	0	0	0
1890-99	1	2	1	2	1	0	0
1900-09	2	6	3	0	0	0	0
1910-19	4	4	3	2	0	0	0
1920-29	5	0	2	0	1	0	0
1930-72	7	2	4	1	1	0	0
Totals	25	25	38	11	16	5	4

[a]Four large cents.

[b]Half-dimes with legible dates; 1912 production of nickel five-cent pieces begins.

[c]Half-dimes with illegible dates but pre-1860.

Note: With the exception of the three half-dimes mentioned in Note C above, only the coins with legible dates are included in the above table.

TABLE 3

Foreign Coins from Old Sacramento Excavations[1]

Country, Denomination	U.S. Value	Date	Site Address/ Archeological Date[2]	Catalogue No.
Argentina				
1 real	12½ cents	1840	915 Front/ 1860-1880	P-208-8-397
Belgium				
1 franc	25 cents	1844	115 J St./ 1852-1864	P-210-17-304
Brazil				
40 reis	?	1836	113 J St./ ?	022-45-3116
40 reis	?	1836	115 J St./ 1852-1864	P-210-15-71
40 reis	?	1836	115 J St./ 1852-1864	P-210-15-767
Chile (under Spain)				
2 reales	25 cents	1793	226 J St./ 1852	114-3024
(British) East India Co.				
½ rupee	25 cents	1840	113 J St./ 1852-1864	P-209-45-165
1 rupee	50 cents	1840	115 J St./ ?	P-210-5-292
1 rupee	50 cents	1840	226 J St./ 1850-1852	114-3893
¼ anna	?	1835	325 K St./ 1866	P-166-7171
France				
5 francs	1 dollar	1811	917 Front/ 1861-1878	P-207-8-37
½ franc	10 cents	1835	1022 3rd St./ ?	117-3669
5 francs	1 dollar	1835	115 J St./ 1850-1852	P-210-9-228
5 francs	1 dollar	(1830-1848)	222 J St./ ?	112B-3984
Great Britain				
½ penny		(1838-1860)	915 Front/ 1860-1880	P-161-3210
1 penny		1862	915 Front/ 1880-1900	P-161-6150
Hong Kong				
1 cent	?	1865	909 Front/ 1890-1950	P-161-1561
Italy				
2 centesimi	?	1897	226 J St./ 1900-1925	114-3051
Mexico				
1 real	12½ cents	1807	909 Front/ 1856-1880	P-161-2065b
½ real	6¼ cents	1824	909 Front/ 1856-1880	P-161-2065a
1 real	12½ cents	1768	1022 3rd St./ ?	117-4162
1 real	12½ cents	1782	113 J St./ 1852-1864	P-209-1-47
2 reales	25 cents	1801	113 J St./ pre-1850	P-209-38-7
Peru				
1 real	12½ cents	1828	226 J St./ 1852	114-1211
Spain				
2 reales	25 cents	ca. 1785	113 J St./ 1852-1864	P-209-32-11
2 reales	25 cents	1777	226 J St./ 1852	114-3023
Spanish America				
1 real	12½ cents	1792	925 Front/ ?	372-002-1663

[1] Cf.: Craig 1976; Utberg 1963; Yeoman 1967.

[2] "Archeological dates" refer to the date of deposition assigned to the stratum in which the specimen was found (Cf. Schulz, Hastings, and Felton, this volume).

TABLE 4

Chinese Coins from Old Sacramento Excavations[1]

Reign Period (Date Range)	Mint	Site Address/ Archeological Date[2]	Catalogue No.
Shun Chih (1643-1661)	?	909 Front/ 1880-1950	P-211-12-55
K'ang Hsi (1661-1722)	?	909 Front/ 1880-1900	P-211-27-89
" "	?	909 Front/ 1880-1900	P-211-28-57
Ch'ien Lung (1735-1795)	Board of Revenue	909 Front/ 1880-1900	P-161-1490
Chia Ching (1796-1820)	Kwangtung	909 Front/ 1856-1880	P-161-2189
Ch'ien Lung	Chih-li	917 Front/ 1878	022-46-3124
Illegible	?	917 Front/ 1861-1878	P-207-15-108
"	?	925 Front/ ?	372-002-1724
Ch'ien Lung	?	1022 3rd St./ 1925-1965	117-4158
"	Board of Works	113 J St./ 1852-1864	P-209-17-61
"	?	113 J St./ 1852-1864	P-209-3-104
Chia Ching	?	113 J St./ 1852	P-209-12-74
Ch'ien Lung	?	115 J St./ 1852-1864	P-210-10-369
K'ang Hsi	Nan-chang	222 J St./ 1900-1925	112A-1371
Not available for analysis	?	222 J St./ ?	112-809
" " " "	?	222 J St./ ?	112-110
" " " "	?	222 J St./ ?	112-228
" " " "	?	222 J St./ ?	112-321
Ch'ien Lung	Board of Revenue	226 J St./ 1852	114-1925
Tao Kuang (1820-1850)	?	226 J St./ 1852	114-2053
Not available for analysis	?	228 J St./ 1900-1925	?
K'ang Hsi	Chekiang	325 K St./ 1866	P-166-5926
"	Chekiang	325 K St./ 1885	P-166-6171
Ch'ien Lung	Board of Works	325 K St./ ?	P-166-5787

[1] Cf.: Craig 1976: Cresswell 1971; Kareofelas 1972; Kleeb 1976.

[2] "Archeological dates" refer to the date of deposition assigned to the stratum in which the specimen was found (Cf. Schulz, Hastings, and Felton, this volume).

TABLE 5

Trade Tokens from Old Sacramento Excavations

Business	Value	Date Range	Site Address/ Archeological Date[1]	Catalogue No.
Storkman's, Woodland	5 cents	1919-1933	1000 2nd St./ ?	P-203-425
Duhain & Radonich	5 cents	1913-1914	1022 3rd St./ ?	117-3209
Bauer's, 710 J St.	5 cents	1908-1909	1022 4th St./ ?	P-166-5788
Cigar Store, JWR	5 cents	1908	226 J St./ 1900-1925	114-2778
Tacoma School Dist.	school fare	?	226 J St./ 1852 (?)	114-277
Wingard's	5 cents	1888-1921	226 J St./ 1900-1925	114-3845
Old Universal Saloon	5 cents	1910-1911	226 J St./ 1925-1966	114-1169
" " "	5 cents	1910-1911	226 J St./ 1900-1925	114-3844
" " "	5 cents	1910-1911	226 J St./ 1900-1925	114-1132
" " "	5 cents	1910-1911	226 J St./ ?	114-2128
" " "	5 cents	1910-1911	228 J St./ 1900-1925	115B-5038
" " "	5 cents	1910-1911	228 J St./ 1900-1925	115B-10501
" " "	5 cents	1910-1911	228 J St./ 1900-1925	115B-10503
" " "	5 cents	1910-1911	228 J St./ 1900-1925	115B-10548
Bouie's (Boede's) Cafe	5 cents	1907	230 J St./ 1900-1925	115A-3222
Golden Gate Saloon	5 cents	1910-1919	230 J St./ ?	115A-5084
Ensign Saloon, San Francisco	5 cents	1907-1918	230 J St./ ?	115A-?
Wm Albaugh, Douglas, Wyoming	6¼ cents	1884-1900	230 J St./ ?	115A-1313
31556 (?)	?	?	230 J St./ ?	115A-2583

[1] "Archeological dates" refer to the date of deposition assigned to the stratum in which the specimen was found (Cf. Schulz, Hastings, and Felton, this volume).

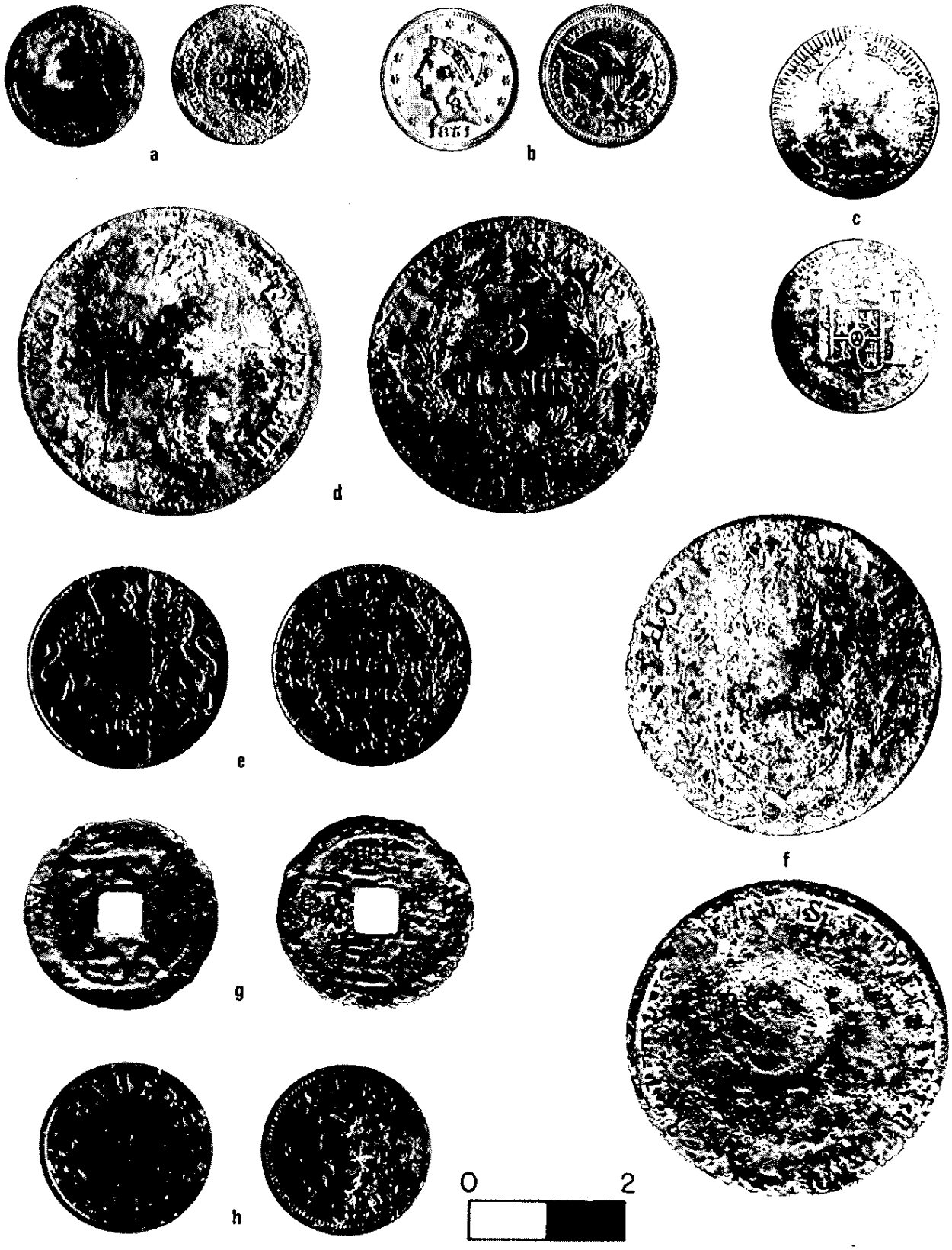

Figure 1. Coins from Sacramento: a) 1850 U.S. dime (P207-1-96); b) 1851 U.S. $2½ gold piece (022-46-3135); c) 1782 real from Spanish Mexico, depicting Charles III (P209-1-47); d) 1811 French 5-franc piece, depicting Napoleon I (P207-8-37); e) 1835 East India Company ¼ anna (P166-7171); f) 1836 Brazilian 40 reis piece, issued by Peter I (P210-15-71); g) Chinese cash from the Ch'ien Lung period (P166-5787); h) Bauer's Saloon token (P166-5188). Scale indicates 1 cm.

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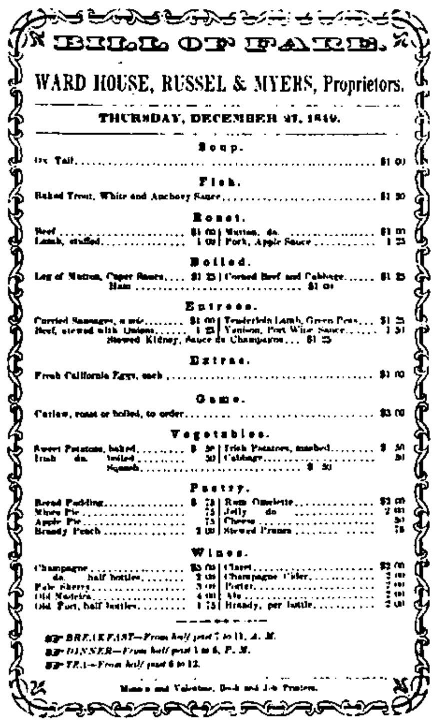
a



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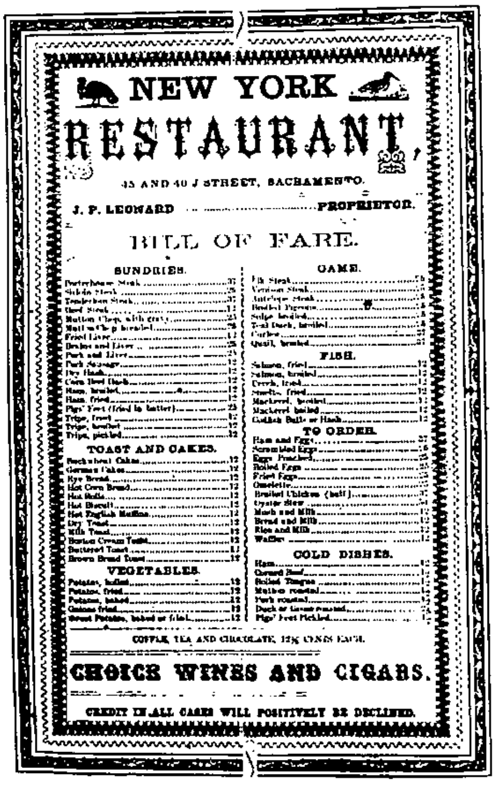

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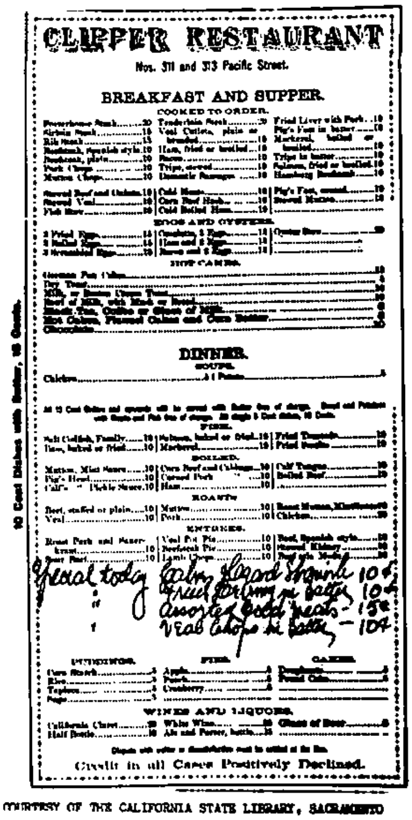

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d

Figure 2. a) A popular view of demonetization of foreign currency (*Harpers Weekly*, Feb. 21, 1857:128); b) San Francisco menu of 1849 showing inflated prices; c) Sacramento menu of 1859 illustrating use of the "bit" system (Cutter, 1859:38); d) San Francisco menu of the 1870s showing decimal pricing (Marine Digest April 23, 1966:40). (All illustrations courtesy of the California State Library, Sacramento.)

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PONTIL SCARS AND SNAP CASES AS DATING TOOLS FOR NINETEENTH-CENTURY GLASS: NEW LIGHT FROM OLD SACRAMENTO

Jane Russell Armstrong
Peter D. Schulz

Technological changes in glass bottle production have long served as important chronological indicators in historical archeology – particularly in the study of nineteenth-century deposits. One of the most significant of these developments was the snap case which replaced the pontil (or punty) for holding a bottle while the finish was applied, a procedure frequently accepted as coming into use about 1857. The origin of this ascription is unclear, but it is certainly well established in the literature concerned with the history of glass technology. Knittle (1927:39-40), McKearin and McKearin (1941:20), and Scoville (1948:17), for instance, all assign the invention of the snap case to sometime between 1850 and 1860. Knittle (1929:411) later placed it definitely in 1857. Wills (1974:51) concurs, and Meigh (1972:29-30) notes that "in 1857 a tool called a 'snap' was first used to hold the body of the bottle while the neck was reheated and the 'finish' formed; this tool displaced the punty and eliminated the unsightly punty mark...."

Not surprisingly, historical archeologists have generally accepted premachine bottles lacking pontil scars as snap-case products, and the introduction of the snap case as occurring in the 1850s, or specifically in 1857. Switzer (1974:6), for example, states that "by 1857 the bottle making industry saw the invention of what may have been its most important tool, the snap case." The same date is accepted by Lorrain (1968) while Newman (1970) prefers 1855, and Jones (1971:72) reports that both the snap case and the sabot (a similar but simpler tool) were "introduced sometime between the late 1840s and the 1850s."

On the basis of new information from Old Sacramento, we believe that these accounts oversimplify and misinterpret the historical use of the pontil and the snap case.

THE COTHRIN COLLECTION

Recent excavations at the Cothrin & Potter general merchandise store (113 J Street) in Old Sacramento included exposure of an ash and charcoal stratum dating from the great fire of November 2-3, 1852 (Butler n.d.). This level yielded an assemblage of at least 395 glass bottles, which were present in the store at the time of its destruction. The total includes 136 black glass ale or liquor bottles, 137 wine bottles, 41 "cathedral" or "gothic" pickle bottles, and 30 medicinal bottles, as well as a variety of other containers.

More than 200 of these vessels possess attributes which, on the basis of current interpretations of the development of glass technology, would be expected in specimens produced in the early 1850s. The most significant attribute is the presence of the pontil mark: all of these bottles were scarred with a crude glass-tipped pontil or a bare-iron ("improved") pontil mark (Fig. 1a, 1b). Of the 273 wine and black glass bottles, however, only 4 of the black glass containers are pontil marked. Not one of the wine bottles exhibited such a mark (Fig. 1c, 1d).

It is worth noting that black glass and wine bottles were intended to be durable but cheap containers. Since the bottle was roughly made in most cases, the pontil would have been a crude one, and would not, in all likelihood, have been ground off or refined. In fact, the pontil mark, in the few cases in which it is present, is very rough, with a circular pattern of sharp bits of embedded glass. It is also comparatively large – averaging 45-50 mm in diameter.

The effects of the fire cannot explain the absence of such marks. Even in those bottles demonstrably affected by heat, the crude pontils

are still obvious. Among the black glass specimens the glass itself went through a transformation, becoming more opaque and blue in color and highly fragile, but this did not affect the clarity of the base.

DISCUSSION

According to dating procedures now commonly in use for nineteenth-century glass, the absence of pontil marks on large numbers of the Cothrin bottles should indicate a post-1857 manufacturing date for the collection. In actuality, the bottles had to have been made in the early 1850s or even the late 1840s.

One problem with using the invention of the snap case as a dating device is that none of the accounts that we have seen provides any documentation for the date of this event. It is noteworthy that an American industrial dictionary of the period continues to describe the punty or pontil and no additional method other than the Ricketts mold. The same source specifically notes that "the place where the punty was attached is perceptible in every bottle blown in this manner by the sharp edges where the fracture occurred" (Appleton 1857:868). Whether this volume is in some way the source of the "1857" date for the introduction of the snap case, we do not know. Such dictionaries are in any case questionable records of the state of industrial technology, since they tend to reprint data and even text from much-earlier editions.

A further difficulty is that the pontil – snap case transition is an oversimplification. Other and similar methods were in use at the time. The best known of these was the distinctive "Ricketts" mold, mentioned above, which had widespread usage in both Europe and the United States and was considered an improvement in the manufacturing of glass bottles – primarily for wine, porter, and beer. This mold employed a fixed bottom piece with a movable piston for forming the concavity, a body which formed the belly of the bottle, and two movable pieces for the neck. The rim of the neck was all that remained to be perfected (Appleton 1857:868). Only two of the burn-level bottles, however, are of this type.

Another device was the "post" or "sabot," a pole-mounted frame or sleeve to hold the bottle while the finish was applied. It differed from the snap case only in being rigid rather than having a sliding clamp. Toulouse (1968:204) has shown that this device (which in its effects on the bottle was ordinarily indistinguishable from the snap case) was in use in France by the early 1840s, and in England reportedly in the 1830s. Ducasse (1970), in a study of old dated wine bottles at Château Lafite, found that vessels lacking any pontil mark, and so assignable to sabot production, occurred as early as 1810.

Clearly, then, instruments that were, in their effects on the bottle, inseparable from the snap case, were in use relatively early in the last century – at least in Europe. The geographical qualifier here may be important, since it is almost certain that the bulk of the wine bottles at mid-century were produced in France, and it is quite possible that most of the Cothrin black glass bottles were also of foreign – especially English manufacture. Prior to 1880, European manufacturers were in the vanguard of glass technology, and as late as 1915 a greater amount of glass was imported to America than exported (Scoville 1948:81). The uniformity of pontil use on some categories of bottles and its absence in others, then, may indicate a dichotomy between American and foreign wares. It might alternately reflect a preference for different tools for different shapes of bottles or kinds of glass.

Even if we accept 1857 as marking the introduction of the snap case as a bottlemaking tool – and we have seen no evidence to support this date – it is clear that other similar devices had been introduced long before. The Cothrin collection, far from representing an enigma, simply documents the complexity of glass technology in the middle of the last century.

ACKNOWLEDGMENTS

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Figure 1. Bottle bases from the 1852 fire level at the Cothrin site: a) Cathedral bottle showing pontil scar; b) Cathedral bottle showing bare-iron ("improved") pontil mark; c, d) Black glass ale or liquor bottles showing absence of pontil marks.

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EUROPEAN "TRADE" BEADS FROM OLD SACRAMENTO

Lee Motz
Peter D. Schulz

INTRODUCTION

Since their introduction to the New World in 1492, glass beads have been carried by countless explorers, trappers, and traders. Initially a token of friendship, they became a major item of barter and exchange between Europeans and the Indians. Although they were traded by many nationalities, most of the beads were manufactured in the glass factories of Murano, a small island off the coast of Venice.

In California the first attempt to distribute them was probably made by Juan Rodriguez Cabrillo in 1542, but extensive use of glass beads did not occur until the late eighteenth century. In the Sacramento Valley they were utilized by Spanish exploring parties and missionaries, by American and Hudson's Bay Company trappers, and by rancher-colonists like John Sutter. It is with these pre-gold rush sources of distribution that the beads are popularly associated, but they were important articles of commerce until considerably later.

Prominent in the retail and wholesale trade at Sacramento during the gold rush was the firm of Hoope and L'Amoureux, who offered "a full assortment of chalk white, milk white and red beads" at their store at Sixth and J (*Sacramento Union*, Oct. 3, 1851:1). On at least one occasion the retail aspect of this trade inspired a demonstration of ethnic snobbery in the local press, but the report provides a rare record of "trade" bead exchange in an urban context:

> NATIVE CUSTOMERS – On passing up J Street yesterday afternoon, our attention was attracted towards a crowd of digger Indians within the store of Hoope & L'Amoreaux. They were intently engaged in purchasing from the obliging proprietors of the establishment, hundreds of "pesos" worth of beads. On inquiry of the chief purse holder, we found that these aboriginies were from the banks of the Cosumnes, where they had by hard labor and perserverance accumulated quite a snug little sum, but their proverbial love of finery, induced them to part with their last dime. Their squaws and papooses looked as if they had been dug up with the last lump of gold, and had been brought into market without being subjected to any hydropathic treatment since their parturition from "mother earth" (*Sacramento Union*, June 24, 1851:2).

The volume of this commerce is indicated by a contemporary advertisement by E. Fitzgerald and Company of San Francisco, who had on hand "an unusual full stock of every variety required for the trade," including 10,000 lb of red and blue styles and 20,000 lb of "Mammoth size white" beads (*Sacramento Union*, Jan. 12, 1853:1).

Venetian glass beads were obviously imported mainly for use in intercultural exchange, and it is in this context that archeological investigation has been almost exclusively concentrated. Karklins and Sprague (1972), for example, list 169 references to glass beads, their manufacture, and their distribution in North America: all but 30 of these studies are concerned specifically with the Indian trade. The recovery of "trade" beads from late nineteenth-century deposits in Sacramento is therefore of considerable interest, and they are reviewed here.

MATERIALS AND METHODS

A total of 117 glass beads has been recovered during excavations over the last several years in Old Sacramento. All of these are from deposits dating between 1849 and the turn of the century, and many are from much more closely dated features (cf. Table 1).

Typological assessment of these specimens is based primarily on method of manufacture, shape (Fig. 1), structural category, color, diaphaneity, and number of facets.

All specimens were examined wet with the aid of a binocular dissecting microscope (7x - 30x) incorporating a high intensity (6,460 lumens/m^2) illuminator. A bead is considered translucent if any part of the glass is capable of transmitting light when back-lighted by a frosted 100-watt incandescent lamp. Measurements are given in millimeters, and diameter of the bore is noted only when it is considered to be a diagnostic characteristic.

Recognizing the need for an absolute color designation standard, many recent investigators have employed the Munsell color chart. These charts, however, are expensive and difficult to obtain, and they grade color shades so finely that we have grave doubts about either the typological significance or the replicability of specific Munsell designations. Because of its ready availability and ease of employment, the Letraset Pantone Letracolor Color Paper Picker is here used as the color reference standard.

The collection is curated at the Archeological Laboratory of the California Department of Parks and Recreation, Sacramento.

OLD SACRAMENTO BEADS

The collection contains 58 types representing four manufacturing methods - drawn, wound, molded, and blown. In addition, the beads are categorized as *simple* - manufactured from one undifferentiated monochrome mass of glass, and *compound* – manufacturered from two or more layers, or laminae, of glass.

Drawn or Hollow-Cane Method

As a first step in the manufacture of drawn beads, the glassblower inserted a pipe into a furnace containing molten glass, removed a glob of the plastic material, and blew into the pipe until an air bubble was formed. After a second worker had inserted a rod into the mass, the pipe and rod were pulled in opposite directions, forming a hollow tube 50 m or more in length and 1-12 mm in diameter, exact dimensions being dependent on the speed of the pulling (drawing) process. After cooling, the tube was broken into 90-cm lengths. Fifteen to twenty tubes were then placed in an iron gauge to be end-cut, with segment lengths determined by adjustment of the gauge. The resulting simple hollow-cane beads had sharp, jagged edges; these beads were in some cases distributed without further processing. The majority of them, however, were finished. The segments were smoothed and rounded in a hot rotating barrel containing a mixture of sand and ashes, then polished in large bags shaken from side to side. Finished beads were sorted into sizes in sifting screens and sent to warehouses to be packaged for exportation (J.P.B. 1856; Angus-Butterworth 1958:364-365; Sleen 1973:22-26).

To make compound drawn beads, which have two or more concentric layers, the original mass was immersed in molten glass that was either clear or of a second color. This process could be repeated to produce beads of up to twelve layers of different colors (Kidd and Kidd 1970:48-50). Compound beads could also be made by rolling the glob of glass over a marble plate, or marver, which was coated with glass of a different color (Sleen 1973:25). During the drawing process, both simple and compound hollow canes could be twisted about the longitudinal axis to produce a spiral or helical form (Kidd and Kidd 1970:49).

Glass beads made by any of the four methods (drawn, wound, molded, blown) could, while still plastic, be shaped into a variety of configurations in one or two-part molds or by pressing with wooden or metal objects (Sleen 1973:23-26). Also, while still pliable, the bead's surface could be altered by rolling it over a corrugated or fluted marble plate or board (marver). The marver was also used with the aid of a spatula to shape beads into various forms (Kidd and Kidd 1970:49).

Faceted beads were produced in various ways. Although Sleen (1973:40) states that they were always molded or pressed in one or two-part molds, Kidd and Kidd (1970: 50-53) indicate that they were either formed in two-part molds or were faceted by grinding. Some beads were cut and polished by hand; others were made by holding small segments of glass tubing against a rotating abrasive wheel (Woodward 1967:9).

Faceted drawn beads are known as "Russian" trade beads and generally are various shades of transparent blue, occasionally clear and opaque white. They often have a concentric translucent white or blue-white core. Transparent shades of

green, red, or lavender occur, but are rare (Sorenson and Le Roy 1968:45). These beads are also referred to as short "bugles," and were popular during the period from 1830-1870. They have been found in archeological sites ". . . from Alaska and Western Canada, through the upper plains country and the full length of the San Joaquin Valley in California, and the adjacent foothills" (Woodward 1967:10).

Forty percent of the beads from the Old Sacramento Collection were manufactured by the drawn method; 44 specimens representing 22 types.

Type 1

Colorless, translucent, quadrangular, thin-walled, twisted hollow-cane, simple, tumbled. This specimen has been twisted around the longitudinal axis during the drawing process. One example, length 17.7 mm; diameter 3.2 mm.

According to Woodward (1967:10-12), these beads are commonly known as "bugles" and during the seventeenth century were produced in lengths ranging from 0.5-3 in (12.8 – 76.4 mm). Examples of this type from late eighteenth and early nineteenth-century sites are much shorter and clearer in color. They seldom appear in late nineteenth-century sites, but the Sacramento specimen is from one of the latest well-dated contexts (Table 1).

Type 2

Colorless, translucent, barrel-shaped, hexagonal hollow-cane, multifaceted, simple, tumbled. There are six facets cut around each end, leaving six equatorial facets (Fig. 2a). Longitudinal surface and subsurface striations are evident. Two specimens, length 5.8 – 6.4 mm, diameter 7.6 – 7.9 mm.

Dietz (1976:130, Type 4) reports this type from a Marin County, California site (CA-Mrn-402) which probably dates to around 1833-1884. Gibson (1976:123, Type F5b) indicates that similar beads were recovered from CA-Ven-87 and post-date 1850. This type occurs in datable contexts in Old Sacramento ca. 1885 (Table 1).

Type 3

Colorless, translucent, barrel-shaped, heptagonal hollow-cane, mutlifaceted, simple, tumbled. Seven facets have been cut around each end, leaving seven equatorial facets. Longitudinal and latitudinal surface and subsurface striations are evident. Three specimens, length 7.8 – 8.1 mm, diameter 8.0 – 9.3 mm.

These specimens occur in well-dated contexts in Old Sacramento in 1852 and ca. 1885 (Table 1).

Type 4

White, frosty, translucent, barrel-shaped, hexagonal hollow-cane, multifaceted, compound, tumbled. The surface is clear with six facets cut around each end, leaving six equatorial facets. The core is a layer of white glass. Surface and subsurface longitudinal striations are evident. One example, length 7.0 mm, diameter 6.4 mm.

This bead is similar to Sorensen and Le Roy's (1968:46) Type II-2 which they assign to "around 1840." This type also appears at CA-Ven-87 after 1850 (Gibson 1976:123, Type F5). It occurs in Sacramento around 1885 (Table 1).

Type 5

White, frosty, translucent, barrel-shaped, hexagonal hollow-cane, multifaceted, compound, tumbled. The surface is clear with six facets cut around each end, leaving six equatorial facets (Fig. 2b). The core consists of two or three concentric layers of alternating white and clear colored glass; surface and subsurface longitudinal striations are evident. The perforation is asymmetrical. Eight examples, length 5.1 – 6.8 mm, diameter 5.8 – 7.7 mm.

This type occurs in Sacramento contexts dating ca. 1860s – 1885 (Table 1).

Type 6

White, frosty, translucent, barrel-shaped, heptagonal hollow-cane, multifaceted, compound, tumbled. The surface is clear with seven facets cut around each end, leaving seven equatorial facets.

patinated. Two examples, length 0.7 to 0.9 mm, diameter 1.5 – 1.6 mm.

According to Orchard (1975:95), this was known as a seed bead and was the type most commonly used as a token of friendship and for trade. The Sacramento beads are from a turn-of-the-century context (Table 1).

Type 21

Black, opaque, hexagonal hollow-cane, multi-faceted, simple, tumbled. Three crudely pressed asymmetrical facets around each end, leaving six equatorial facets. The equatorial facets are longitudinally striated. Irregularly shaped ends. One example, length 2.4 mm, diameter 2.3 mm.

It occurs in Old Sacramento in a ca. 1900 context (Table 1).

Type 22

Black, opaque, multi-fluted, round, glossy, thin-walled, hollow-cane, simple, tumbled. The surface displays 28 lands and grooves and has a glossy, irregularly shaped end (Fig. 2e). One specimen, length 17.6 mm, diameter 3.5 mm.

This bead is from a ca. 1900 context (Table 1).

Wound Method

The initial step in the manufacture of wound beads was the same as that for drawn beads except that a cavity was not formed in the molten mass. The glob of glass was drawn and allowed to cool, resulting in a solid rod. One end of this bar was then reheated to a plastic state by a glass blowing lamp or blowtorch, and wrapped or wound around a rotating iron rod to form the desired bead size and length (Sleen 1973:23). Frequently a small projection of glass exists on the bead end around the perforation as a result of being broken from the parent cane (Beck 1973:60). The diameter and shape of the iron rod determined the perforation size and whether the opening was straight (wire-wound) or tapered (mandrel-wound).

The Old Sacramento collection includes 38 wound beads, representing 21 types. Of these, 6 beads, representing 4 types, are mandrel-wound.

Type 23

Colorless, translucent, donut-shaped, simple, tumbled. On microscopic examination, the surface of this specimen displays evidence of winding, a latitudinally elongated air hole on each end, and lenticular shaped marks. One example, length 3.4 mm, diameter 5.9 mm.

This bead is from a ca. 1900 context (Table 1).

Type 24

Colorless, translucent, donut-shaped, glossy, simple, tumbled. The walls of the perforation display a definite helical winding pattern. One complete specimen and an additional fragment. Length 2.1 mm, diameter 3.2 mm.

This type is present in Sacramento in contexts dating from the 1860s or 1870s and the turn of the century (Table 1).

Type 25

White, opaque, oblate spheroid, glossy, simple, tumbled. The surface displays evidence of winding. One example, length 7.8 mm, diameter 7.3 mm.

Type 26

White, opaque, oblate spheroid, simple, tumbled. The surface of this specimen displays a definite winding pattern and is badly eroded, pitted, and patinated. One example, length 4.8 mm, diameter 4.9 mm.

This type is found in Old Sacramento around 1852 (Table 1).

Type 27

White opaque exterior, amber translucent core, oblate spheroid, compound, tumbled. This specimen has a thin layer of white glass over a translucent amber core. Except where erosion displays the core, it appears to be a white monochrome. Winding pattern is evident on eroded core. Two fragmented examples, length 7.0 mm, diameter 9.6 mm.

Type 28

Red (Pantone 185), translucent, truncated bicone, glossy, multifaceted, simple, tumbled. This specimen has seven or eight facets cut around each end, leaving a sharp equatorial ridge. Walls of perforation display a definite winding pattern (Fig. 3d). One example, length 7.2 mm, diameter 6.3 mm.

Type 29

Red (Pantone 194) translucent exterior, milk white opaque core, oblate spheroid, compound, tumbled. Winding evident on surface, ends, and walls of perforation. Surface is eroded, pitted, and patinated. Subsurface globular and latitudinally elongated bubbles are present (Fig. 2f). One example, length 12.3 mm, diameter 14.3 mm.

Type 30

Red (Pantone 180) translucent exterior, yellow (Pantone 134) opaque core, cylindrical, compound, tumbled. Winding evident on surface, ends, and walls of perforation. Surface is eroded, pitted, and patinated (Fig. 4a). The core is asymmetrical. One example, length 16.6 mm, diameter 10.0 mm.

Sorensen and Le Roy (1968:44, Type I-40) state that this is a rare type outside of Central California and that it dates to the mid-1800s or earlier.

Type 31

Greenish-yellow (Pantone 457), translucent, oblate spheroid, simple, tumbled. The surfaces of these specimens display a definite winding pattern and are patinated (Fig. 4b). Subsurface globular and latitudinally elongated bubbles are evident. Three examples, length 6.0 – 6.8 mm, diameter 8.3 – 9.1 mm.

Type 32

Dark green (Pantone 350), translucent, donut-shaped, simple, tumbled. This specimen displays a definite winding pattern and has a small projection of glass on one end. Subsurface globular bubbles are evident. One example, length 3.2 mm, diameter 6.8 mm.

This bead occurred in Old Sacramento around 1900 (Table 1).

Type 33

Sky blue (Pantone 277), opaque, oblate spheroid, simple, tumbled. Specimen displays a definite winding pattern and has a small projection of glass on one end. Some examples of this type have a white patina. One complete and two fragmentary examples, length 6.0 – 7.9 mm, diameter 6.2 – 8.8 mm.

Type 34

Turquoise blue (Pantone 306), opaque, oblate spheroid, simple, tumbled. The surface of this specimen displays a definite winding pattern and has a small projection of glass on one end. Six examples, length 5.2 – 7.2 mm, diameter 7.5 – 10.0 mm.

All of the specimens derive from a late 1870s deposit (Table 1).

Type 35

Black, opaque, oblate ovoid, glossy, simple, tumbled. Winding pattern evident on ends and wall of perforation (Fig. 3e). One example, length 19.0 mm, diameter 7.7 mm.

This bead is from an 1860s-1870s deposit (Table 1).

Type 36

Black opaque, oblate spheroid, simple, appears burgundy when examined microscopically. There is a small projection of glass on one end. Two examples, length 5.7 – 6.6 mm, diameter 7.3 – 7.7 mm.

This type occurs in Old Sacramento around 1900 (Table 1).

Type 37

Black, opaque, oblate spheroid, simple, tumbled. Winding pattern evident on surface and walls of perforation. There is a small projection of glass on one end. The surface is eroded and patinated. Four examples, length 7.2 – 9.8 mm, diameter 9.1 – 11.4 mm.

This type occurs around 1900 in Old Sacramento (Table 1).

Type 38

Amber (Pantone 138), translucent, annular-shaped, simple. This specimen has a large perforation in relation to the diameter of the bead. Winding is evident on the surface. There is a small projection of glass on one end (Fig. 3f). One example, length 3.9 mm, diameter 10.5 mm, bore 5.5 mm.

This example occurs about 1900 in Old Sacramento (Table 1). According to C. W. Meighan (Department of Anthropology, UCLA, personal communication) this type appears in California in the American period.

Type 39

Butterscotch (Pantone 131), opaque, truncated bicone, simple, tumbled. This specimen contains numerous impurities and microscopic evidence of winding (Fig. 3i). One fragment, length indeterminate, diameter 7.1 mm.

Type 40

Colorless, translucent, multifaceted, oblate spheroid, simple. This specimen has 16 facets on the body and one on each end. Winding evident on walls of tapered perforation (Fig. 3g). One example, length 9.7 mm, diameter 11.1 mm.

Type 41

Black, opaque, multifaceted, cube, glossy, simple. These specimens have four facets cut on each side and one on each end. All edges have been chamfered. Winding evident on walls of perforation. Large end of perforation orange-peeled; tapered end has a small concavity around the hole (Fig. 3h). Three examples, length 9.5 – 10.0 mm, diameter 10.2 – 10.8 mm.

This type is present in Old Sacramento ca. 1900 (Table 1).

Type 42

Black, opaque, multifaceted, oblate spheroid, simple. The surface of this specimen has 95 cut facets, with another one on each end. Large end of tapered perforation orange-peeled. Evidence of winding on walls of perforation. One example, length 16.9 mm, diameter 18.5 mm.

This type occurs in California sites dating to the 1870s-1880s (C. W. Meighan, Department of Anthropology, UCLA, personal communication).

Type 43

Black, opaque, multifaceted, truncated cone, simple. This specimen contains eight short (2.7 mm) and eight long (6.7 mm) facets oriented longitudinally (Fig 4c). Faceting has produced a sharp ridge 6.7 mm from the pointed end of the cone. Winding pattern evident on walls of off-center tapered perforation. The base is orange-peeled. One example, length 9.4 mm, apex diameter 4.3 mm, ridge 9.3 mm, base 5.2 mm.

This bead occurs in Old Sacramento around 1900 (Table 1).

Molded or Pressed-Glass Method

These beads were manufactured by various techniques. According to Beck (1973:62), they were produced by pressing a quantity of plastic glass into a one-piece mold. Kidd and Kidd (1970:50) suggest that this type was made in two-part molds. Such beads can be identified by an equatorial or latitudinal mark produced when the two halves of the mold were closed. However, the cutting or pressing of facets often removes evidence of these marks.

The Old Sacramento collection includes 27 molded beads representing 10 types.

Type 44

Colorless, translucent, multifaceted, oblate spheroid, simple. Eight crudely made equatorial facets have removed portions of the mold mark. The walls of the tapered perforation are longitudinally striated. The large end of the perforation is asymmetrical, the small end concave. One example, length 6.8 mm, diameter 8.2 mm.

Type 45

Pearlescent, opaque, oblate spheroid, simple. The surface has a slight equatorial mold mark. One

end is orange-peeled, the other end slightly concave (Fig. 4d). Twelve examples, length 5.6 – 6.8 mm, diameter 6.9 – 8.0 mm.

This type occurs in Sacramento contexts dating from the 1860s, and perhaps from the 1870s (Table 1).

Type 46

White, opaque, multifaceted, truncated convex cone, simple. Ten longitudinal facets on body, one on small end. The perimeter of the base is chamfered. Walls of tapered perforation are longitudinally striated (Fig. 3j). One example, length 5.3 mm, diameter 10.8 mm.

This type is found in Old Sacramento deposits dating to 1852 (Table 1).

Type 47

White, opaque, truncated bicone, compound. This specimen has a wide (3.7 mm) smooth equatorial surface. The tapered hemispherical regions display a definite threaded pattern. Similar beads from other California sites display a thin coating of translucent red glass on the equator and a black-on-white layer of glass on the hemispheres. One example, length 13.8 mm, diameter 9.2 mm.

Type 48

Black (appears burgundy when microscopically examined), opaque, multifaceted, plano-convex, simple. This specimen has 18 molded facets on the convex surface and 4 crudely pressed facets on the latitudinal mold mark. Winding evident on both ends. A small projection of glass is present on one end. Plane surface is striated longitudinally with irregularly shaped marks. One example, length 8.1 mm, diameter 4.2 mm.

Type 49

Amber (Pantone 124), translucent, multifaceted, oblate spheroid, simple. This specimen has 36 molded facets and 9 cut equatorial facets. The latter have partially obliterated the mold mark. The tapered perforation does not go completely through the bead (Fig. 4e). One example, length 8.7 mm, diameter 8.4 mm.

This example may not have been manufactured to be strung. It is present in a feature dating around 1900 (Table 1).

Type 50

Black, opaque, multifaceted, convex bicone, simple. This specimen was biconically shaped in a two-piece mold, as evidenced by the longitudinal mold marks. After it was removed from the mold, 18 facets were pressed on, partially obliterating the marks. The ends are rough and irregular (Fig. 4g). One example, length 13.6 mm, diameter 6.9 mm.

This type occurs in Old Sacramento around 1900 (Table 1).

Type 51

Black, opaque, multifaceted, oblate spheroid, simple. These specimens have 20 to 21 crudely pressed facets. Faceting has partially obliterated the equatorial mold mark. The surface displays a latitudinally concentric ripple pattern. Tapered end of perforation is concave, large, and asymmetrical. The surface is glossy. Three examples, length 8.4 – 8.7 mm, diameter 9.3 – 9.7 mm.

All three Old Sacramento specimens derive from a turn-of-the-century feature (Table 1).

Type 52

Black, opaque, multifaceted, oblate spheroid, glossy, simple. These specimens have five latitudinal rows of eight facets each and a slight equatorial mold mark. One end displays an orange-peel texture. Four examples, length 7.3 – 7.9 mm, diameter 8.3 – 8.4 mm.

These examples appear in Old Sacramento in contexts dating around 1900 (Table 1).

Type 53

Light brown (Pantone 462-465), wood or clay texture, opaque, oblate spheroid, simple. One specimen displays a definite equatorial mold mark (Fig. 4f). These beads appear to be made of clay. Two examples, length 5.7 – 6.7 mm, diameter 7.4 – 8.6 mm.

This type occurs in Old Sacramento contexts that date to 1852 and ca. 1885 (Table 1).

Blown Method

Several manufacturing techniques were employed in the production of blown beads. Beck (1973:62) proposes that hollow-canes or tubes while still plastic, or after being reheated to a plastic state, were free-blown into a symmetrical form or blown into molds of various shapes. Sleen (1973:26) states that these beads were formed by heating a section of glass tubing and blowing it into a hollow ellipsoid form which, after solidifying, had colored pigment or dust blown in to provide a tint.

The Old Sacramento collection includes eight blown beads representing five types.

Type 54

White, translucent, free-blown, hollow, tipped sphere, compound. The surface is clear glass; the interior has been coated with a thin white pigment. The interior of one specimen has an orange pigment over the white. A jagged collar of glass is evident on the ends. Two fragmentary examples.

These examples date from about the last two decades of the last century in Old Sacramento (Table 1).

Type 55

Pink (Pantone 182), translucent, free-blown, hollow, tipped sphere, compound. This specimen has 13 pressed equatorial facets (Fig. 4h). The interior is coated with a pinkish pigment. The ends display a jagged collar of glass and the bores are of different diameters. One example, length 7.9 mm, diameter 6.9 mm, bore 1.3 – 2.0 mm.

Type 56

Colorless, translucent, mold-blown, hollow, tipped sphere, oblate spheroid, simple. One pole has a jagged collar of glass; the other has a symmetrical, smooth, concave surface and a smaller diameter hole. One complete and one fragmentary specimen, length 7.8 mm, diameter 7.9 mm, bore 1.5 – 2.7 mm.

These beads appear in Old Sacramento around 1900 (Table 1).

Type 57

White, translucent, mold-blown, hollow, tipped, oblate spheroid, compound. This specimen has an interior coating of white pigment. One pole has a jagged collar of glass, the other a symmetrical, smooth, concave surface and a hole of smaller diameter (Fig. 4i). One complete and one fragmentary example, length 7.4 mm, diameter 8.4 mm, bore 1.9 – 2.3 mm.

This type is recorded from a Sacramento feature dating to ca. 1900 (Table 1).

Type 58

Pearlescent, opaque, hollow sphere, compound. This bead has a thin layer of pearlescent glass over a clear, densely longitudinally grooved surface. As this specimen is fragmented, it is not possible to determine if it was mold or free-blown. One fragment, dimensions indeterminate.

This bead was recovered from a Sacramento feature dating to ca. 1900 (Table 1).

DISCUSSION

Although the literature on the use of trade beads among Native Americans is quite large, little attention has been paid to the occurrence of such beads in other cultural contexts. A few archeological reports document their use in Africa and by slaves in the American South and the West Indies (Du Toit 1961; Ascher and Fairbanks 1971; Handler and Lange 1978). But except for a few glass beads (possibly trade beads) from turn-of-the-century deposits in Ventura's Chinatown (Bente 1976: 484; Gibson 1976), we know of no previous report from an urban context.

In considering the cultural affiliation of the Old Sacramento beads, reference should be made to the city's demographic history. Prior to the gold rush three Nisenan villages were situated on the future townsite, as was Sutter's Fort, with its dozens (seasonally, hundreds) of Nisenan and Miwok workers. As the city became established, these numbers declined rapidly. The state census of 1852 lists only 80 Indians in the entire county. The following year a dozen individuals arrested for illegally selling fish are mentioned as "almost the

last representatives of this unfortunate nation in this vicinity" (*Sacramento Union*, July 12, 1853:1). It can hardly be doubted that by this time Sacramento's native population had been effectively decimated.

Meanwhile, the non-Indian population soared. The city held an estimated total of 150 persons in April, 1849. The 1850 census listed an enumerated (i.e., non-Indian) population of 9,087 for the city and county, and the corresponding figure in 1852 was 12,418.

By 1860 the numbers had risen to 24,142 and by 1880 to 34,390. Consequently, in terms of population totals alone, it is unlikely that our beads derive from either a Native American or a trade context. Furthermore, the archeological chronology of bead occurrence (so far as it can be trusted) does not parallel the precipitous decline in Indian numbers. Our earliest (early 1850s) deposits yielded very few beads, while they are most abundant in deposits dating to the 1880s and later (Table 1). Also, except for a relatively high density in one turn-of-the-century feature, they exhibit no tendency toward geographical concentration, but appear to be lightly scattered through most of Old Sacramento.

A majority (84%) of the Old Sacramento bead types occur in aboriginal sites as well. In view of the placement of the Sacramento beads in both time and space, however, an association with either Euroamerican or Chinese residents seems almost certain. Since both cultures operated within a fully developed cash economy, beads can hardly have had any exchange value. Furthermore, they were so inexpensive that they could have had no value as status indicators. Their use as personal adornment by poor or lower middle-class women, or as play paraphernalia by young girls seems likely. In a few cases, more specific cultural contexts can be identified.

Bead Type 49, so far as we can determine, is unlike any previously described in the literature. Although amber faceted beads are fairly common, in the present instance the perforation does not fully penetrate the longitudinal axis. Such a specimen could not have been strung on a necklace or sewn into a garment. Instead it probably served as the terminal bead on one element of a beaded fringe. We cannot say of course, that this kind of decoration was not used by Native Americans, but we believe it was more commonly associated with middle-class Euroamerican households, incorporated in the decorative trim on items such as lampshades, table coverings, curtains and women's clothing (cf. Weinstock, Lubin 1891:37; Montgomery Ward 1894:77; Sears, Roebuck 1897:319; Adburgham 1969:243, 255).

Bead Types 46 and 53 are similarly absent from any of the other collections we have examined and from the archeological literature as well. However, assorted clay beads were advertised as children's toys early in the present century by at least one mail-order firm (Sears, Roebuck 1927:590), and the Old Sacramento beads may belong to this tradition.

Twelve (21%) of the bead types in the Sacramento collection (21% of specimens) are black. When compared to other bead collections there is a striking difference, since in aboriginal and early European sites, black beads are extremely rare or totally absent (Table 2). It is possible however that an explanation for the large quantity of black beads occurring in Old Sacramento may be found in Euroamerican tastes of the period. As mentioned above, merchandise catalogues of this time are filled with descriptions of beaded items for the household and beaded trim on dresses, coats, handbags, and the like. In clothing especially, black braid with black bead trimming was an extremely popular combination of ornamentation and it would be unusual if remnants of black beaded trim, so popular during this period, were not recovered in late nineteenth-century urban sites.

Five types (9%) from the Old Sacramento collection proved on examination to be blown specimens. As described in the text, some of these beads were manufactured by being blown into a mold; others were free-blown. Research has revealed that no mold-blown examples have been described for any historical Native American or European site in California. However, two free-blown bead types were recovered from the excavations in Ventura, and according to Gibson (1976:118, 123-125) these postdate 1870.

The pearlescent coloration of some of the Old

Sacramento blown beads suggests that they may have been intended as artificial pearls, but no documentation of this has yet been made. These beads are extremely fragile and this characteristic alone would probably have disqualified them from any important role in the frontier trade.

The above analysis indicates that beaded decoration was very popular among the inhabitants of Sacramento during the late nineteenth century. As we have no reason to consider Sacramento unique in this respect, it may be possible to conclude that a similarity of beaded items and bead trim may be expected in any Euroamerican site of this time. After all, we must remember that beads were originally manufactured by Europeans to suit European tastes and continue to be an important item of decoration to the present day. That beads were attractive to Native American and other contacted groups was a bonus for the manufacturers. They doubtless invented certain styles, or produced others in greater quantity, specifically for the frontier market, but no matter how important this trade became it never totally displaced the demand of the European (and Euroamerican) population itself.

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TABLE 1

Occurrence of Old Sacramento Beads in Closely Dated Deposits[1]

Bead Type	113 J Street Stratum 3(fire) Nov. 1852	115 J Street Stratum 3(fire) Nov. 1852	1022 4th Street Courtyard 1860s	325 K Street Privy 1 ca. 1866	325 K Street Trash Pit 1 ca. 1885	917 Front Street Stratum 7 1862-78	917 Front Street Strata 4-6 1878-80	917 Front Street Stratum 3a 1891	903 Front Street Cistern ca. 1900
1								1	
2					2				
3	1				2				
4					1				
5			5	1	2				
6			3						
7					1				
8								1	
9	1								
13					2				3
14		1							
16									1
17					1				
19							5		
20									2
21									1
22									1
23									1
24						1			1
32									1
34							6		
35						1			
36									2
37									3
38									1
41									3
43									1
45				2		4			
46	1								
49									1
50									1
51									3
52									4
53	1				1				
54							1		1
56									2
57									1
58									1
Totals	4	1	8	3	12	6	12	2	35

[1] cf. Schulz, Hastings, and Felton, this volume.

TABLE 2

Frequency of Black Beads at Several California Sites

Site	Ethnic Association	Date	No. Beads	No. Black	% Black	Source
Old Sacramento	Euroamerican, Chinese	1849-ca. 1900	109	23	21	This Report
Fort Ross	Russian, Pomo Euroamerican	1812-1841 1841 +	218	2	0.9	This Report
Ama-23	Northern or Plains Miwok	Preh. ca. 1840	6,671	0		Palumbo 1967
Mrn-402	Coast Miwok	Preh. 1884	934	8	0.9	Dietz 1976
Sac-192	Nisenan	ca. 1830-ca. 1930	456	0		This Report
Sac-225	Nisenan	ca. 1860-1880s	2,055	0		This Report
Ven-87	Spanish, Chumash	Preh. 1870s	4,301	108	2.5	Gibson 1976

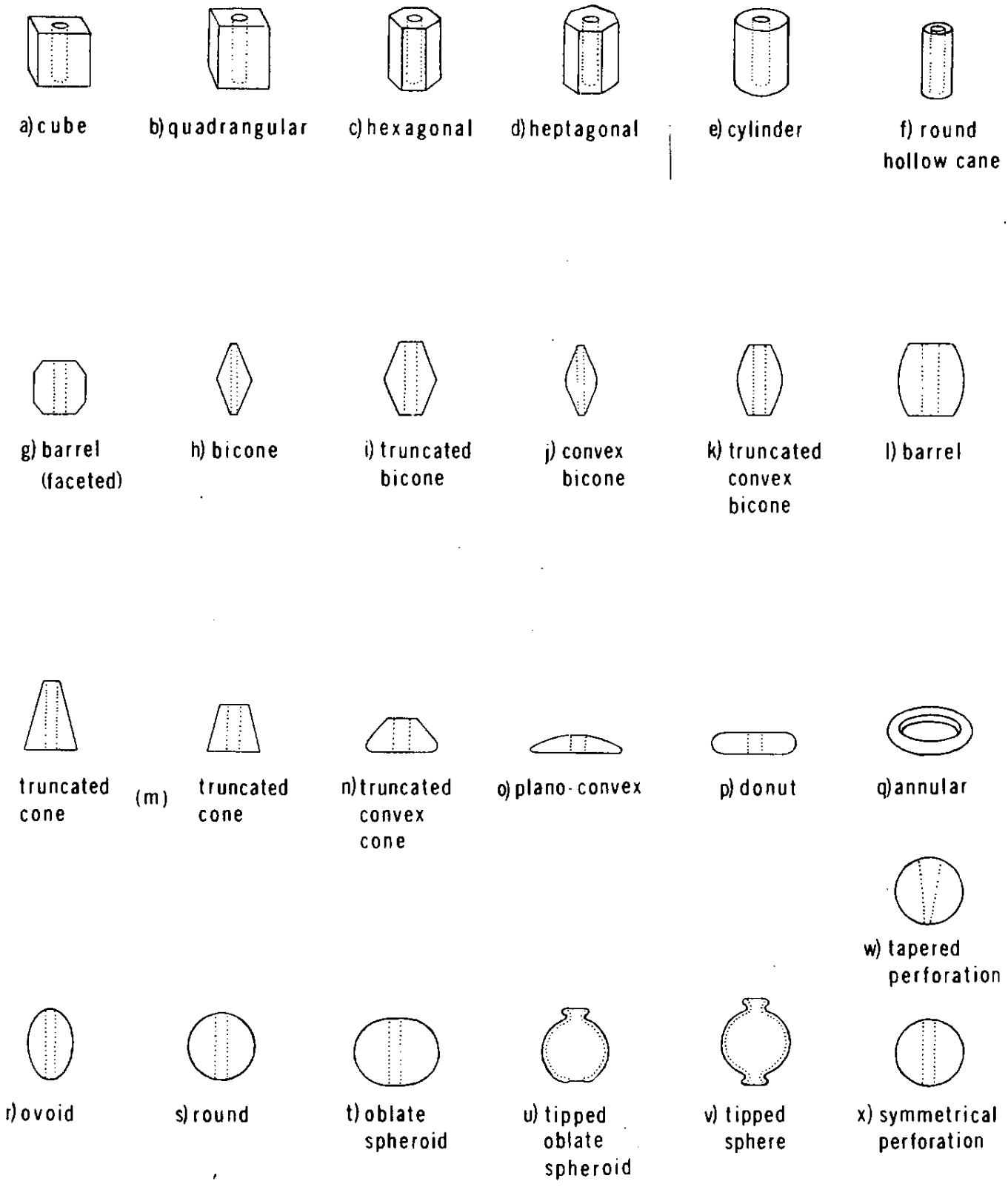

Figure 1. General shapes of Old Sacramento beads (modified from Sleen 1973).

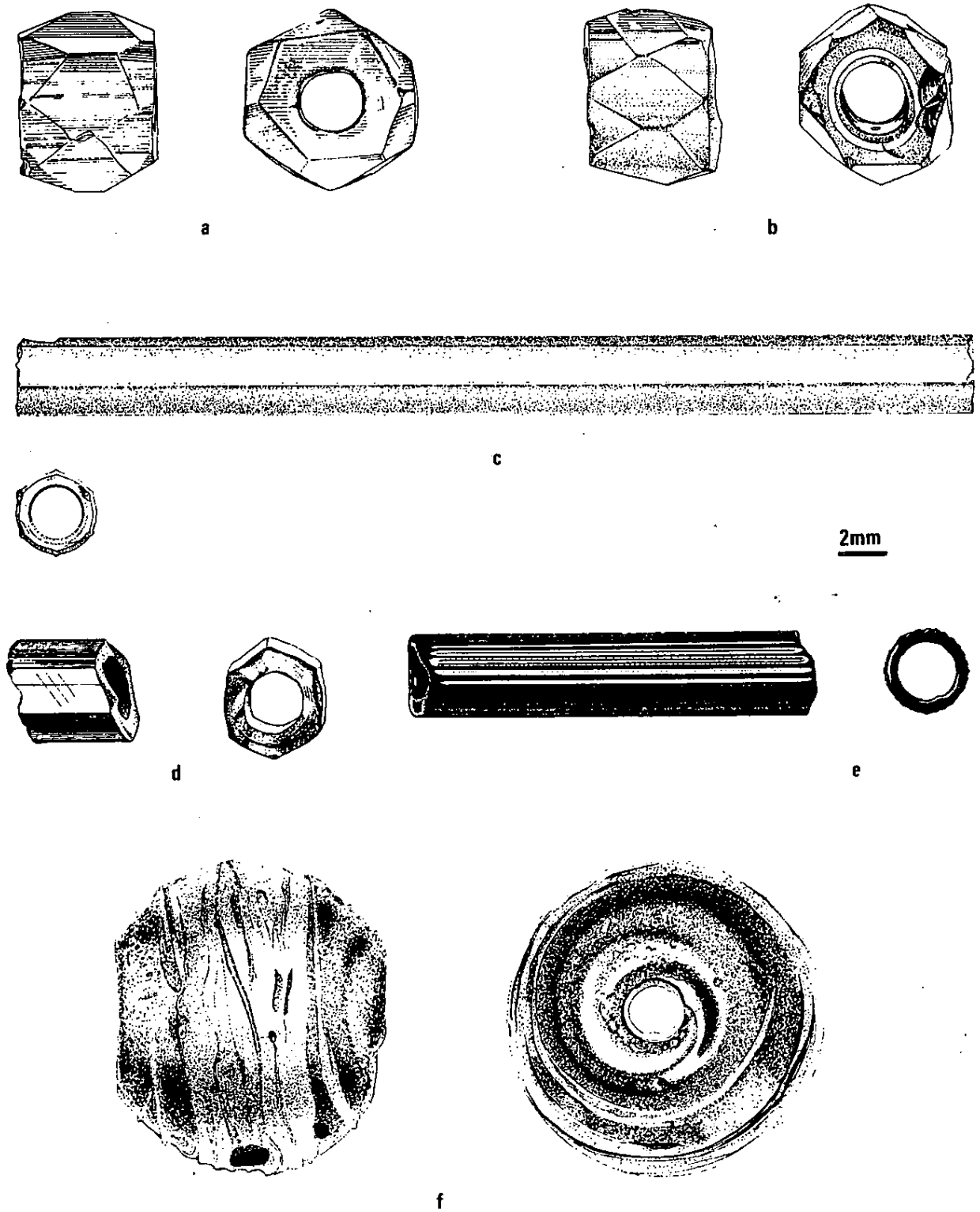

Figure 2. Old Sacramento beads: a) Type 2 (P-166-6377B); b) Type 5 (P-166-6972); c) Type 8 (P-161-320); d) Type 17 (P-166-6324B); e) Type 22 (P-205-2665); f) Type 29 (P-161-2990).

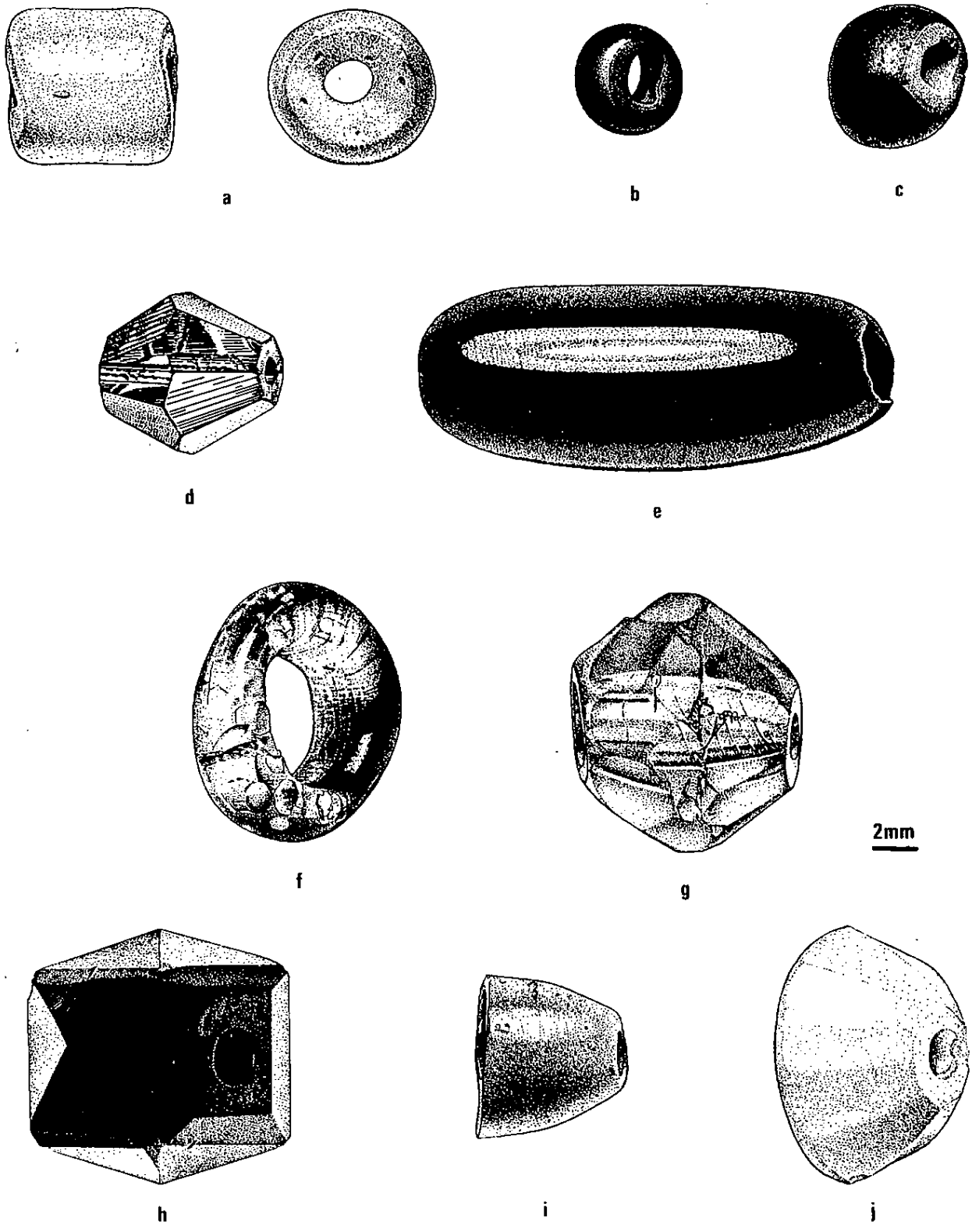

Figure 3. Old Sacramento beads: a) Type 12 (P-161-5827); b) Type 14 (022-45-509); c) Type 15 (P-208-2-128); d) Type 28 (022-45-2127); e) Type 35 (P-161-922); f) Type 38 (P-205-2669); g) Type 40 (P-208-18-65); h) Type 41 (P-205-327); i) Type 39 (022-46-1332); j) Type 46 (P-209-7-3).

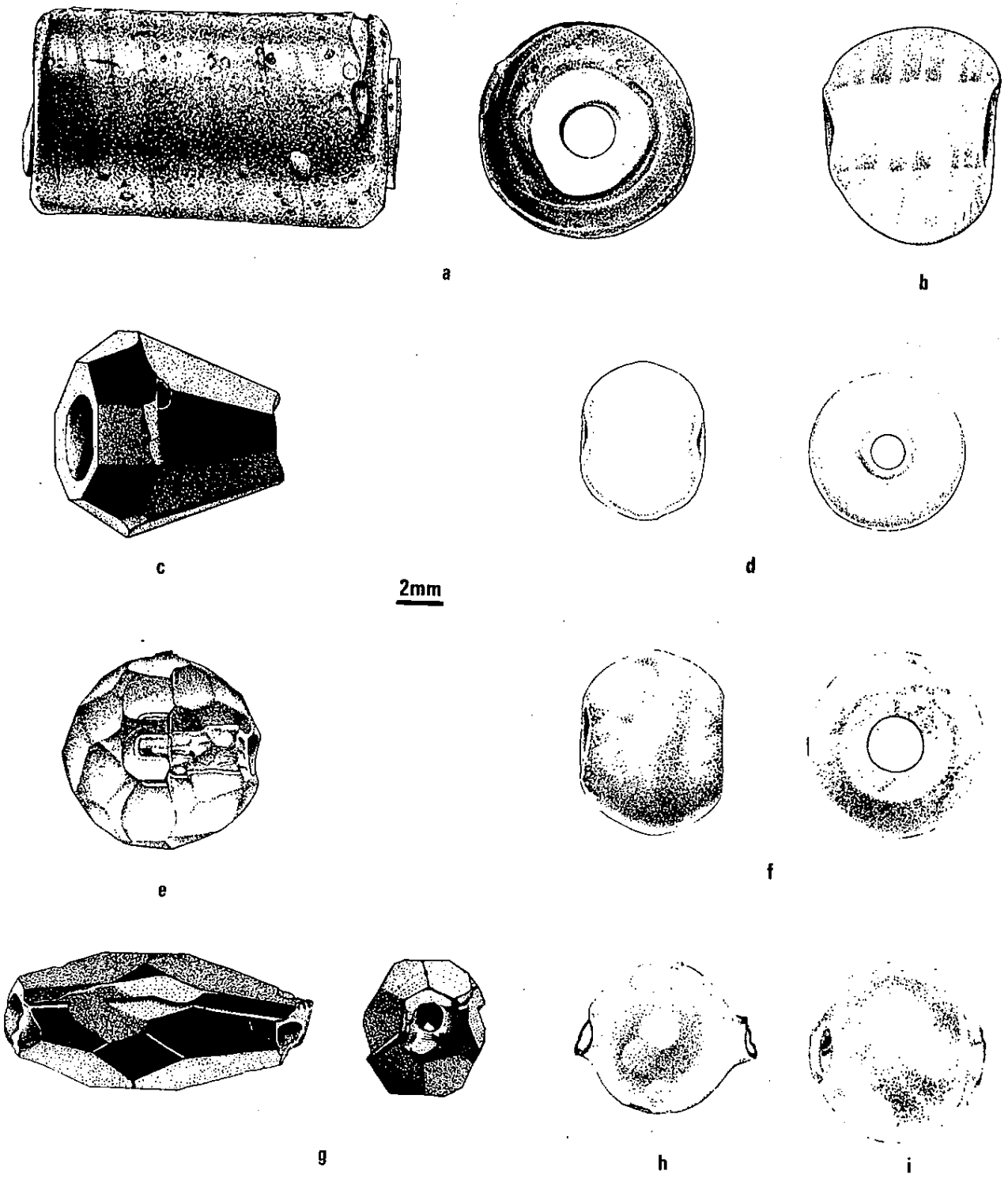

Figure 4. Old Sacramento beads: a) Type 30 (P-161-2174); b) Type 31 (P-208-3-182); c) Type 43 (P-205-1453); d) Type 45 (P-166-6913A); e) Type 49 (P-205-1214); f) Type 53 (P-210-36-86); g) Type 50 (P-205-574); h) Type 55 (P-208-9-227); i) Type 57 (P-205-589).

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