SIXTEENTH-CENTURY GLASS BEADS FROM CHOTUNA, NORTH COAST OF PERU

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Burials excavated on the north coast of Peru were associated with 16th-century European glass beads as well as shell and stone specimens of local manufacture. The beads were strung as necklaces, bracelets, and anklets, often combining several varieties of European beads with local products. The glass beads as well as the other grave goods suggest that the burials date to the first part of the 16th century, probably between 1530 and 1560.

INTRODUCTION

Five Colonial Period burials dating to the 16th century were excavated at Chotuna (Figure 1), an archaeological site in the Lambayeque Valley of northern Peru, about 14 km northeast of the city of Chiclayo. The site was occupied from approximately A.D. 700 until the 16th century. The associated grave goods include many varieties of European glass beads, as well as shell and stone beads of local manufacture. The burials provide an unusual opportunity to study 16th-century bead assemblages and to observe the different areas of the body on which beads were placed, the relative importance of these areas, and the ways in which different varieties of beads were combined.

In pre-Columbian Peru, beads were made from shell, stone, metal, bone, and seeds. Glass beads did not appear in Peru until they were introduced from Europe in the 16th century. The first arrival of glass beads in Peru is difficult to document. Even before European arrival, some glass beads may have come to Peru through aboriginal trade from Spanish settlements along the Caribbean coast of Columbia or from the Spanish settlement on the Pacific coast of Panama (Smith and Good 1982:10-11). Of particular interest in relation to Chotuna, however, is the expedition of Pizarro in 1532. On his march from Piura to Cajamarca he passed through Cinto, located in the Lambayeque Valley approximately 33 kilometers from Chotuna (Trujillo [1571] 1953:134). Before Pizarro reached Cajamarca, the Inca ruler Atahualpa sent a messenger to him bringing gifts. Pizarro in turn presented the Inca envoy and his men with gifts that included glass beads (Estete [1535] 1968:368; Trujillo [1571] 1953:136).

The Spanish brought glass beads to Peru in the form of necklaces, strings of beads, and unstrung beads. Beads were given as gifts and they also played an important role in the Spanish system of trade. There is, however, little evidence of how the glass beads either replaced or combined with native beads or how they were used in burials as either offerings or body ornamentation. Thus the Chotuna burial assemblages are of particular importance.

The five Colonial Period burials at Chotuna were found on the east side of a small adobe pyramid (Figure 2). They were in shallow pits dug into a mixture of windblown sand and broken adobe. Each pit contained a single individual. The bodies appeared to have been wrapped in textiles, most of which had decomposed along with other organic material.

THE CHOTUNA BEADS

The Chotuna burials yielded a total of 2,917 beads. Of these, 771 (26%) are glass, 2,143 (74%) are shell, and 3 (0.1%) are stone. These are described below and illustrated in Plates IIA, IIIA, and IVA. Most of the beads are in good condition, although some of the shell beads have started to decompose and a few glass beads exhibit patination.

Glass Beads

The glass beads are of drawn (Varieties 1-19) and wound (Varieties 20-24) manufacture. In the descriptions that follow, the corresponding variety code in the classification system devised for 16th-century Spanish trade beads by Smith and Good (1982) is appended to each variety where possible (M.T. Smith 2011: pers. comm.), followed by the appropriate code in the taxonomic system for glass beads created by Kidd and Kidd (1970) as expanded by Karklins

Figure 1. Overview of the Chotuna site (photo: C. Donnan).

Figure 2. The pyramid where the Colonial Period burials were uncovered (photo: C. Donnan).

(1985)(K. Karklins 2011: pers. comm.). Beads designated with an asterisk (*) in the Kidd system indicate an unrecorded variety. A double asterisk (**) designates a new type. Drawn beads with an alphanumeric designation are similar in all respects except for differing sizes (e.g., Varieties 4A-4D), the presence of patination (8C), or accidental stripes (9C-10C). Square-sectioned tubular beads were only identified as straight or twisted when the beads were long enough for this to be determined.

Drawn Beads

Variety 1. Tubular, square cross section; colorless; 7 mm length and 8 mm diameter; 2 specimens (S&G 49; Ic*).

Variety 2. Tubular, square cross section; green; 3-8 mm length and 4 mm diameter; 3 specimens (S&G IIA1h; Ic9?).

Variety 3A. Tubular, round cross section; dark blue; 6-8 mm length and 2-3 mm diameter; 13 specimens (S&G 2; Ia19/Ia20).

Variety 3B. Tubular, round cross section; dark blue; 4-5 mm length and 3-4 mm diameter; 4 specimens (S&G 2; Ia19/Ia20).

Variety 4A. Tubular, square cross section; dark blue; 6-14 mm length and 0.5-2 mm diameter; 9 specimens (S&G 33; Ic*).

Variety 4B. Tubular, square cross section; dark blue; 3-10 mm length and 2-4 mm diameter; 54 specimens (S&G 33; Ic*).

Variety 4C. Tubular, square cross section; dark blue; 15-59 mm length and 4-6 mm diameter; 10 specimens (S&G 33; Ic*).

Variety 4D. Tubular, square cross section; dark blue; 21-46 mm length and 6-8 mm diameter; 3 specimens (S&G 33; Ic*).

Variety 5A. Tubular, straight, square cross section; turquoise blue exterior/white/colorless core; 9-32 mm length and 4-6 mm diameter; 12 specimens (S&G 51; IIIc1).

Variety 5B. Tubular, straight, square cross section; turquoise blue exterior/white/colorless core; 16-36 mm length and 6-8 mm diameter; 2 specimens (S&G 51; IIIc1).

Variety 6A. Tubular, straight, square cross section; turquoise blue exterior/white/dark core; 4-62 mm length and 4-6 mm diameter; 69 specimens (S&G 40; IIIc*).

Variety 6B. Tubular, straight, square cross section; turquoise blue exterior/white/dark core; 45-50 mm length and 6-8 mm diameter; 3 specimens (S&G 40; IIIc*).

Variety 7. Tubular, square cross section; dark blue exterior/white/colorless core; 3.5-6 mm length and 4-5 mm diameter; 39 specimens (S&G 55; IIIc3).

Variety 8A. Tubular, square cross section; dark blue exterior/white/dark core; 3-10 mm length and 2-4 mm diameter; 113 specimens (S&G 44; IIIc*).

Variety 8B. Tubular, square cross section; dark blue exterior/white/dark core; 5-7 mm length and 4-5 mm diameter; 22 specimens (S&G 44; IIIc*).

Variety 8C. Tubular, square cross section; dark blue exterior/white/dark core; heavily patinated; 12-21 mm length and 8-9 mm diameter; 3 specimens (S&G 44; IIIc*).

Variety 9A. Tubular, twisted, square cross section; turquoise blue exterior/white/colorless core; 8-50 mm length and 4-6 mm diameter; 18 specimens (S&G 59 [facets] or 69 [no facets]; IIIc'*).

Variety 9B. Tubular, slightly twisted, square cross section; turquoise blue exterior/white/colorless core; 33-53 mm length and 7-8 mm diameter; 2 specimens (S&G 69; IIIc'*).

Variety 9C. Tubular, twisted, square cross section; turquoise blue exterior/white/colorless core; one accidental stripe along one edge (*see* Plate IVA); 47 mm length and 8 mm diameter; 1 specimen (S&G 69; IIIc'*).

Variety 10A. Tubular, twisted, square cross section; turquoise blue exterior/white/dark core; 10-28 mm length and 4-6 mm diameter; 52 specimens (S&G 67; IIIc'4).

Variety 10B. Tubular, twisted, square cross section; turquoise blue exterior/white/dark core; 9-61 mm length and 6-8 mm diameter; 13 specimens (S&G 58; IIIc'4).

Variety 10C. Tubular, twisted, square cross section; turquoise blue exterior/white/dark core; one accidental stripe along one edge (*see* Plate IVA); 46 mm length and 7 mm diameter; 1 specimen (S&G 67; IIIc'4).

Variety 11. Tubular, twisted, square cross section; reddish brown exterior/white/dark core; 21 mm length and 8 mm diameter; 1 specimen (S&G IIIA2; IIIc'*).

Variety 12. Tubular, twisted, square cross section; dark blue exterior with 2 red and 2 white stripes on alternating edges/white/dark core (*see* Plate IVA); 14 mm length and 5 mm diameter; 1 specimen (S&G 66; III**).

Variety 13. Round; dark blue exterior with 2 red and 2 white, alternating, twisted stripes/white/dark core (*see* Plate IVA); 6 mm length and 6 mm diameter; 1 specimen (S&G 29; IVb'*).

Variety 14. Tubular, round cross section; 6-layer chevron: colorless exterior/white/light blue/white/light blue/colorless core; dark blue stripes are inlaid between the teeth of the outer white layer; 10 teeth on all inner layers (*see* Plate IVA); 17 mm length and 3 mm diameter; 1 specimen (S&G IVA4; IIIp*).

Variety 15A. Tubular, faceted, round cross section; 7-layer chevron: dark blue exterior/white/red/white/translucent green/white/translucent green core; 12 teeth on all inner layers; 5-9 mm length and 5-8 mm diameter; 100 specimens (S&G 79; IIIk*).

Variety 15B. Tubular, faceted, round cross section; 7-layer chevron: dark blue exterior/white/red/white/translucent green/white/translucent green core; 12 teeth on all inner layers; 7-12mm length and 9-10 mm diameter; 2 specimens (S&G 79; IIIk*).

Variety 16A. Tubular, faceted, round cross section; 7-layer chevron: dark blue exterior/white/red/white/translucent green/white/translucent green core; 18 teeth in the outer white layer and 12 teeth on all other inner layers; 3-9 mm length and 5-8 mm diameter; 77 specimens (S&G 79; IIIk*).

Variety 16B. Tubular, faceted, round cross section; 7-layer chevron: dark blue exterior/white/red/white/translucent green/white/translucent green core; 18 teeth in the outer white layer and 12 teeth on all other inner layers; 9 mm length and 10 mm diameter; 1 specimen (S&G 79; IIIk*).

Variety 16C. Tubular, faceted, round cross section; 7-layer chevron: dark blue exterior/white/red/white/translucent green/white/translucent green core; 18 teeth in the outer white layer and 12 teeth on all other inner layers; 13 mm length and 16 mm diameter; 1 specimen (S&G 79; IIIk*).

Variety 17. Tubular, faceted; square cross section; 7-layer chevron: dark blue exterior/white/red/white/blue/white/translucent green core; 10 teeth in the outer white layer and 12 teeth on all other inner layers (*see* Plate IVA); 10 mm length and 10 mm diameter; 1 specimen (S&G 100; III**).

Variety 18. Tubular, faceted, round cross section; 7-layer chevron: transparent light blue exterior/white/red/white/blue/white/translucent green core); dark blue, red, and translucent green stripes are inlaid between the teeth of the outer white layer (*see* Plate IVA); 12 teeth on all inner layers; 10 mm length and 10 mm diameter; 1 specimen (like S&G 98 except core is green not colorless; IIIp*).

Variety 19. Round; transparent green; 7 mm length and 7 mm diameter; 2 specimens (S&G 13; IIa28).

Wound Beads

Variety 20A. Small doughnut; green; 1-2 mm length and 4 mm diameter; 114 specimens (S&G 105; WId*).

Variety 20B. Small doughnut, conjoined; green; 2-4 mm length and 4 mm diameter; 10 specimens (S&G 105; WId*).

Variety 21. Oblate; yellow; 1-2 mm length and 3-4 mm diameter; 6 specimens (S&G 106; WIb*).

Variety 22. Oblate; black, patinated; 5 mm length and 7 mm diameter; 1 specimen (S&G 14; WIb*).

Variety 23. Oblate; black, patinated; 6 mm length and 10 mm diameter; 1 specimen (S&G 14; WIb*).

Variety 24. Melon (13 pressed flutes); black; patinated; 7-8 mm length and 9 mm diameter; 2 specimens (S&G VIE1; WIIe*).

Shell Beads

Variety 25. Disc; 1-2 mm length and 3-4 mm diameter; 1,119 specimens.

Variety 26. Short cylinder; 2-6 mm length and 4-6 mm diameter; 988 specimens.

Variety 27. Oblate; 3 mm length and 6 mm diameter; 24 specimens.

Variety 28. Long cylinder; 7 mm length and 4 mm diameter; 8 specimens.

Variety 29. Small barrel; 7 mm length and 3 mm diameter; 2 specimens.

Variety 30. Large barrel; 8 mm length and 6 mm diameter; 1 specimen.

Variety 31. Flat square with green stone inlay (*see* Figure 3d); 9 mm length and 4 mm thick; 1 specimen.

Stone Beads

Variety 32. Disc; shale?; 2 mm length and 7 mm diameter; 3 specimens.

Bead Variety Observations

Multilayered beads with square cross sections have lengths that appear to vary according to the exterior color. Beads with a dark blue exterior (Varieties 7 through 8C) are

always short (between 3 mm and 10 mm), while those with a turquoise exterior (Varieties 5A through 6B) are usually longer (between 4 mm and 62 mm, with 88% over 10 mm). About 75% of the multilayered beads with square cross sections (Varieties 5A through 10C) have a dark core, but the core color does not appear to correlate with the outside color. When the bead is three-layered, the second layer is always thin and white. More than half of the straight beads with a light core have one or both ends modified by faceting. Those that are twisted with a light core and those with a dark core have few faceted ends.

Two of the drawn tubular beads (Varieties 9C and 10C) have a "stripe" along one edge. These are the result of glass from the interior being exposed along one edge when the tube was drawn. In both cases, the stripe likely represents the seam where the ends of the exterior layer of glass, applied as a slab, did not completely meet when it was marvered onto the main gather.

Chevron beads (Varieties 14 through 18) have a star pattern visible at the ends that was achieved by the use of molds during the layering process. Except for Variety 14, which is an unaltered tube segment, they have been ground to form either truncated bicones (40%) or double chamfered cylinders (60%). They are faceted on six sides with the exception of Variety 17 which is faceted on four sides. All have seven layers except Variety 14, which has six. The outer layer is almost always dark blue; the exceptions are Varieties 14 and 18 which are cased in colorless or light blue glass. The inner layers of most of the chevron beads (Varieties 15A-15B and 18) exhibit 12 teeth. Three others (Varieties 16A-16C) have 18 teeth on the outer white layer and 12 teeth on all other inner layers. Variety 17 has 10 teeth on the outer white layer and 12 teeth on all other inner layers, while Variety 14 is unique in having 10 teeth.

The wound beads are not very varied with small doughnut-shaped green beads (Varieties 20A-20B) predominating. These are conjoined in ten cases, probably as a result of their touching during the production process.

The shell beads vary in shape and size. Nearly all are discs, cylinders, or barrel-shaped, with round cross sections. The exception (Variety 31), which is carved and inlaid, is almost certainly a Moche bead dating sometime between A.D. 100 and 800–centuries earlier than the other beads in the sample.

BURIAL ASSOCIATIONS

The position of the beads in the graves sometimes indicated how they had been strung; the perforations of the beads remained aligned and the beads still encircled the neck and/or wrists. With the exception of Burial 3, it was possible to determine the original location of most of the beads in each burial. Some beads were displaced because the stringing material had decomposed and the burial had shifted due to decomposition. These are included in the bead inventory for each burial, but are referred to as having "No Position." It is possible that some of these represent scattered offerings of unstrung beads.

Burial 1

This burial (field no. A2-T5) was an infant between 10 and 18 months of age, lying on its back in an extended position (Plates IVB-IVC; Figure 3a). A rectangular shell object was near the neck (Figure 3a, b), a bone tube rested on the left shoulder (Figure 3a, c), and small pieces of oxidized iron were present near the center of the chest (Figure 3a). Beads (370 specimens) were found at various points in the grave (Table 1). There were only four beads in the neck area: three small shell beads and one glass bead–the largest chevron bead in the sample (Variety 16C). These may have been strung as a necklace, along with the rectangular shell object.

The right wrist (Plate IVD) was surrounded by beads extending from the wrist midway to the elbow, including 39 shell beads, one of which was elaborately carved (Variety 31; Figure 3d). Most of the beads were glass, however, and included both single-layered and multilayered drawn beads, all three of the drawn green-glass beads (Variety 2), and a unique chevron bead (Variety 14). Wound beads were green (Varieties 20A and 20B), yellow (Variety 21), and black (Variety 22).

The left wrist (Plate VA) exhibited approximately the same number of beads as the right wrist, and the beads were divided about equally between glass and shell. There were fewer unique and unusual glass beads than on the right wrist. All of the drawn glass beads at the left wrist were short and dark blue, and all of the small wound beads were green. The wound beads found at the wrists of this burial constitute nearly half of all the wound beads in the collection. There were a few shell beads at the ankles but no glass beads.

Burial 2

Burial 2 (field no. A2-T6) was an adolescent between 11 and 13 years of age, lying on its back in an extended position (Plate IVB; Figure 4a). The individual had a copper ring around the fourth finger of the right hand (Figure 4b). A total of 784 beads were found in association with the burial (Table 2).

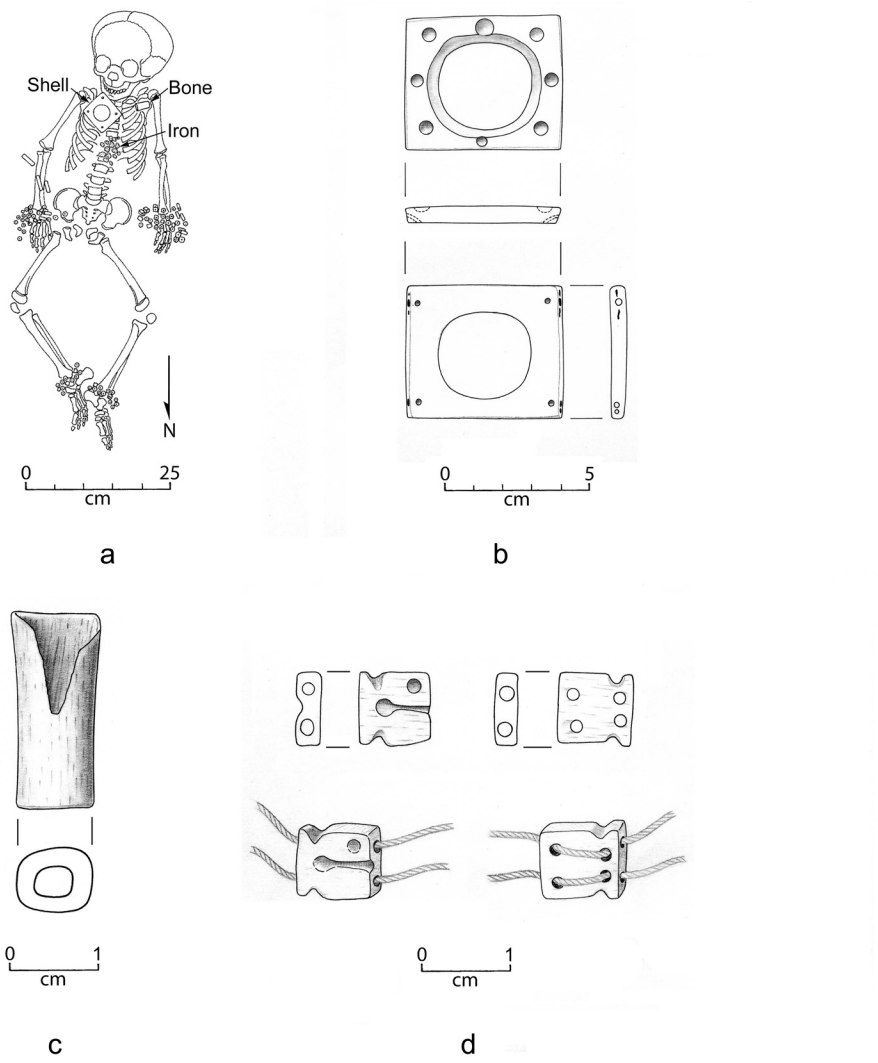

Figure 3. Burial 1: a, burial plan; b, shell object; c, bone tube; d, carved shell bead (all drawings: Jorge Gamboa).

The neck was adorned with a double strand of tubular glass beads, most of which were turquoise (Plate IVB). At the front of the neck was a small cluster of pink shell beads. Encircling the right wrist were 19 rows of beads consisting of 50 tubular glass beads and 513 shell beads. At the left wrist were numerous drawn tubular beads combined with shell beads. There were only a few shell beads at the ankles.

Burial 3

This burial (field no. A2-T7) was an infant, between 6 and 8 months old, lying in a fetal position (Plate IVB). Other than 49 beads (Table 3), there were no associated objects. Because the body was small and tightly flexed it was not possible to determine the original placement of the beads, but the largest concentration appeared to be in the neck area. The beads were more homogeneous in this burial than in the other four; all the beads were glass and all were drawn tubular varieties.

Burial 4

Burial 4 (field no. A2-T8) was a male between 35 and 45 years of age, sitting in a tightly flexed position (Figure 5a). He was buried with four copper tweezers (Figure 5b) and two ceramic vessels (Figure 5c, d). The copper tweezers were found in the area of the neck and chest, but it was not possible to determine if they comprised part of a necklace. Table 4 identifies the associated 1,597 beads.

Most of the beads at the individual's neck were glass, including 162 chevron beads, 74 drawn tubular beads, and

Table 1. Burial 1 Bead Inventory.

Material	Variety	Neck	R Wrist	L Wrist	Ankles	No Position	Total
Glass	2		3				3
	3A		2	6			8
	4A		8				8
	4B		3	8		1	12
	4C		1				1
	5A		1				1
	6A		7			2	9
	8A		22	38			60
	10A		5				5
	14		1				1
	16A		4				4
	16C	1					1
	20A		29	19		66	114
	20B		3			7	10
	21		6				6
	22		1				1
	Total	**1**	**96**	**71**	**0**	**76**	**244**
Shell	25		14	31	11		56
	26	3	19	33		4	59
	27		4	4			8
	29		1				1
	30					1	1
	31		1				1
	Total	**3**	**39**	**68**	**11**	**5**	**126**
Total Beads		**4**	**135**	**139**	**11**	**81**	**370**

two wound beads. These included all three of the drawn beads modified by heat rounding (Varieties 13 and 19), the only two colorless drawn beads (Variety 1), one accidentally striped drawn bead (Variety 10C), and one of the two striped chevron beads (Variety 18). Only two shell beads were found in the neck area.

At the right wrist were 208 shell beads but none of glass. At the left wrist were 482 shell beads and 26 drawn glass beads. There were no beads at the ankles.

Burial 5

This burial (field no. A2-T9) was an adolescent between 11 and 13 years of age, seated in a tightly flexed position (Figure 6a). The individual was buried with a pair of silver tweezers (Figure 6b) and a ceramic vessel (Figure 6c), as well as 117 beads (Table 5).

At the neck were the remains of six strands of beads: 76 drawn tubular beads, two chevron beads including the only square-sectioned specimen (Variety 17), three wound

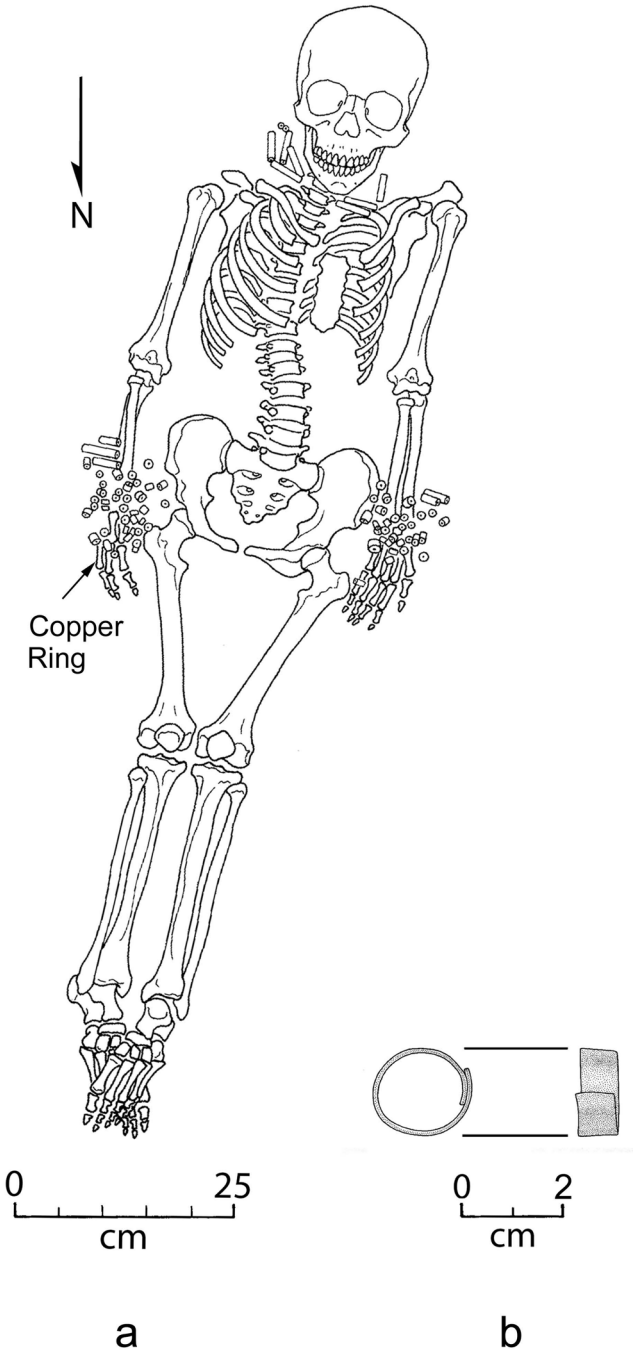

Figure 4. Burial 2: a, burial plan; b, copper ring.

beads, two shell beads, and the only three stone beads in the sample (Variety 32). One tubular glass bead (Variety 12) was deliberately striped. Another (Variety 11) was unique in having a reddish brown exterior, and a third (Variety 9C) was accidentally striped. The silver tweezers found in the area of the neck appear to have served as a central pendant on the necklace. The only two wound beads with flutes (Variety 24) were found adjacent to the tweezers and appear to have flanked it on the necklace.

The right wrist exhibited no beads and there were only 6 shell beads at the left wrist. There were 13 shell beads at the ankles but no glass beads.

BEAD PLACEMENT AND COMBINATIONS

There is no evidence that any of the beads in the burials were sewn to garments, bags, or headdresses. All appear to have been strung as necklaces, bracelets, and anklets. In considering the areas of the body where beads were placed and the way in which beads of different materials were combined, it should be kept in mind that the location of 840 beads (29% of the collection) could not be determined. Of the remaining sample, 912 (31%) were at the right wrist, 765 (26%) were at the left wrist, 364 (12%) were at the neck, and only 36 (0.1%) were at the ankles. This would suggest that the wrists were the most important locations for beads. At the wrists, however, 85% of the beads were shell, 16% were glass, and there were no stone beads, while at the neck 94% of the beads were glass, 5% were shell, and less than 1% were stone. At the ankles 100% of the beads were shell. Since the highest frequency of glass beads was at the neck, one could argue that it was the most important location for embellishment, followed by the wrists and then the ankles.

Only Burial 1 had more glass beads at the wrists than at the neck, but the beads at the wrists were predominantly shell and included almost 65% of the total shell beads in the collection. Only at the right wrist were the beads primarily glass (69%).

There is no evidence that the beads at the right and left wrists were intended to create similar bracelets. Burial 1 had almost the same number of beads on the right and left wrists, but those on the right wrist were predominantly glass, while those on the left wrist were primarily shell. Burial 2 had more than five times as many beads at the right wrist as at the left wrist. Burial 4 had more than twice as many beads at the left wrist as at the right wrist, and only the left wrist had glass beads. Finally, Burial 5 had six beads at the left wrist but no beads at the right wrist.

The combination of glass bead varieties in the burials appears be random. In Burial 3, where it was impossible to determine bead position, the entire assemblage consisted of drawn tubular beads. In the other burials long tubular beads were often used in necklaces, but the nature of the central ornament, if any, varied. In Burial 2 the central component consisted of long tubular beads with a few pink shell beads. In Burial 5 it appears to have been silver tweezers flanked by wound beads. In Burial 1 a large chevron bead surrounded

Table 2. Burial 2 Bead Inventory.

Material	Variety	Neck	R Wrist	L Wrist	Ankles	No Position	Total
Glass	3A		3	1			4
	3B		3				3
	4A		1				1
	4B		16	4			20
	4C	5					5
	4D	1					1
	5A		1				1
	6A	13	5	1			19
	7			6			6
	8A		20				20
	9A		1	2			3
	10A	2	6				8
	15A					3	3
	16A					11	11
	Total	**21**	**56**	**14**	**0**	**14**	**105**
Shell	25	11	241	56	12	36	356
	26		272	42		6	320
	27					3	3
	Total	**11**	**513**	**98**	**12**	**45**	**679**
Total Beads		**32**	**569**	**112**	**12**	**59**	**784**

by a cluster of pink shell beads probably formed the central feature. There does not appear to have been a central feature on the necklace of Burial 4.

The beads used in bracelets also exhibited great variation. The bracelet on the right wrist of Burial 1 was the only one that combined long tubular beads, chevron beads, wound beads, and a carved shell bead. At the left wrist there were only long tubular beads, wound beads, and shell beads. In Burial 2 both wrists had long tubular glass beads combined with shell beads, but the right wrist had a total of 569 beads while the left wrist had only 112 beads. In Burial 4 only the left wrist had glass beads and in Burial 5 neither wrist had any glass beads.

With only five burials in the sample, it was not possible to determine if the age or sex of an individual correlated with the number or variety of beads. The greatest number (1,597) was found with the adult male in Burial 4, but 82% of these were shell beads which were probably considered less valuable than glass beads. This burial also had the largest number of glass beads. Of the adolescent burials, Burial 2 had a total of 784 beads while Burial 5 had only 117. Of the infant burials, Burial 1 had a total of 370 beads while Burial 3 had only 49.

DATING THE GLASS BEADS

The glass beads in the Chotuna collection are varieties that are generally attributed to the 16th century (Deagan 1987; Smith and Good 1982). Although more precise dating is difficult, there are some indications that the collection relates to the early part of the century. Chevron beads like those found at Chotuna, which usually have seven layers of glass and sharply cut facets, are generally dated between 1500 and 1590 (Smith 1983, 1987; Smith and Good

Table 3. Burial 3 Bead Inventory.

Material	Variety	Neck	R Wrist	L Wrist	Ankles	No Position	Total
Glass	3A					1	1
	3B					1	1
	4B					9	9
	4C					2	2
	5A					2	2
	6A					9	9
	7					2	2
	8B					4	4
	9A					5	5
	10A					11	11
	10B					3	3
	Total	**0**	**0**	**0**	**0**	**49**	**49**
Total Beads		**0**	**0**	**0**	**0**	**49**	**49**

1982; Smith, Graham, and Pendergast 1994:36). They are distinguishable from chevron beads made near the end of the 16th century, which tend to have only four or five layers of glass and are usually finished by heat rounding rather than faceting (Deagan 1987:65; Smith 1983:148, 1987:33; Smith and Good 1982:53; Smith, Graham, and Pendergast 1994:37).

Large drawn tubular beads which are square in cross section and composed of one or three layers of glass are thought to date between 1500 and 1560 (Deagan 1987:63; Mitchem and Leader 1988; Smith and Good 1982:10-11; Smith, Graham, and Pendergast 1994:36). After 1560, these beads appear to have been replaced by heat-rounded spherical beads. Therefore, the high frequency of large tubular beads and the extremely low frequency of spherical beads in the Chotuna collection suggests that it dates prior to 1560.

In addition, the varieties of glass beads in the Chotuna collection are nearly identical to varieties excavated at the Tatham Mound in Florida, which has been dated to between 1528 and 1539 (Mitchem and Leader 1988:55-58). The similar varieties include long tubular beads, faceted chevron beads, and various wound beads. The close similarity in glass bead varieties at these two sites strongly implies that the Chotuna beads date to the early part of the 16th century, probably between 1530 and 1560, when these beads were widely circulated by the Spaniards.

Some support for this time period is provided by the body position of the burials. For centuries prior to European contact the people on the north coast of Peru customarily buried their dead in a tightly flexed seated position. But soon after their arrival in 1532, Europeans began to convert the native people to Christianity and encouraged the practice of burying individuals in an extended position, lying on their backs. One of the five Chotuna burials (Burial 3) was an infant buried in the fetal position. Two of the others (Burials 4 and 5) were in a tightly flexed seated position while the remaining two (Burials 1 and 2) were in an extended position, lying on their backs. Although this combination of flexed and extended burials possibly could have occurred at any time during the Colonial Period, it seems more likely that it occurred during the first three decades after contact, when traditional practices of the local people were still being followed alongside practices introduced by Europeans.

It is also worth noting that although each of the five burials contained glass beads, only Burials 1 and 4 contained anything else of European origin. The pieces of oxidized iron in Burial 1 (Figure 3a) are clearly the remains of an imported iron object, and one of the ceramic vessels in Burial 4 (Figure 5a, d) has distinctive European features. The scarcity of European objects may be a reflection of more limited access to such goods during the first part of the 16th century than would have been the case later on.

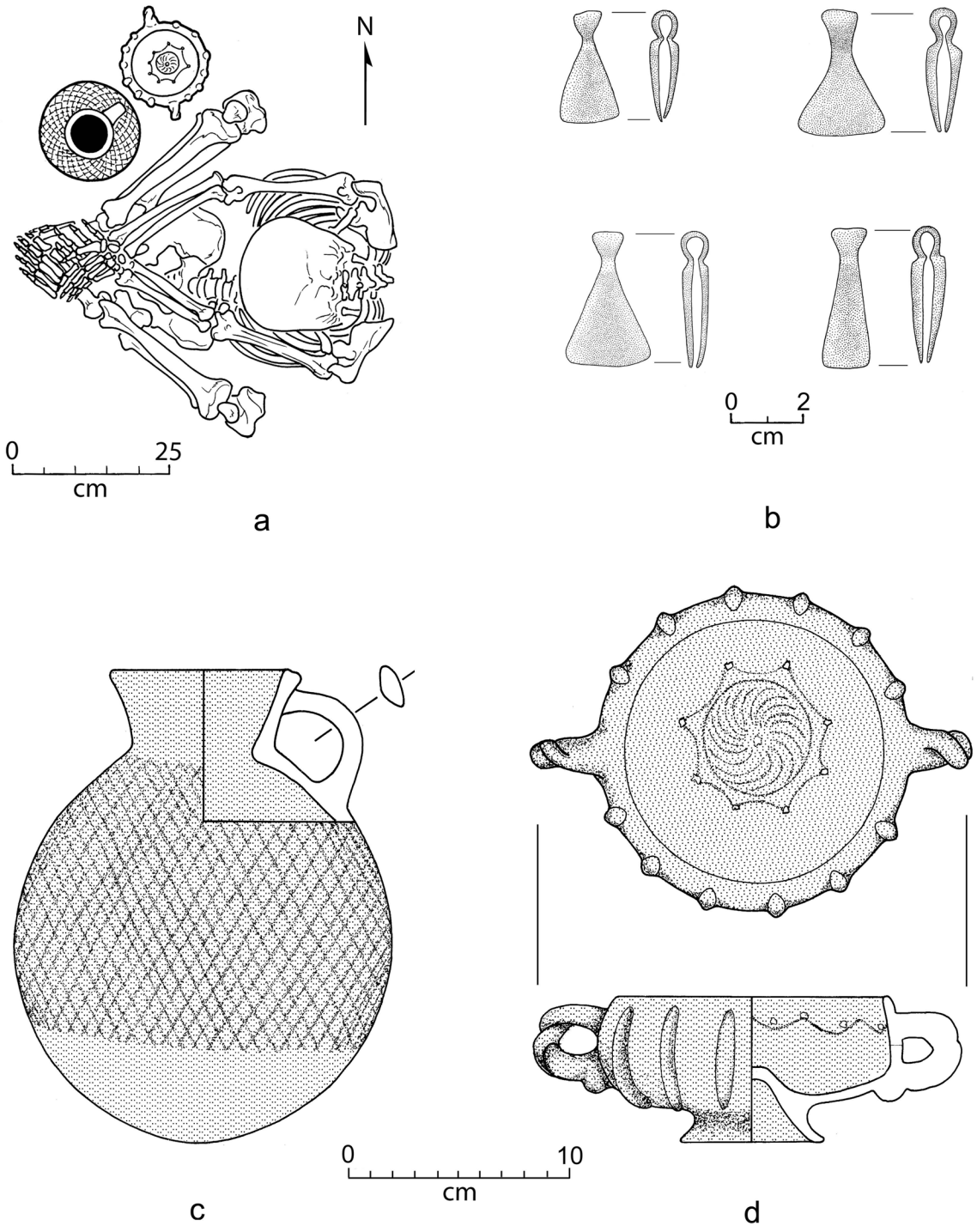

Figure 5. Burial 4: a, burial plan; b, tweezers; c-d, ceramic vessels.

CONCLUSION

The pre-Hispanic Andean custom of using beads for body ornamentation and as burial offerings clearly continued into the early part of the Colonial Period (1530-1560). During that time, the glass beads introduced by the Europeans did not replace beads made from native materials. Instead, they were used in combination with them to create necklaces, bracelets, and anklets. These ornaments were found on infants, adolescents, and adults. The stone and shell beads

Table 4. Burial 4 Bead Inventory.

Material	Variety	Neck	R Wrist	L Wrist	Ankles	No Position	Total
Glass	1	2					2
	4B	3		10			13
	4C	1					1
	5A	5					5
	6A	3		1		1	5
	6B	2					2
	7	23		8			31
	8A			1			1
	8B	11		2		4	17
	9A	8					8
	9B	1					1
	10A	14		4			18
	10B					10	10
	10C	1					1
	13	1					1
	15A	97					97
	15B	2					2
	16A	62					62
	18	1					1
	19	2					2
	Total	**239**	**0**	**26**	**0**	**15**	**280**
Shell	25	2	61	155		470	688
	26		146	315		147	608
	27			5		7	12
	28		1	7			8
	29					1	1
	Total	**2**	**208**	**482**	**0**	**625**	**1317**
Total Beads		**241**	**208**	**508**	**0**	**640**	**1597**

found at Chotuna represent the antecedents in the Andean tradition, and the association of these earlier forms with European glass beads reflects the interface between the two cultures.

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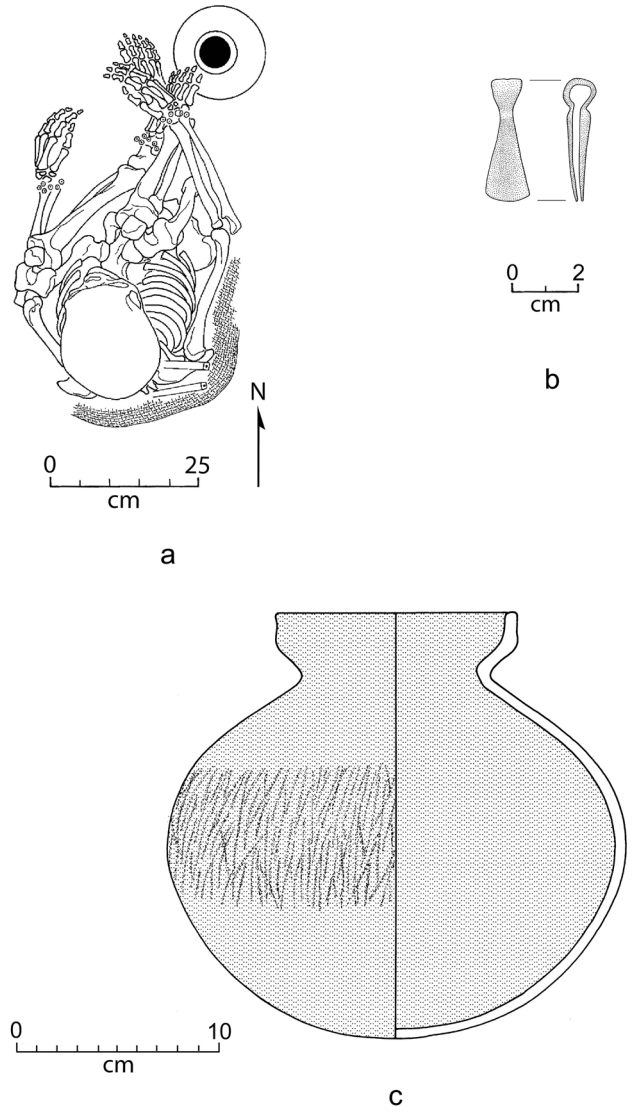

Figure 6. Burial 5: a, burial plan; b, tweezers; c, ceramic vessel.

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Table 5. Burial 5 Bead Inventory.

Material	Variety	Neck	R Wrist	L Wrist	Ankles	No Position	Total
Glass	4C	1					1
	4D	2					2
	5A	3					3
	5B	2					2
	6A	16				11	27
	6B	1					1
	8A	32					32
	8B	1					1
	8C	3					3
	9A	2					2
	9B	1					1
	9C	1					1
	10A	10					10
	11	1					1
	12	1					1
	16B	1					1
	17	1					1
	23	1					1
	24	2					2
	Total	82	0	0	0	11	93
Shell	25	2		6	11		19
	26				1		1
	27				1		1
	Total	2	0	6	13	0	21
Stone	32	3					3
	Total	3	0	0	0	0	3
Total Beads		87	0	6	13	11	117

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