

# PAPERS ON OLD SACRAMENTO ARCHEOLOGY



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# EUROPEAN "TRADE" BEADS FROM OLD SACRAMENTO

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## 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'Amoureux. 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 perseverance 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<sup>2</sup>) 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* - manufactured 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, multifaceted, 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.

The core is a layer of white glass. Surface and subsurface longitudinal striation is evident. Three examples, length 6.6 – 7.7 mm, diameter 8.5 – 9.0 mm.

This type is from 1860s deposits in Old Sacramento (Table 1).

#### Type 7

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. The core consists of two concentric layers of differently colored (clear, white) glass. Surface and subsurface longitudinal striations are evident. One example, length 6.1 mm, diameter 8.4 mm.

This type is datable in Old Sacramento to ca. 1885 (Table 1).

#### Type 8

White, opaque, hexagonal hollow-cane, simple, tumbled. The surface is smooth and longitudinally striated (Fig. 2c). One example, length 43.0 mm, diameter 3.5 mm. According to Sorensen and Le Roy (1968:42, Type I-15), this type was frequently subjected to additional manufacturing processes. It is an excellent example of the basic hollow-cane that was segmented into shorter lengths, which were used for beads "as is" or faceted around the ends and tumbled to produce more finished beads. However, the length of this specimen is unusual, as beads this long are more fragile than shorter ones.

The lone specimen is from an 1890s context (Table 1).

#### Type 9

White, opaque, barrel-shaped, asymmetrical ends and perforations, simple, tumbled. These specimens are pitted and have an orange-peel texture. The surfaces are glossy to dull. Two examples, length 7.1 – 7.6 mm, diameter 7.6 – 7.7 mm.

Specimens of this type are commonly known as "California trade," "china," "quartz," or "pony" beads (Sorensen and Le Roy 1968:42,

Type I-3), and they have a wide distribution in the western and southwestern states. They are believed to have been involved with the early trade of the Hudson's Bay Company and possibly could have been introduced as early as 1600. Dietz (1976:130, Type 6) assigns a date of ca. 1833-1884 to similar beads of this type found in CA-Mrn-402. One of the Sacramento specimens was recovered in the ashes of an 1852 fire (Table 1).

#### Type 10

White, opaque, donut-shaped, asymmetrical ends and perforation, simple, tumbled. The surface is lusterless, patinated, and exhibits a random pattern of lenticular marks. One example, length 7.5 mm, diameter 10.5 mm.

#### Type 11

White, opaque, barrel-shaped, compound, tumbled. The opaque milk white core has an exterior layer of off-white glass coated with a thin film of clear glaze. The surface is pitted and erosion has removed all but a trace of the original gloss. One example, length 6.5 mm, diameter 7.4 mm.

#### Type 12

White, opaque, glossy, barrel-shaped, compound, tumbled. The opaque cream white core has an exterior layer of milk white glass coated with a thin film of clear glossy glass. The ends are pitted. Subsurface globular and longitudinally elongated bubbles are evident (Fig. 3a). One example, length 6.5 mm, diameter 6.7 mm.

This bead is similar to a type found at the 1833-1884 component at CA-Mrn-402 (Dietz 1976:132, Type 16).

#### Type 13

White, opaque, donut to barrel-shaped, compound, tumbled. The opaque cream white core has an exterior layer of milk white glass. This specimen is characterized by a heavily patinated and eroded core that displays individual glass fibers swirled in an irregular pattern. Sometimes the core appears beige and powdery. Five examples, length 2.3 – 3.7 mm, diameter 4.0 – 5.8 mm.



This type was recovered from contexts dating from ca. 1885 and 1900 in Old Sacramento (Table 1).

#### Type 14

Brick red (Pantone 14), opaque, donut-shaped, asymmetrical perforation, simple, tumbled. The single specimen appears to have a core of dark brown (Pantone 209) glass that is swirled in an irregular pattern. However, fragmented examples from other sites show that manufacturing involved two shades of red glass that were not thoroughly mixed before drawing (Fig. 3b). One example, length 3.0 mm, diameter 4.6 mm.

This type is found in north central California in the late nineteenth century. Specimens found at CA-Mrn-402 are dated to ca. 1833-1884 (Dietz 1976:131, Type 7). This type occurs in a Sacramento context dating to 1852 (Table 1).

#### Type 15

Red (Pantone 193) translucent exterior, white opaque core, barrel-shaped, compound, tumbled (Fig. 3c). One example, length 4.3 mm, diameter 6.0 mm.

This type, according to Woodward (1967:19) is known as a Cornaline d'Alleppe form, and was widely distributed in the second quarter of the last century. Sorensen and Le Roy (1968:44, Type I-37) refer to specimens of this type as "white hearts," "under whites," "late Hudson's Bay," or "California trade" beads, and state that they were first traded in the early 1840s. It is present at CA-Mrn-402, dating ca. 1833-1884 (Dietz 1976:133, Type 18).

#### Type 16

Sea green (Pantone 335), translucent, hexagonal hollow-cane, simple, tumbled. Surface and subsurface longitudinal striations are evident. One example, length 2.9 mm, diameter 3.6 mm.

This type occurs in Old Sacramento around 1900 (Table 1). Similar examples appear at Ven-87 and date ca. 1785-1816 (Gibson 1976:122, Type C3a).

#### Type 17

Cobalt blue (Pantone 289), translucent, hexagonal hollow-cane, simple. Surface and subsurface longitudinal striations are evident. Ends of cane are sharp and jagged (Fig. 2d). One example, length 4.0 mm, diameter 4.3 mm.

This bead is from a mid-1880s context (Table 1).

#### Type 18

Cobalt blue (Pantone 288), translucent, barrel-shaped, hexagonal hollow-cane, multifaceted, simple, tumbled. Six facets cut around each end, leaving six equatorial facets. Surface and subsurface longitudinal striations evident. One example, length 6.6 mm, diameter 7.8 mm.

According to Sorensen and Le Roy (1968:45, No. 72) this type "is probably the true 'Russian' bead traded by the Russian-American Fur Company, along the Northwest coast in the late 1700s and early 1800s." Similar beads found at CA-Mrn-402 date ca. 1833-1884 (Dietz 1976:129, Type). Gibson (1976:123, Type F1f) indicates that this type is present at CA-Ven-87 and dates after 1839.

#### Type 19

Dark blue (Pantone 542), opaque, barrel-shaped, heptagonal, multifaceted, compound, tumbled. The surface of this specimen has seven facets pressed around each end, leaving seven equatorial facets. The core consists of two to four concentric layers of various shades of blue. Some of the facets around the ends have an orange-peel texture. The equatorial facets are longitudinally striated. The diameter of the perforation varies among individual beads and is slightly asymmetrical. Five examples, length 7.0 - 8.5 mm, diameter 8.9 - 9.3 mm.

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

#### Type 20

Sky blue (Pantone 319), opaque, donut-shaped, simple, tumbled. The surface is pitted and

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, multifaceted, 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 manufac-

tured 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 pearly 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 Euro-american) population itself.

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TABLE 1

Occurrence of Old Sacramento Beads in  
Closely Dated Deposits<sup>1</sup>

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

<sup>1</sup> 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

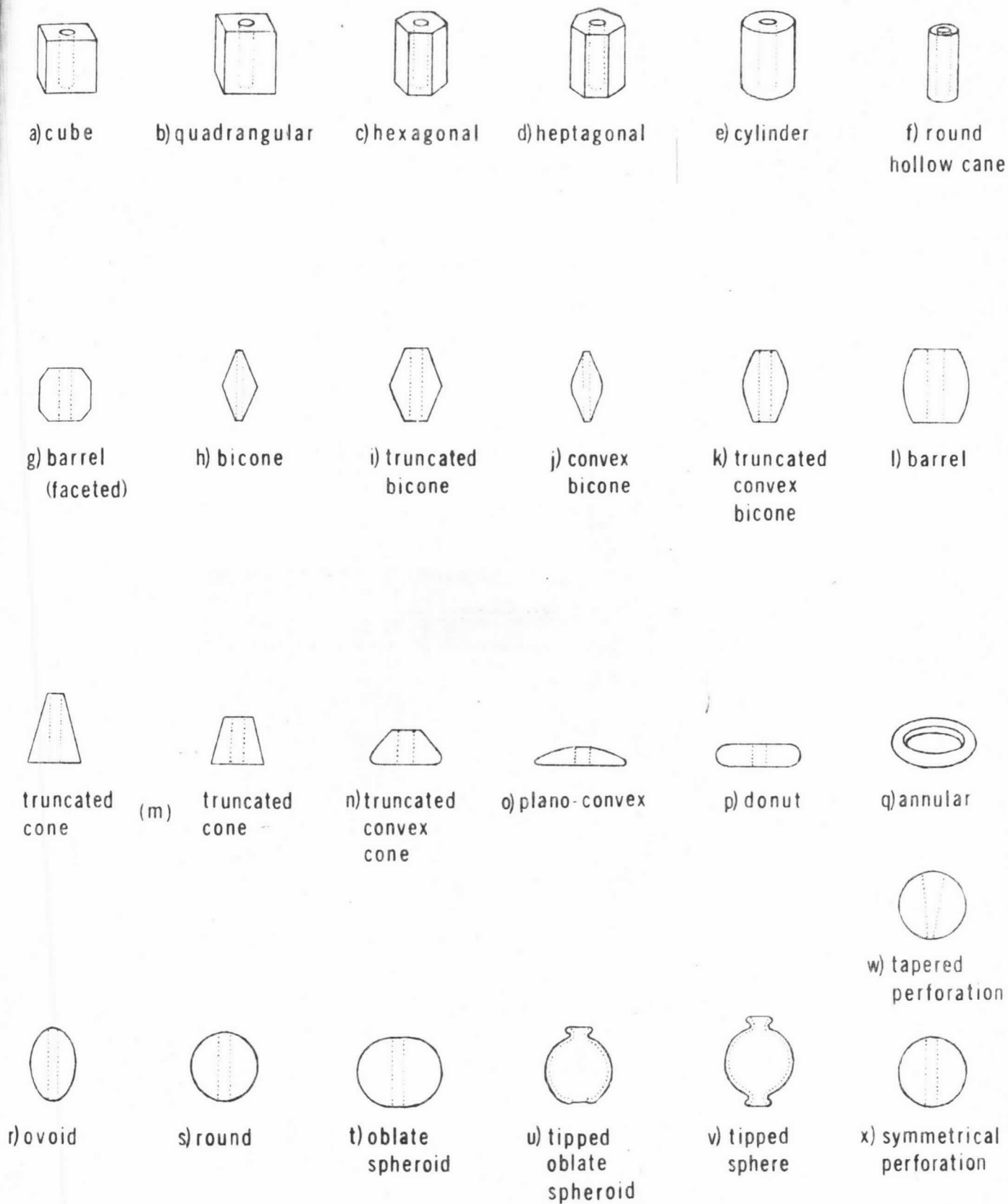
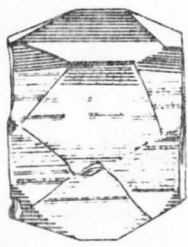
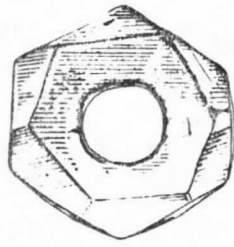


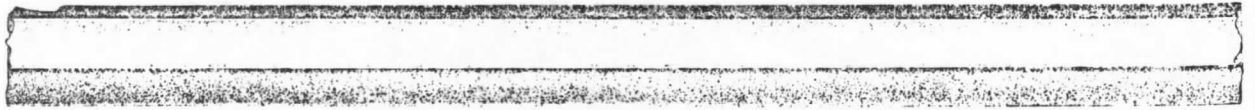
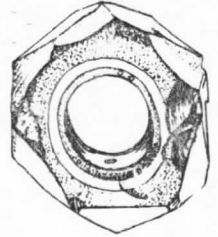
Figure 1. General shapes of Old Sacramento beads (modified from Sleen 1973).



a



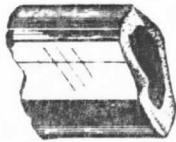
b



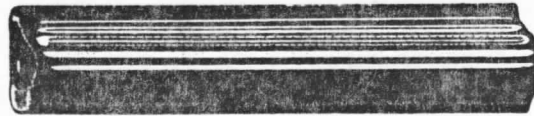
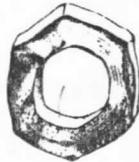
c



2mm



d



e



f

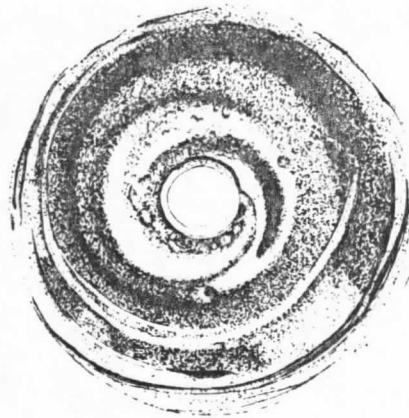


Figure 2. Old Sacramento beads: a) Type 2 (P-166-6377B); b) Type 5 (P-166-6972); c) Type 8 (P-161-320); d) Type 17 (P-166-6324B); e) Type 22 (P-205-2665); f) Type 29 (P-161-2990).

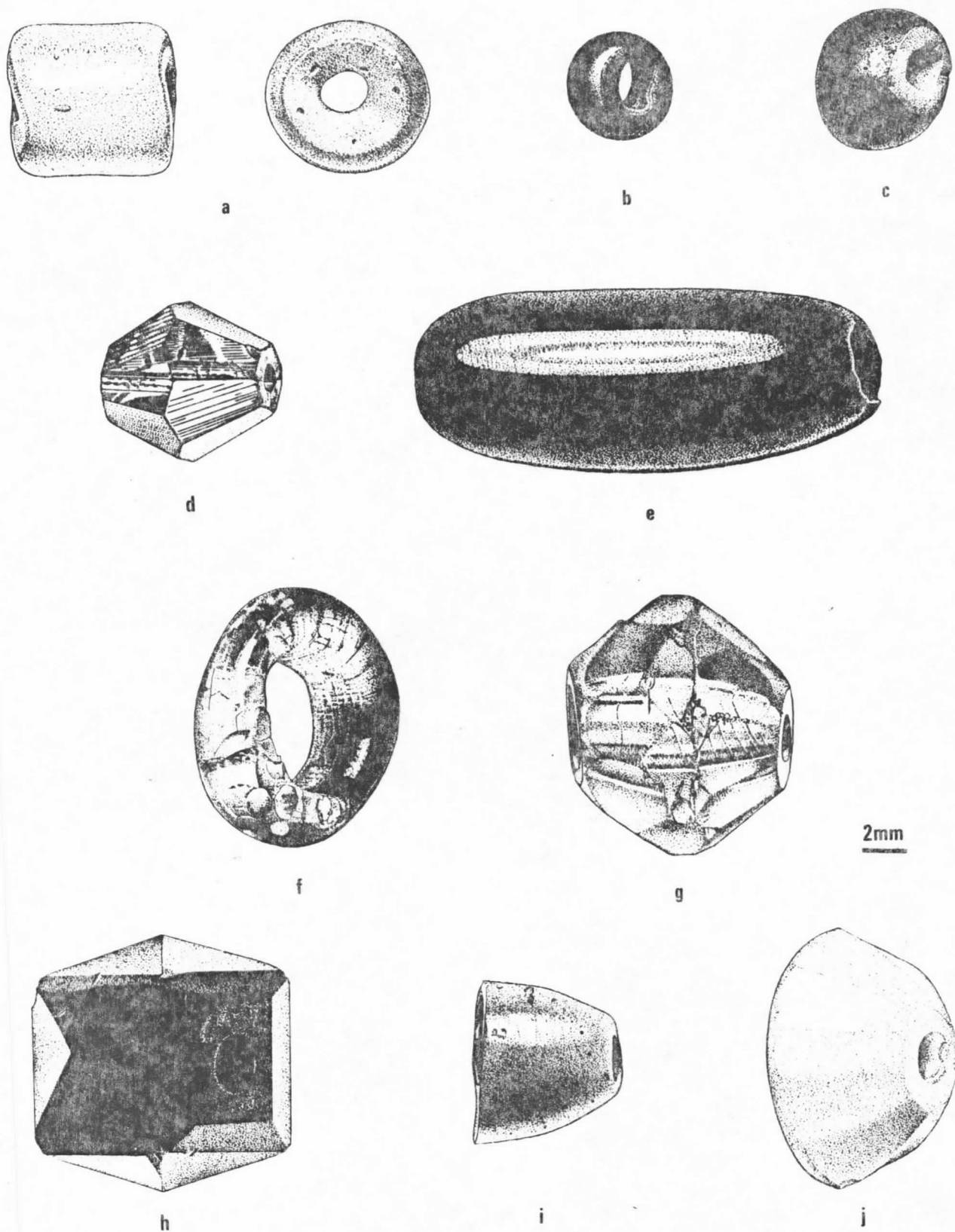


Figure 3. Old Sacramento beads: a) Type 12 (P-161-5827); b) Type 14 (022-45-509); c) Type 15 (P-208-2-128); d) Type 28 (022-45-2127); e) Type 35 (P-161-922); f) Type 38 (P-205-2669); g) Type 40 (P-208-18-65); h) Type 41 (P-205-327); i) Type 39 (022-46-1332); j) Type 46 (P-209-7-3).



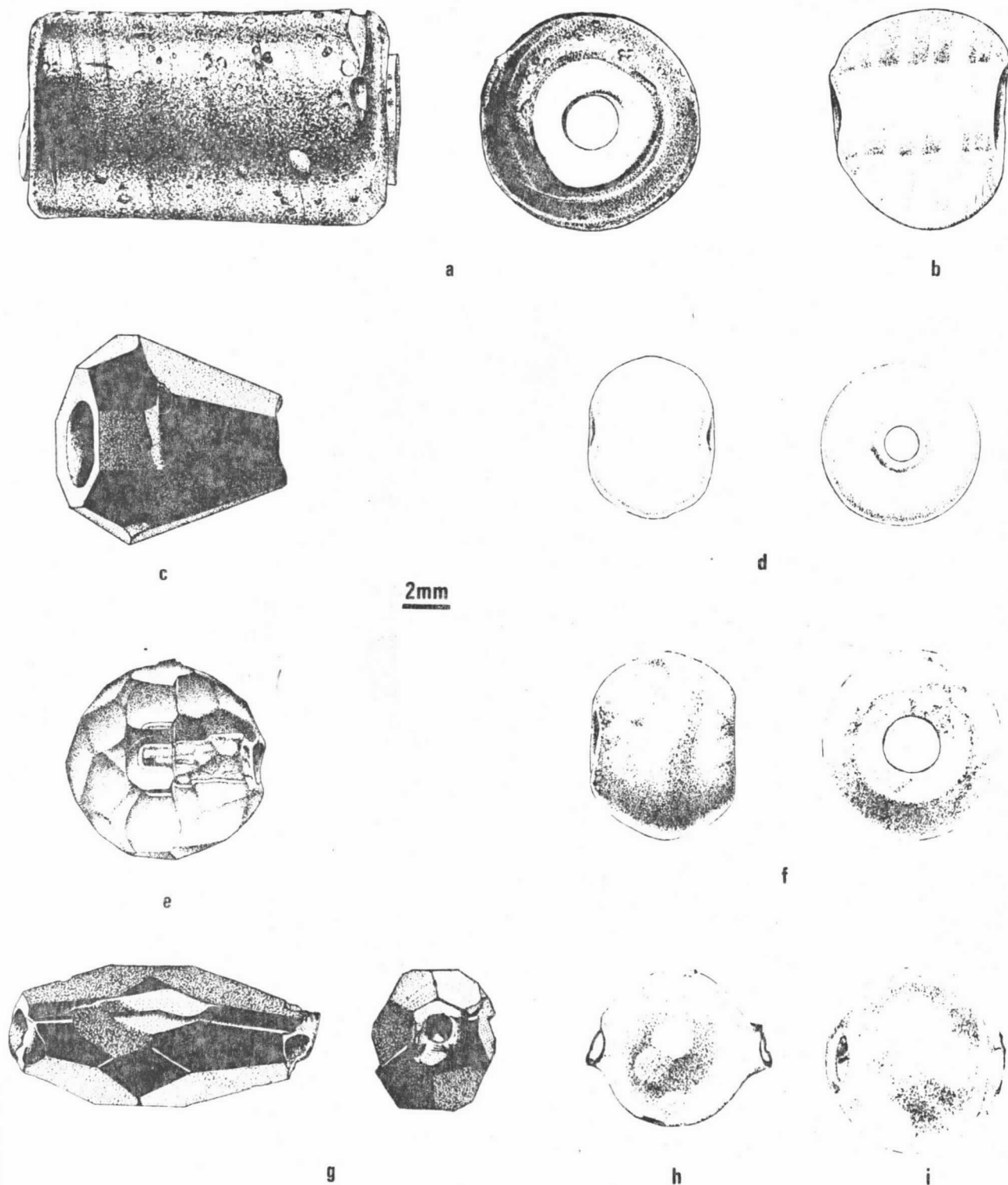


Figure 4. Old Sacramento beads: a) Type 30 (P-161-2174); b) Type 31 (P-208-3-182); c) Type 43 (P-205-1453); d) Type 45 (P-166-6913A); e) Type 49 (P-205-1214); f) Type 53 (P-210-36-86); g) Type 50 (P-205-574); h) Type 55 (P-208-9-227); i) Type 57 (P-205-589).

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