CHAPTER 9: CLOTHING AND ITEMS OF PERSONAL ADORNMENT

Margan Allyn Grover

Introduction

Archaeologists recovered several thousand textile fragments and over four hundred beads and buttons during the 1997 and 1998 field seasons at Castle Hill. Of more than 152 excavated one-meter-square units, forty-five units in the workshop area were chosen for inclusion in the preliminary textile analysis. Units that contained major structural features, such as walls, were not included. Figure 9.1 illustrates the units included in the textile analysis. Beads and buttons from all units were analyzed.

Analysis of the textiles, buttons and beads contributed meaningful data to our understanding of life at Castle Hill. The research questions addressed by examining this class of artifacts are tackled at the end of this chapter. A glossary of common textile terms is provided in Appendix 9.1, and the chronology of Russian naval uniforms in Appendix 9.2.

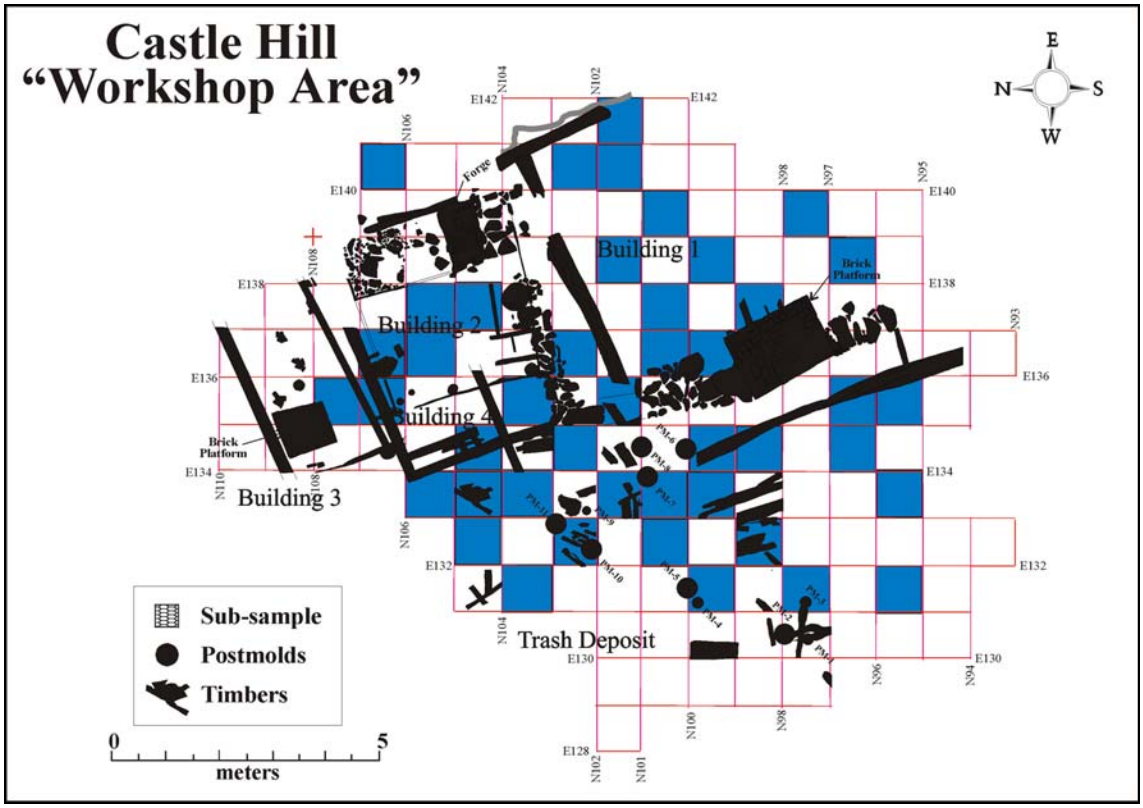

Figure 9.1. Plan map of the workshop area, showing excavation units included in the textile analysis.

Textiles

A comparison to available company records shows some consistency with the archaeological materials. Shipping manifests indicate that a wide variety of textiles were shipped to the Russian colonies in America. A close examination of the collection revealed that basic weave and fiber types were less diverse than indicated by the historic record. The

archaeological assemblage offers the first glimpse into 19th century ready-made (factory produced) clothing in Russian America.

Ready-made clothing was popular in the early 19th century. An established world trade network and the mechanization of the textile industry made these goods cheap and more easily accessible to the common person. Due to the high cost of living and the low wages of Russian-American Company workers, a supply of affordable goods was indispensable. Cost rather than supply, and function rather than availability, were important considerations for the people who lived and worked in the buildings at the base of the hill.

Background:

The wardrobe of the Russian-American craftsmen likely would have been typical of Europeans of the time. This would have included a long coat made of wool in navy blue, green or brown, with a woven belt. Linen or wool pants were tucked into boots. Shirts were undyed and unusually long, sometimes reaching as far as the knees. The costume was completed with a wool or fur cap (Middleton 1996; Pronin 1975). Layering of clothing likely would have been standard as many workers complained of the poor quality of clothing supplied to them and the damp coolness of Sitka (Khlebnikov 1976). Woolen clothing was often lined with linen.

Clothing consisted of many weaves. Russian-American Company shipping manifests indicate a wide variety of textiles. Exotic items such as silk kerchiefs and satin ribbons also were supplied to the colonies. Less variety is evidenced in the archaeological record for the site than indicated by the historical record. Plain and twill weaves, although difficult to assign to a more specific fabric type, were present. The absence of satin and silk might be because the threads quickly decay in damp conditions. The soil acidity and moisture level resulted in differential preservation of the organic materials.

Historic records document the use of China cotton, which was a plain weave cotton fabric, and a heavier buff colored plain weave fabric of Chinese cotton called nankeen. A traditional form of cotton fabric called seersucker had crinkled stripes and was a plain weave of different colors and sizes. Bengal was a plain weave fabric with checks, stripes, plaids or plain colors from Bengal, India. Calico was a cotton plain weave textile printed on one side with a variety of patterns. Crash was a coarse linen or woolen suiting made by weaving thick uneven cotton or linen yarns in a plain weave (Denny 1962; Miller 1967; Wilcox 1968).

Many twills appear in the historic record. Frieze was a twilled woolen cloth with a nap. Bombazine was either a twilled English cotton fabric or a silk fabric made in Milan or France. Camlet was made of angora wool in either plain or twill weave, and often was used for petticoats, cloaks and hoods. Ticking was a closely woven cotton fabric that was usually striped. Blankets were typically twilled or plain weave wool, of single or double construction, and were usually napped.

Textile Supply and Purchase:

Observations, supply lists and communications provide information about the clothing and textiles in Russian America. Captain Richard Cleveland, in 1799, reported that blue broadcloth, great coats, blankets, and Chinese trunks were traded for 'skins.' Beads, china crash and knives were given as presents (DeArmond 1977). Khlebnikov makes several references to clothing and fabrics. He details shipping lists that include frieze by the yard, Chinese cotton, blankets, nankeen, bombazine, velvet, demicotton, thread, seersucker, silk,

kerchiefs, satin, taffeta, wool camlet, three qualities of Bengal, Canton calico, and leather shoes (Khlebnikov 1976) (Appendix 9.3). He also observes:

> They [the Kolosh] have European clothing, some have a good deal of it, but they rarely wear it. Once in a while you will see a person change his clothes three or four times in a day. Others wear shirts. But the principle item of clothing is a cloak or mantle made out of a flannel blanket or a length of frieze about three arshins [seven feet] long; for winter time it is made of sable, fox, black bear, mink, marmot or other fur [Khlebnikov 1976:30].

Later, Khlebnikov required the company to provide students at the school in Sitka with a set of warm grey woolen clothing lined with crash, a set of summer clothing made from ticking, linen shirts, fur hats and a cap, and crash leggings. However, it is clear that European clothing styles for everyday wear symbolized a person's participation in Russian or European culture, as it was enforced among the children at the church schools and encouraged among most workers. Conversely, he outlined that each two-man baidarka was to be supplied with lavtaks from male walruses, whale gut kamlei, whale whiskers for tying and whale sinew for sewing (Khlebnikov 1976).

A letter to Baranov dated February 28, 1818 lists English goods to be accounted for, including four waistcoats, 20 pair of breeches, and four packages of buttons (Pierce 1983). This is perhaps the earliest reference to ready-made clothing in Russian-America. Another list by Khlebnikov (1976:68) cites prices paid to the Kolosh for furs:

1821 March	1 sea otter = 2 large blankets
April	1 sea otter = 2-1/2 arshins frieze
	1 sea otter = 3-1/2 arshins cloth
	3 yearling river otters = 10 arshins calico
1822 January	2 river beavers = 6-1/2 arshins cloth
March	3 black-brown bears = 3 large blankets
November	1 sea otter = 3 arshins frieze
1823/24 June	1 yearling sea otter = 1 blanket
August	1 black-brown fox = 1 blanket
	2 river otter = 10 arshins calico
	1 medium black bear = 5 arshins cloth
1825 August	2 large black bears = 2 large blankets
	4 medium black bears = 20 arshins heavy linen

*[1 arshin = 28 inches]

Between April 1821 and August 1823, the value of river otter pelts rose from a ratio of three furs for ten arshins calico to two furs for the same ten arshins calico. This implies that payments for furs during this period were made or measured in cloth goods.

The British captain, Edward Belcher, wrote in 1837 his observations of a Tlingit *toion* and his wife near Yakutat:

> Better specimens of the improved state of the Indians I have not seen. Both were clean, and well dressed; the chief by the aid of an old coat and trousers bestowed on him by Kellett; and his lady in a dark-coloured cotton gown with blue and scarlet cloak, *a la robe*, over all. He had assumed the name of Iwan Iwatsky, probably in compliment to one of the Russian traders [DeArmond 1978:139].

The cost of clothing in the colonies was of concern to all company employees. The annual salary of the promyshlenniks and other workers could not have supported the practice of having clothing tailored locally (Rickman 1990). In 1839, the Russian-American Company contracted with the Hudson's Bay Company (HBC) to supply goods they had found so hard to provide. This deal included ready-made "cotton shirts" and "quilted shirts," in addition to calico, soldiers' cloth, canvas, woolen blankets and ticking (Rickman 1990:258). After 1848, the company brought ready-made clothing from Hamburg where it was far cheaper. However, quality of this clothing was drastically worse (Federova 1973).

Worker's clothing was generally poor quality, and seldom lasted more than a few months (Rickman 1990). More durable fabrics and weaves were sought, as seen by the high ratios of woolen broadcloth and twills. Though admired and imitated by the peoples of southwestern Alaska, the Aleut and Koniag populations did not start wearing cloth garments of the Russian style as a general rule uhtil the mid-1800s. The change was seen first among the Aleuts living in the capital, Novo-Arkhangel'sk (Rickman 1990:270). Tikhmenev stated:

> For making clothes they [the Tlingit] buy from the company cotton prints, woolen blankets of various colors, red woolen cloth, and cotton kerchiefs. They buy ready-made European clothes, hardware, cast-iron kettles, mirrors, vermilion, paint, and mother-of-pearl buttons (Tikhmenev 1978:431-432).

The Textile Industry:

Although the industrial revolution was well underway by the 1820s, hand weaving of textiles continued in the villages throughout Russia into the twentieth century (Pronin 1975). Regarding the Russian-American colonies, Khlebnikov states:

> The California sheep has a heavy pelt. Missionaries make blankets for the Indians from it, but we do not use it at all. Up to 50 puds of wool is collected each year. On the basis of the California experience, Schmidt [an administrator for the RAC] wanted to make blankets, but there were no persons who could spin it into yarn, and there was no master to build a spinning wheel [Khlebnikov 1976:30].

Hand woven clothing found at Castle Hill likely immigrated to the Russian-American holdings with their owners (Federova 1973), only to have been replaced later. An example of a belt or sash, woven in the traditional Russian style, is depicted in Figure 9.2.

Rickman proposes that a Russian worker's wardrobe would have undergone a 'homogenizing process' in America, because women supplied distinguishing characteristics from a man's home region. Replacing homespun fabrics with commercial ones would have had a standardizing effect. Clothing could have been manufactured by the worker himself, by someone in the barracks, a tailor (if at a larger settlement), or by a creole or native woman whose skills were probably acquired at a church school (Rickman 1990). In addition, the wardrobes of company workers would have become homogenized because replacement clothing would have been purchased from the same sources (Rickman 1990).

Beginning in the sixteenth century, the staple English cloth was broadcloth. It was made from short, carded wool, fulled so the woven fibers were thoroughly felted (Montgomery 1984). The fabric was strong, weather resistant, and could be offered in a variety of widths, colors and patterns.

Figure 9.2. A Russian style woven wool belt or sash.

Major cotton producing areas in the 19th and 20th centuries were in the southern part of North America, the northern part of South America, North Africa, India, China, and South Russia (Miller 1967). Versatile strength and fineness of the fibers allowed for a wide variety of fabrics. By 1796, cotton weaving using power looms was Scotland's largest industry. In the linen industry, power looms were first used about 1810 in Scotland, but were hardly in use in Ireland until after 1850. In general, silks were too delicate to be woven on the power looms, and continued to be made on handlooms (English 1969).

Standard fabric widths were in place by the nineteenth century. Cotton and dress goods were 36 in. wide, wool dress goods and coatings were 54 in. wide, wool suitings were 56 in. to 58 in. wide, and furnishing fabrics were 48 in. to 50 in. wide (Miller 1967:78).

By the 20th century, the main wool producing countries were Australia, New Zealand, South Africa, South America, India, China, Russia, the United States, the United Kingdom and Canada (Miller 1967:29). Wool acted as an insulating medium preventing the escape of body heat and also absorbed excess moisture.

Methods:

Textile fragments were carefully washed in water to remove dirt, then dried. A database was created to record weave, size of the fragment, fiber type, and distinguishing characteristics. Weave types included plain weave, several types of twills, felted, and various knits. Characteristics noted included dye remnants, surface felting, wear, mending and the presence of stitching or buttonholes. The majority of fragments were too incomplete to determine their specific function. Determining the fiber type was a problem because many of the textile pieces were too degraded for conclusive microscopic determinations. Basic properties were used to

distinguish between plant and animal fibers. The presence of felting primarily determined fiber type for many of the specimens.

A total of 947 textile specimens from 45 units were analyzed (Table 1). Of these, 68.2% of fragments were of a plain weave, 15.7% a twill, 5.2% were felted, 7.2% were knit, and 3.6% were too deteriorated to identify. Although the number of plain weave fragments was high, comparison by total size showed a closer relationship with twilled specimens. When weave types were calculated by size, plain weave accounted for only 48.8%, felted specimens 23.2%, twills 19.6%, knits 7.7%, and only 0.7% unidentifiable. Several large fragments of felted upholstery lining were recovered (329.75 sq. in. and 247.5 sq. in.) and may have skewed these results. For a discussion of a specimen made with ground twining, see the "Raven's Tail Robe Fragment" section.

Typically, knitted and felted garments included hats, gloves, stockings or socks, and blankets. A sock was the only complete ready-made clothing item recovered at Castle Hill. It is knit in the stocking knit style, and made by machine. The heel of this item was finished by hand.

Shirts, jackets and pants were commonly made from plain and twill weaves. These larger garments appear in larger percentages in the archaeological record. They include the breast area of a uniform jacket (Figure 9.3), mitten/glove fragments (Figure 9.4), several collars (Figure 9.5), and shoe inserts.

The chronological distribution of the textiles was examined. Seven strata were identified in the workshop area at Castle Hill. Tables 9.1 to 9.5 demonstrate how weave types were dispersed by total size (in square inches) and by quantity between the strata.

Figure 9.3. The breast area of a woolen uniform jacket.

Figure 9.4. Finger area of a woolen mitten from the workshop area.

Figure 9.5. Collar of a coarse-weave woolen jacket. Buttonhole re-enforcement fibers are believed to be flax on the basis of microscopic examination.

Table 9.1. Textile distribution by weave, quantity and area in square inches.

Weave	*Quantity*	*Percentage*	*Area (sq. in)*	*Percentage*
Plain	646	68.2%	1893.4	48.8%
Twill	149	15.7%	759.4	19.6%
Felted/fulled	49	5.2%	900.1	23.2%
Knit	68	7.2%	299.4	7.7%
Unidentified	34	3.6%	27.2	0.7%
Ground twining	1	0.1%	2.8	>0.1%
total	***947***		***3882.3***	

Table 9.2. Quantity of textile fragments by strata.
***Undisturbed Russian period strata only.**

	Plain	*Plain/Basket*	*Twill*	*Felted/Fulled*	*Knit*	*Unknown*	*Total*
Stratum IIa	376	10	59	33	47	18	***543***
Stratum IIb			0	1			***1***
Stratum IIc	13		19	2	1	4	***39***
Stratum IId	19		11	3	2		***35***
Stratum IIe	70	2	10	5	1	2	***90***
Stratum III	18		16	3	13	5	***55***
Total	***496***	***12***	***115***	***47***	***64***	***29***	***763****

Table 9.3. Textile fragments by area in square inches.
***Undisturbed Russian period strata only.**

	Plain	*Plain/Basket*	*Twill*	*Felted/Fulled*	*Knit*	*Unknown*	*Total*
Stratum IIa	1114.0	13.9	191.3	875.4	136.9	15.5	***2347***
Stratum IIb	0			9.0			***9.0***
Stratum IIc	31.0		26.4	2.0	9.5	1.3	***70.2***
Stratum IId	81.7		130.2	4.8	16.0		***232.7***
Stratum IIe	69.7	1.1	13.8	2.0	64.5	1.8	***152.9***
Stratum III	42.8	0.5	173.1	1.5	58.8	3.0	***279.7***
Total	***1339.2***	***15.5***	***534.8***	***894.7***	***285.7***	***21.6***	***3091.5****

Table 9.4. Quantity of textile fragments by strata.
***Disturbed and mixed strata only.**

	Plain	*Plain/Basket*	*Twill*	*Felted/Fulled*	*Knit*	*Unknown*	*Ground Twining*	*Total*
Stratum I	95	3	18	1	1	3	1	***122***
Stratum IIi	37		5	1	2	2		***47***
Unknown	1		1					***2***
Total	***133***	***3***	***24***	***2***	***3***	***5***	***1***	***171****

Table 9.5.Textiles by area in square inches.
***Disturbed and mixed strata only.**

	Plain	*Plain/Basket*	*Twill*	*Felted/Fulled*	*Knit*	*Unknown*	*Ground Twining*	*Total*
Stratum I	3567.1	26.8	22.9	0.5	1.5	2.0	2.8	***3623.6***
Stratum IIi	98.0		96.8	6.0	1.8	3.8		***206.4***
Unknown	1		9.3					***10.3***
Total	***3666.1***	***26.8***	***129.0***	***6.5***	***3.3***	***5.8***	***2.8***	***3840.3****

Stratum I consisted largely of brown loam and gravel disturbed by trail construction and other activities. In some areas of the site, Stratum I also included sod and a gardening or till zone. Stratum Iii consisted of organic midden deposits and structural deposits that were undisturbed but could not be attributed to a specific feature. Strata I and IIi are included in Tables 9.1 and 9.2, but provide little information about the stratigraphy of the site or artifact distributions.

Stratum IIa was a midden deposit high in organic content, including wood chips, scrap, and trash. Of the undisturbed deposits, this stratum had the highest quantity and size in square inches of the various weaves. The slightly raised soil acidity, along with the moisture content, in this stratum may have enhanced the preservation of fabrics. The increased numbers may also be due to the intentional discard of clothing and textile fragments in the deposit.

Stratum IIb contained one felted textile fragment measuring 9 in^2. This stratum included structural remains and footings from Building 4, as well as deposits and fills associated with that building. Few artifact of any class were recovered from this layer, which was thin and restricted spatially.

Stratum IIc included the structural remains and footings from Building 3. The fill was brick, clay and mortar on the workshop floor. This stratum was comprised of intact Russian era deposits. Textiles from this layer were characterized by a small quantity of twills, as calculated on the basis of size. There were no disparities in the quantity and size of other classes of textiles in this layer.

Stratum IId contained no major disparities in the quantity and total size in square inches. This stratum included the floor and fills from Building 2, and consisted primarily of wood chips underlying the mortar and brick.

Stratum IIe included Building 1 floor and fill. This stratum produced five felted fragments that totaled only2 in^2. This contrasts with other strata, in which the felted fragments tended to be larger. The sock (Figure 9.6) was the only large knit piece from this stratum (64.5 in^2).

Stratum III, the last, was a beach gravel or gravel substrate that contained turbated artifacts. There were only three small felted fragments in this layer that totaled 1.5 in^2.

The Raven's Tail Robe Fragment:

One textile from the site that is without doubt of local origin is the Raven's Tail Robe fragment. These robes are believed to have gone out of use by the 1820s, when they were replaced with the more widely known Chilkat Blanket. The patterns and weaving techniques are similar to that used in basketry. Traditionally, the robes were woven from mountain goat wool combined with twisted cedar bark. The designs consisted of a border with longitudinal stripes in a herring bone pattern that surrounded a white field. This style was named "Ye'il Koowu" – the Raven's Tail – because it bore a resemblance to the vanes of the tail feathers of the raven (Samuel 1987; Henrikson 1992).

When compared to the later Chilkat Dancing Blanket, several differences are apparent. The Raven's Tail Robe is rectangular in shape with black and white geometric patterns. Thick, long tassels hang pendant from the central design. The Chilkat Dancing Blanket has five sides with black yellow, white and blue curvilinear designs of totemic design (Samuel 1987; Henrikson 1992).

Figure 9.6. Woolen "ready made" sock from Building 1.

Both styles use mountain goat wool for the weft strands. The Chilkat blanket, however, incorporates yellow cedar bark in the warps. The Raven's Tail uses as many as nine variations of two- and three-strand twining. The Chilkat blanket uses only three variations. Whereas the Raven's Tail is worked from top to bottom in individual rows from left to right, the Chilkat blanket is worked in small design areas (Samuel 1987). Some Raven's Tail Robes exhibit units of Chilkat design using the yellow-green color seen in the oldest Chilkat blankets.

The Tlingit, Haida and Chugach wore the Raven's Tail robe, but at ceremonies only by high ranking members of clans. At some ceremonies, the robes were cut up and the pieces given away. They occasionally were placed in the graves of important people and they were sometimes traded to European and American sailors who visited the coast (Henrikson 1992). The Castle Hill fragment may have been a piece of a robe that was cut up and distributed.

Until the discovery of the fragment at Castle Hill, only eleven examples of this robe were known to exist. Six of these are located in Europe and five are located in North America. No examples remained in Alaska, the heart of this weaving art, although all were found or collected there (Samuel 1987; Henrikson 1992). Sometimes called the "Concentric Style," robes with a

geometrically patterned border and rows of concentric design units are even less common. Only six examples are known of this type and the Castle Hill fragment may increase the total to seven (Samuel 1986).

The Castle Hill fragment contains black geometric patterns, the "one within another" and the tattoo patterns, with a combined zigzag and bars edge treatment, all on a white background. The bar or "*the cross piece of the fish drying frame, on which rest the small rods which carry the split fish*" (*tleikatan* or *tleiueidei katan*) element is a continuous line that sometimes runs parallel to others (Emmons 1903:269; Samuel 1987:21). This design was used as a line of separation or on borders, as with the Castle Hill specimen. This is combined with the zigzag or "*the peculiar flake-like appearance of the flesh of a fish cut along the line of the greater axis*" (*xaat x'uxu*) (Emmons 1903:267; Samuel 1987:20). If the robe that the Castle Hill fragment was part of followed the pattern set forth by other "Concentric designs" robes, the border was comprised of diagonal lines with vertical bars (the zigzag and lines extant in this piece) across the top and bottom. Along the sides would have been multiple diagonal lines on a white background. These would have been constructed using two-strand twining and spiral weft techniques respectively (Samuel 1986).

On the central design field is the "*one within another*" (*woosh kinaadei adi*), which may have been based on the piling of one chest on top of another (Emmons 1903:276; Samuel 1987:23). Elements of the "*tattoo pattern*" (*kaa jikool kajoolani*), literally meaning "*old-person-hand-back-of-tattooed,*" representing the Tlingit custom of tattooing, were also recovered. This was the mark of rank or position, and was not often used by common people (Emmons 1903:273; Samuel 1987:23).

An unidentified fur was attached to the upper edge, near the edge treatment, of the Castle Hill specimen. Thin strips of sea otter or winter marten were sometimes wrapped around the heading cord to finish the upper edge on known examples. Although splashes of blue and yellow were occasionally utilized to highlight designs, none were observed on this specimen (Samuel 1987).

The largest fragment (Figure 9.7) was recovered from the historic midden deposit (stratum IIa). A smaller piece was recovered from disturbed deposits eight meters north of the larger piece. Both pieces are believed to have come from the same robe. The fiber condition, and weaving technique support this.

A second, smaller fragment of the raven's tail robe with ground twining was found during collection cataloging. The larger specimen, undergoing conservation, was not available for measurement at the time of analysis. The larger Castle Hill fragment is currently at the Alaska State Museum in Juneau. Its unveiling in the winter of 1998-1999 was attended by hundreds of traditional artists. Cheryl Samuel, author and teacher of Tlingit weaving, examined the fragment. Her findings indicate that this fragment may be earlier than other known specimens (Henrikson personal communication 1999).[1]

Ravens tail weaving is being reintroduced into northern Northwest Coast native ceremonial life. Because of this increasing popularity, the recovery of the Castle Hill fragment provides contemporary weavers an opportunity to see and touch history. As new designs, colors

[1] Editor's note: Design elements of the Castle Hill specimen are essentially identical to those on the Raven's Tail robe worn by Chief Katlian near Castle Hill in an 1818 watercolor by the Russian artist Tikanov. This has implications for clan association.

Figure 9.7. Fragment of a raven's tail robe from the workshop area.

and materials are added to this craft, the existence of an example in Alaska becomes more important.[2]

Beads

The bead collection at Castle Hill is relatively small, yet diverse. The beads provide information about trade practices, consumer preferences and site chronology. Fashion and culture prescribed that Russians traditionally decorated their clothing with embroidery (Pronin 1975). Beads were common, however, on women's shoes, purses and accessories.

Background:

The Russian-American Company presumably supplied most beads at Castle Hill, either from Russian or Chinese sources. A glass factory outside Irkutsk, Russia, began manufacturing beads around 1785 and supplied the Golikov-Shelikov Company (Farris 1992; Ross 1997). Later, manufactured goods were provided to the RAC by the Hudson's Bay Company, but the types and quantities of goods is absent from archival records of the RAC and HBC (Ross 1997).

Chinese beads, typically opaque and spheroid wound beads (Ross 1997), would have been traded to the Russians at Canton or Khiatka, then brought to Alaska. Differentiation of Chinese beads from others is not made in this report because it requires a familiarity with Chinese glass and manufacturing techniques.

Cornelaine d'Aleppo bead varieties have the most potential for dating sites in Alaska. Green- and brown-lined red forms preceded the white-lined red forms (Ketz 1983: 13). Oswalt states that the earliest red on white center (white-lined red) forms are from the Russian period deposits at Kolmakovskiy Redoubt (1847-1866)(Oswalt 1980:137-138; Ketz 1983:13). Examples, however, have also been recovered from contexts that predate Kolmakovskiy at Three

[2] Special thanks to Janice Criswell, Steve Henrikson, Cheryl Samuel and Terry Rofkar for their contributions to the recovery, examination and preservation of the Castle Hill Raven's Tail Robe fragment.

Saints Harbor on Kodiak Island (1784-1820's), the Native Alaskan Village Site at Fort Ross, and Castle Hill.

Many bead researchers address ethnicity. During the time period the Castle Hill collection spans, Russians, Creoles, Aleuts and Tlingits living in Sitka would have used beads as adornment on clothing and other personal items, although the amount varied between groups. In 1832, Khlebnikov wrote:

> *About seed beads.* Out of the six puds of beads assigned to Sitkha, five puds are supposed to go to Californis. The following colors are sent there: red, white and black; the rest of the beads, blue and white, are used for trading with the Chukchis and with the Americans in North America. The Kad'iak office needs blue, white, red and black beads for the Aleuts, and for trade with the Kenais, Chugach and other natives. Transparent coral beads, especially blue ones, of various sizes are needed. But other colors are needed besides these [Khlebnikov 1994: 206].

Methods:

All beads were recorded by material, manufacturing type, size, and distinguishing characteristics. Following the guidelines for bead typology of Kidd and Kidd, with additions suggested by Karklins, a database was created that included color, glass clarity and common names (Kidd and Kidd 1983; Karklins1985). The materials in the SIT-002 collection were glass (98.6%), plastic (1%), and bone (0.4%).

Bead Typology:

Two-hundred twenty-seven beads were recovered. Wound beads comprised 38% of the beads, drawn beads 59%, molded 1%, bone less than 1%, and unidentified specimens 2%.

Table 9.6 shows that monochrome wound beads in four shapes (tubular, round, oval and doughnut) make up a majority of all wound beads recovered. The only other wound forms were faceted (WIIc) and wound polychrome with inlaid decoration (WIIIb) better known as "skunk bead".

Drawn monochrome beads were unmodified or subjected to rounding by re-heating (Kidd and Kidd: 1983). Monochrome tube beads comprise 24% of the bead assemblage, as compared to 22% for the rounded variety. Four percent of the beads are faceted drawn tubular (n=10), also called "Russians" or "Russian blues," and 6% are polychrome layered tube (both rounded and not rounded), also known as "cornelaine d'Aleppo."

The bone bead is 11mm long, 9mm wide, roughly oval shaped, and perforated from both ends. One unidentified bead was drawn with 12 facets and can be described as a hexagonal regular faceted (XIII.C.2.e) as described by Karklins (1985:106-107). A second unidentified bead was not clearly wound or drawn. It is 8mm long, 8.5mm wide, rounded, and made from an opaque white glass. The third unidentified specimen was wound with three small clear glass beads through reheating.

The molded specimens consist of one molded glass bead with facets and two plastic beads. The glass, faceted, molded bead is hexagonal and regularly faceted (XIII.C.2.e)(Karklins 1985:106-107). One plastic molded bead is only a partial specimen and is difficult to classify. The other is a doughnut shape, 7mm long and 9mm wide.

Table 9.6. Bead distribution by type and quantity.

Bead type	*Description*	*Quantity*	*Percentage*
Ia	Monochrome tube	54	24%
If	Monochrome tube with ground facets	10	4%
IIa	Monochrome rounded tube	49	22%
III	Polychrome layered tube	5	2%
IIIf	Cornerless heptagonal faceted	2	>1%
IVa	Polychrome layered and rounded tube	13	6%
WIa	Monochrome wound tube	3	1%
WIb	Monochrome wound round	76	34%
WIc	Monochrome wound oval	3	1%
WId	Monochrome wound doughnut	1	>1%
WIIc	Monochrome wound faceted	1	>1%
WIIIb	Polychrome wound with inlaid decoration	3	1%
molded	Molded glass or plastic bead	3	1%
bone	Bone bead	1	>1%
unident.	Unidentified specimen	3	1%
	total	***227***	

Figure 9.8. Assorted beads in the Castle Hill collection.

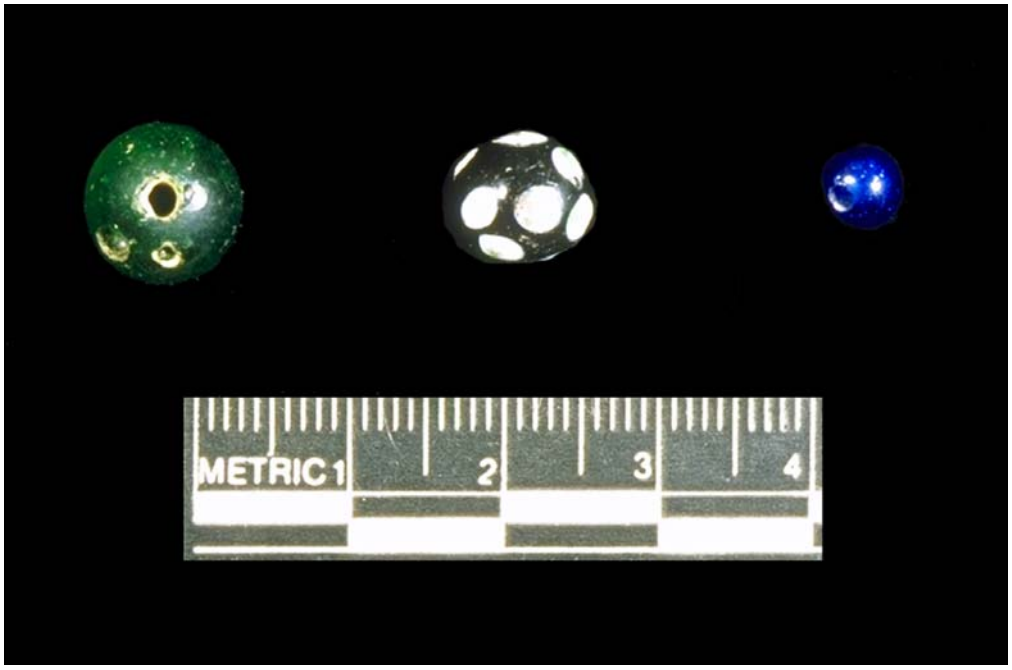

Figure 9.9. Wound and skunk beads from the Castle Hill collection.

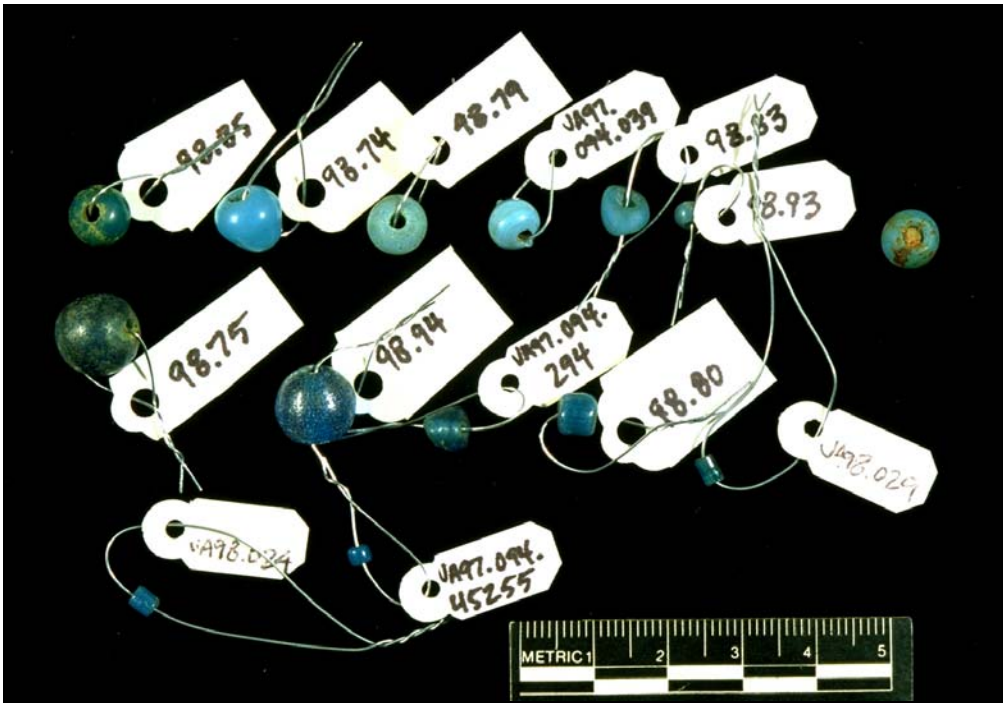

Figure 9.10. Assorted blue and blue-green wound beads from the Castle Hill collection.

Bead Distribution:

Tables 9.7 and 9.8 describe the strata and bead types found in each. Stratum I included disturbed brown loam and gravel, sod and disturbances from gardening and trail construction. Stratum IIi included the organic and midden layers, undisturbed deposits and structural materials such as degraded brick and mortar deposits. Stratum IIa was all midden deposits outside of the building structures. Stratum IIb was Building 4 construction footings and remains and all soil deposits within that building. Stratum IIc was Building 3 construction footings and remains, which consisted mainly of brick, clay and mortar on a workshop floor. This stratum is believed to have contained intact Russian-American deposits. Stratum IId included Building 2 floor and fill comprised of a wood chip layer below the mortar and brick deposits. Stratum IIe contained the intact deposits from Building 1. It was located between the base of stratum IIb and the top of stratum III. The last stratum was an almost sterile beach gravel with turbated artifacts.

Monochrome wound and drawn beads were present throughout most strata. Some bead types were found only in certain stratum, such as drawn polychrome layered tubes (cornelaine d'Aleppo), which were only found in stratum IId and the disturbed deposits (Stratum I). The counterparts to this type (polychrome layered and rounded cornelaine d'Aleppo) were found across all strata except stratum IIc.

The bone bead and all molded beads were recovered in Stratum I, as was the only IIIf faceted tube and the three WIIIb (skunk beads). The other faceted tubular bead (If) was found in the disturbed Stratum I, IIa (midden) and IIe (Building 1).

Table 9.7. Bead distribution by strata.
***Undisturbed Russian period strata only.**

	Ia	*If*	*IIa*	*IIIa*	*IIIf*	*IVa*	*WIa/b/c/d*	*WII*	*WIIIb*	*bone*	*molded*	*unident.*	*Total*
Stratum IIa	7	2	7			2	6						***24***
Stratum IIb	6		3			2	2						***13***
Stratum IIc	4		2				1						***7***
Stratum IId	2		1	2		1							***6***
Stratum IIe	1	1	11			2	8					1	***24***
Stratum III						1	3						***4***
Total	***20***	***3***	***24***	***2***	***0***	***8***	***20***	***0***	***0***	***0***	***0***	***1***	***78****

Table 9.8. Bead distribution by strata.
***Disturbed and mixed strata only.**

	Ia	*If*	*IIa*	*IIIa*	*IIIf*	*IVa*	*WIa/b/c/d*	*WII*	*WIIIb*	*bone*	*molded*	*unident.*	*Total*
Stratum I	18	7	14	3	1	4	43	1	2	1	3	3	***100***
Stratum IIi	3						3					1	***7***
Unknown	8		3			1	11		1			1	***25***
Total	***29***	***7***	***17***	***3***	***1***	***5***	***57***	***1***	***3***	***1***	***3***	***5***	***132****

**Totals may differ. Tables do not include artifacts from test units, surface collection or flotation samples.

The absence/presence of several important bead types in the Castle Hill collection have implications for dating the deposits. English, French and American Prosser molded beads, which were manufactured after 1840, are absent (Karklins 1985). This suggests that the assemblage predates this important innovation. Clear or green centered cornelaine d'Aleppo beads, popular in the late eighteenth and early nineteenth centuries, are prevalent in the Castle Hill assemblage. This type tends to predate the white centered variety, popular between 1840 and 1860 (Crowell 1997). Faceted beads comprise a very small part of the Castle Hill assemblage. The "Russian blue" beads (four found at Castle Hill) were made in Bohemia after 1820 (Crowell 1997).

The beads at Castle Hill were evenly distributed horizontally in the deposits. Stratum I, which was disturbed, yielded the most beads (n=101 of a total of 186). The historic midden (stratum IIa) had a high concentration with 21 beads and 19 buttons. Of the four buildings, building 1 (stratum IIe) had the most beads (n=22).

The bone bead and all molded beads were recovered in Stratum I, as was the only IIIf faceted tube and the three WIIIb (skunk beads). The other faceted tubular beads (If) were only found in the disturbed stratum I, IIa (midden) and IIe (Building 1). These bead types are post-1850s styles. Bead seriation suggests that Building 2 was built first, followed by Building 3, Building 1, then Building 4. Stratum III predates these buildings, and stratum IIa – the historic midden – was open for deposition later in the history of the site, possibly around the time that building 1 was occupied. The beads confirm that Stratum I was last and contained disturbed deposits.

Bead Color:

When the bead collection was divided by color, a different picture emerged. Bead colors were determined using the *Pantone Textile Color Guide* under fluorescent light. All beads were lightly moistened to eliminate the discoloration that occurs as the glass degrades (causing a light frosted effect). Beads were combined into general color groups (Table 9.9).

White was the dominant color in the Castle Hill bead collection, comprising 36% of the total. Blue was the second most common color (31%). Red beads and polychrome beads (which included drawn polychrome layered beads and wound polychromes with inlaid decoration) each were 10 percent of the collection. Eight percent of the beads were green and 2% were yellow. Two other colors – peony and firewater – were represented by plastic beads and were singular occurrences from the disturbed strata of the site. The bone bead is also separated in Table 9.9.

In other collections from Russian American sites, prevalent bead colors were white and blue. Some authors have attributed this to preferential selection by the sites' occupants (Ketz 1983: Ross 1997), while others have argued these were less valued colors (Hilsinger 2001: personal communication). The premise for the latter is that beads of less valued colors were less likely to be searched for or retrieved when lost. They were less rare and hence more easily and cheaply replaced.

Differential recovery rates are important in bead research and analysis. Excavated material from the site was screened using ¼ inch mesh. Because many beads are smaller than ¼ inch, their collection cannot be assured. To address this potential sampling problem, 53 bulk soil samples in 1997 and 211 in 1998 were taken from undisturbed deposits. All were processed by water flotation to separate heavy from light fractions,

Table 9.9. Bead color categories and equivalents.

Major color	*Minor color (Pantone)*	*Pantone color code*	*Quantity*	*Percent*
Blue	Light clear blue	15-4715	**69**	**31%**
	Seaport	19-4342		
	Royal blue	19-3955		
	Dark blue	19-4035		
	Algiers blue	17-4728		
	Parisian blue	18-4036		
	Harbor blue	18-4728		
	Midnight navy	19-4110		
Red	True red	19-1664	**23**	**10%**
	Red ochre	18-1442		
	Desert rose	17-1927		
Green	Amazon	18-6042	**19**	**8%**
	Bay leaf	17-5122		
	Vivid green	17-5638		
	Cadmium green	18-5424		
Yellow	Old gold	15-0955	**4**	**2%**
	Primrose yellow	13-0755		
	Butterscotch	15-1147		
Peony	Peony	15-1816	**1**	**>1%**
Firewater	Firewater (neon chart)	16-1664	**1**	**>1%**
White	White	11-0701	**80**	**36%**
	Clear	n/a		
Polychrome		n/a	**22**	**10%**
Black	Black	19-0303	**7**	**3%**
		total	*227*	

then screened through 500μm mesh and sorted as control samples. Seventeen beads were recovered; nine blue, three white, two red, two black, and one green. All were drawn, monochrome, tubular, small to very small glass beads. These beads were found in eight separate 1m x 1m units, although eight were from a single unit. The controls suggest that the recovery rate during excavation was very good.

Buttons

The buttons recovered at Castle Hill are types associated with basic and easily maintained clothing. The 218 buttons include a preponderance of types from uniform jackets and shirts, as well as Prosser style white glass molded buttons. The latter were commonly found on ready-made (factory) shirts, vests and pants.

Background:

The supply of buttons and beads was probably of little concern Russian workers, as ready-made clothing included fasteners other than buttons with lower replacement costs. In the early nineteenth century, buttons were commonly found on jackets, vests and uniforms. Russian-American Company workers were not required to wear uniforms (Rickman 1990), nor were they supplied. Button references in Russian-American Company documents are rare, as they were generally addressed as part of a garment.

Methods:

The analysis of buttons included identification by manufacturing type, material, size, and distinguishing characteristics. Material categories included white glass, copper or brass, white metal, leather, plastic, antler or bone, wood, rubber, black glass, and all other glass (Table 9.10).

The excavations produced 218 buttons. Copper and brass examples comprise a majority of the collection (44%) This class includes a variety of button types and styles. The collection also includes a large quantity of white ceramic (23%), Prosser style, four hole, molded buttons. This singular button style dominates the collection. Button types are described individually. Due to the variety of styles and materials within each of the material classes, the discussion focuses on features that are diagnostic.

Table 9.10. Button material.

Button material	***Quantity***	***Percentage***
Copper/brass	96	44%
Ceramic	51	23%
Antler/bone	5	2%
Wood	8	4%
Plastic	14	6%
Metal	11	5%
Leather	3	1%
Glass	24	11%
Metal, iron	3	1%
Rubber	2	1%
Composite	1	.5%
total	***218***	

Button Typology:

Glass:

Glass buttons were broadly grouped into clear or colored glass and black glass. Black buttons were popular during the nineteenth century (Luscomb 1991). Glass buttons are difficult to date precisely because popular styles and decorations (called "stock patterns") were sometimes produced over long periods of time and influenced by consumer demand.

Clear buttons are of transparent uncolored glass. Colored glass buttons include transparent, translucent, and opaque examples in a variety of colors and shades. Two "crackle" buttons were found in the assemblage. Although made by a sixteenth century technique, these were popular in the nineteenth and early twentieth centuries. While the glass was still hot, the button was plunged in and out of cold water, causing the center surface to contract and break into an intricate crackled pattern (Luscomb 1991). Those in the Castle Hill collection were made mostly of clear glass, ball shaped, with thin wire shanks.

A single coronet was recovered, comprised of a preformed piece of glass fused to a small berry-shaped top. The white glass body is 1.7 cm in diameter and (with the blue glass application) 1.0 cm thick. The Castle Hill assemblage includes four white glass buttons with inlaid green and red ribbons, reminiscent of the millefiorri manufacturing technique. The back has two small parallel channels where a wire attachment would have been threaded. All measure 1.1 cm in diameter and 0.5 cm thick.

The collection contains several faceted glass buttons, including two black faceted examples popular beginning in the late nineteenth century. These have diameters of 1.3 cm and 2.8 cm with thicknesses of 0.7 cm and 0.8 cm, respectively.

Ceramic:

Prosser buttons first were manufactured in 1840, when Richard Prosser was granted a British patent for the invention of a new button manufacturing technique. This process involved compressing dry ceramic powders in a metallic mold. In 1841, his brother acquired an American patent for the same process. The development of a similar process by others drove the brothers out of business, but the buttons still bear their name. These buttons were used mainly on underwear, workshirts and other plain garments (Holder Blee 1986; Karklins 1985). Fifty-one white glass buttons made by the Prosser technique were recovered at Castle Hill. Forty-nine have four holes and range between 1.75 cm and 0.85 cm in diameter and are 0.5 cm to 0.2 cm thick. One three-hole Prosser button was found that has a diameter of 0.8 cm and is 0.25 cm thick. One two-hole example was also recovered that is 1.6 cm in diameter and 0.5 cm thick.

Brass or copper military:

Several varieties of brass or copper military buttons were recovered at Castle Hill. Five buttons with an anchor on the front are believed to be Russian military buttons (Figure 9.11). Russian naval personnel wore buttons with plain anchors, while the Guard's Ekipazh wore buttons with double-headed eagles on crossed anchors. These button types were used on naval greatcoats (Middleton 1996). The specimens from Castle Hill range from 1.7 cm to 2.5 cm in diameter and 0.1 to 0.3 cm in thickness. A brass button with indeterminate Cyrillic lettering is also likely a Russian military button, as is a single gilded brass button with a double-headed eagle.

Figure 9.11. Brass button from a Russian Naval jacket.

Other brass or copper:

Brass was the most common button material used after 1750. Eighteenth century brass buttons were generally large, although smaller ones were worn on the leg of breeches and sometimes on waistcoats. By the beginning of the 19th century, styles evolved into small one-piece brass buttons with loop shanks. By 1830, two-piece buttons appeared on mens' clothing. These were in style until approximately 1850 (Gillio *et al.* 1980; Luscomb 1991).

There is a clear distinction between brass buttons of the eighteenth and nineteenth centuries. Copper and tombac button manufacture ended abruptly in 1800 when manufacturers began to use a new brass alloy composition (Luscomb 1991). The designs became much simpler, and the shanks lighter and more delicate.

A brass button marked with the letters "P L A Q U E P A _ L" around the margin of the face was recovered at Castle Hill. This button is 1.7 cm in diameter and 0.13 cm thick. The collection also includes a cast, wedge-shanked brass button 3.1 cm in diameter and 0.1 cm thick. Two brass buttons marked "BEST QUALITY" with loop shanks, 1.2 cm in diameter by 0.15 cm thick, were recovered. A brass button with a crown design and indeterminate lettering around the margins and a loop shank measures 1.85 cm in diameter by 0.15 cm thick.

The collection includes a brass button marked "STANDARD * TREBLE GILT" with no visible attachment, measuring 2.2 cm in diameter by 0.3 cm thick. Another button, marked "SCOVILL CO. WATERBURY," measures 1.45 cm in diameter by 0.2 cm thick. This style was manufactured in the United States by Scovill Manufacturing Company after 1850.

Work-clothes buttons were sometimes called overall buttons, although they never were worn on overalls. These buttons are comprised of brass faces and loose wire shanks. Typically, garment maker names, slogans, and designs are found on this style. They were made and used in large quantities in the United States beginning late in the nineteenth century. Two work-clothes buttons marked "TOWERS WIRE FASTENERS" were recovered at Castle Hill. These three-piece specimens with loose wire-type shanks measure 2.3 cm in diameter by 0.1 cm thick.

According to Middleton, several of the brass button styles recovered at Castle Hill are also in the Fort Ross Cemetery Project collection. One of these is a small button with a design of simple circles around the edge of the flat face, and a loop shank attachment. It measures 2 cm in diameter. At the "Native Alaskan Neighborhood" adjacent to Fort Ross, this type was found in association with green frieze cloth from coats or jackets. The other is a plain flat-faced button with a loop shank attachment. This style was also found associated with green frieze (Middleton 1996).

Phoenix buttons:

Phoenix buttons are known from archaeological sites that date from the 1830s in the Pacific Northwest. Accounts indicate that the buttons were produced for King Christophe I, who ruled in Haiti from 1811 to 1820. He ordered the buttons to be made for troop uniforms in three styles. Sprague (1997) researched the origins and distribution of phoenix buttons, and believes them to have been made by Bushby of London. When Christophe committed suicide in 1820, the buttons became surplus and were traded to Hawaii, up the coast of California and then to a trading post on Sauvies Island near modern-day Portland, Oregon around 1830 (Sprague 1997:56).

Phoenix buttons bear the motto *Renais de Mes Cendres* ("I am reborn from my ashes") encircling a Phoenix with spread wings over a nest of fire, along with the regiment number (Strong 1975). The six buttons recovered at Castle Hill exhibit flat faces with the bird, flames,

motto and regiment numbers (Figure 9.12). All measure 1.5-1.6 cm in diameter and 0.1-.15 cm thick. Regiments were "No 4", "No 6," "No 8," and "No 9." According to Strong's typology, these are Type I -- small, flat faced with wire loop Alpha type shanks. The Castle Hill collection includes one button from each of the regiments listed above, and two others with illegible regiment numbers.

It is not known if the buttons were on uniforms or in odd lots unattached (Strong 1975:79). Examples were recovered from the Fort Ross excavations in California (Glenn Farris, personal communication). The Castle Hill phoenix buttons are the only known examples from Alaska or north of the Columbia River (Sprague, personal communication).

Figure 9.12. Two (of 6) Phoenix buttons from the Castle Hill workshop area.

Antler or bone:

Five buttons from Castle Hill were made from antler or bone. Two antler or bone buttons have a single hole 0.25 cm in diameter and are 1.0 cm and 1.4 cm in diameter and 0.2 cm and 0.25 cm thick respectively. Two have two holes and diameters of 1.3 cm and 2.0 cm. Both are 0.2 cm thick. The fifth antler/bone button has four non-symmetrically drilled holes, is 0.3 cm thick and has a diameter of 1.9 cm. The sew-through type antler or bone button was most common at sites predating 1850 (Gillio *et al.* 1980).

Wood:

Eighteenth century wooden buttons were generally plain, but in the nineteenth century were often decorated with metal, lacquer, or inlay of other materials (Gillio et al. 1980). The eight wooden buttons from Castle Hill are all plain. Two carved wood buttons with no visible attachment measure 1.9 cm and 1.8 cm in diameter, and 1.0 cm and 0.35 cm thick respectively.

Plastic:

The manufacture of synthetic plastic buttons increased after 1930's (Gillio *et al.* 1980). Thirteen plastic buttons were recovered at Castle Hill. Three are two-hole molded plastic and

range from 1.2 cm to 1.4 cm in diameter and from 0.2 cm to 0.35 cm thick. The ten four-hole molded plastic buttons range from 1.1 cm to 2.9 cm in diameter and 0.15 cm to 0.6 cm thick.

Leather:

Three buttons made of leather were recovered. Two have only two holes and are 1.9 cm in diameter by 0.2 cm thick and 1.8 cm in diameter by 0.4 cm thick. The other leather button has four holes and measures 2.35 cm in diameter by 0.25 cm thick.

Rubber:

Between 1849 and 1851, Nelson Goodyear patented and improved the manufacture of hard rubber. Buttons made of this material have a mark impressed on the back that reads "Goodyear Pat. 1851." When found molded into the backs of hard rubber buttons, these dates refer to the date of patent, rather than the year of manufacture (Gillio *et al.* 1980). Two examples of this button type were recovered. Both are 2.0 cm in diameter, one is 0.4 cm thick and the other is 0.35 cm thick.

A four hole United States Navy button made from hard rubber, is 3.4 cm in diameter and 0.35 cm thick. Marked "USN", this button most likely came from the uniform of an enlisted man (Albert 1976). The Goodyear mark is faintly visible on the back.

Other Metals:

Pewter buttons with wedge and wire shanks were cast in the late eighteenth and early nineteenth centuries for use on men's clothing (Gillio *et al*. 1980). Four cast metal four-hole buttons were recovered at Castle Hill that range from 1.4 cm to 4.45 cm in diameter and 0.1 cm to 0.2 cm thick. A fifth cast metal button with two or four holes is broken. Two two-piece metal buttons have no visible attachment. One is 1.55 cm in diameter and 0.25 cm thick; the other is 2.65 cm in diameter and 0.8 cm thick. One cast metal button has a box shank attachment and is 2.1cm in diameter by 0.35cm thick. A cast metal button with a loop shank is 1.3 cm in diameter by 0.15 cm thick.

Composite:

One composite button was recovered that has a wood center wrapped in plain weave wool cloth (Figure 9.13). The textile was sewn together in the rear of the button, which was then sewn onto the garment. This specimen measures 2.6 cm in diameter and 0.45 cm thick.

Button Seriation:

Both black faceted buttons date to the late 19th century and were recovered from stratum I. Two-piece brass buttons reached their height of popularity between 1830 and 1850. Three were found at Castle Hill, two in stratum I and the other in IIc (Building 3). The only button marked "Scovill Co. Waterbury" dates after 1850 and was recovered in stratum IIb (Building 4). Four of the phoenix buttons were found in stratum I, and two were from stratum IIa (historic midden). This button style probably did not reach the Northwest Coast fur trade until 1830. The rubber "Goodyear" buttons post-date 1851 and were all found in stratum I. The plastic buttons were also all recovered in disturbed stratum I.

The Prosser manufacturing technique was patented in 1840. Forty-five buttons made in this fashion were found in the disturbed strata, one in the historic midden (stratum IIa), one in Building 1 (stratum IIe), one in Building 3 (stratum IIc), and one in stratum III. Button dates

indicate that the buildings were built in a similar order to that shown by the beads, although the pattern is not as strong. Button manufacturing dates place the historic midden (stratum IIa) at no earlier than 1830. Building 4 (stratum IIb) contained buttons popular after 1850 and building 3 (stratum IIc) had buttons consistent with a date after 1830. The disturbed
stratum (I) dates to the second half of the 19th century. According to the button manufacturing dates, the building sequence begins with building 2, followed by buildings 3, 1 and 4. Stratum I was disturbed and stratum IIa, the historic sheet midden, was open for deposition later in the occupation of the site.

Figure 9.13. (a) composite button comprised of a wooden disk wrapped in woolen cloth; (b) wooden disk, probably from a composite button similar to the one on the left.

Table 9.11. Button distribution by strata and material.
***Undisturbed Russian period strata only.**

	Glass	*Ceramic*	*Copper/ Brass*	*Antler/ bone*	*Wood*	*Plastic*	*Metal, unident.*	*Metal, iron*	*Leather*	*Rubber*	*Composite*	*Total*
Stratum IIa		1	14	1	1				1			***18***
Stratum IIb	1		2	1	1							***5***
Stratum IIc		1	2		1							***4***
Stratum IId			1		1							***2***
Stratum IIe	1	1	5	2			1					***10***
Stratum III		1										***1***
Total	***2***	***4***	***24***	***4***	***4***	***0***	***1***	***0***	***1***	***0***	***0***	***40****

Table 9.12. Button distribution by strata and material.
***Disturbed and mixed strata only.**

	Glass	*Ceramic*	*Copper/ Brass*	*Antler/ bone*	*Wood*	*Plastic*	*Metal, unident.*	*Metal, iron*	*Leather*	*Rubber*	*Composite*	*Total*
Stratum I	22	35	57	1	3	11	6	2		2	1	***140***
Stratum II	1	1	3			1						***7***
Unknown		6	7				2		1	1		***18***
Total	***23***	***42***	***67***	***1***	***3***	***12***	***8***	***2***	***1***	***3***	***1***	***165****

**Totals may differ. Tables exclude buttons from test units, surface collection, and unidentified specimens.

Cockades

In October 2000, John Middleton identified two copper disks as hat cockades. These were worn on naval caps and were often silver plated (Middleton, personal communication). The first, identified as from an officer's hat, is 3.2 cm x 2.6 cm and 0.05 cm thick (Figure 9.14, a). It has two attachment points on the back and is impressed with a scalloped pattern which would have been painted with concentric lines (Figure 9.14, b). The second, identified by Middleton as that of a naval enlisted man's hat, is 3.8 cm x 2.8 cm and 0.15 cm thick (Figure 9.14, c). It has been stamped with a central oval design and has only one attachment point on the back. The latter has remnants of gold gilt covering. The officer's cockade was found north of the buildings in the disturbed deposits. The other was recovered in stratum IIi southwest of the buildings. Neither could be associated with the midden deposits or buildings, so cannot be securely dated by site stratigraphy.

Clothing Fasteners

Six styles of clothing fasteners are in the collection. The first is the female portion of a key-hole clasp. It measures 1.8 cm x 1.1 cm and was held to the garment by two tiny copper rivets. The second is a 1.2 cm diameter copper rivet. A square copper clothing loop in two parts was also recovered. It is 2.5 cm x 3.1 cm in diameter and 0.3 cm thick. The two shorter sides have small holes for the insertion of ferrous wire. Two copper hook clasps were recovered together. They are 2.0 cm long and the wire is 0.15 cm thick with an attachment loop at one end. A small copper u-shaped wire hook also was found. It has two attachment loops and a large loop to receive a hook. It is 1.7 cm x 1.4 cm in diameter, and the wire is 0.1 cm thick. Another clothing fastener is a copper, two-piece clip (Figure 9.15). It is 2.8 cm x 1.5 cm in diameter and 0.5 cm thick. A ferrous metal wire is attached to the sides of the clip and a fragment of 2/1 twill cotton or linen is preserved in the metal. This clip style would have been used to prevent a strap, such as a suspender, from slipping.

Three of the fasteners – the rivet, the loop, and the clip – were recovered from the disturbed Stratum I. Two, the hook clasps and the keyhole clasp, were found in Stratum IIi. The only fastener from Stratum IIa, the historic midden, is the u-shaped wire hook. Because no single style dominates the assemblage, and most are from disturbed context, determination of their exact age is problematic.

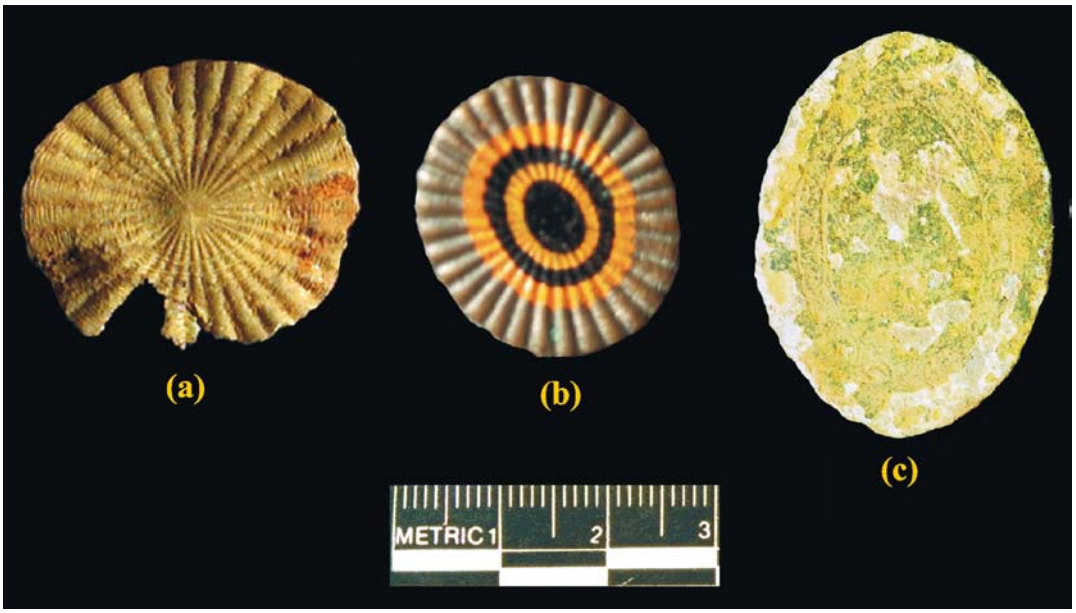

Figure 9.14. (a) Hat cockade from a Russian naval officer's uniform, Castle Hill collection; (b) officer's cockade with intact painting, John Middleton collection; (c) hat cockade from a Russian naval enlisted man's uniform, Castle Hill collection (97.21631).

Figure 9.15. Copper two-piece clothing fastener.

Shoes and Shoe Parts

Background:

The soles and heels of shoes and boots are commonly made of stiff, thick leather. The upper part that covers the instep and sometimes the ankle is usually of more pliable leather and sometimes fabric. Shoes and boots, depending on their purpose, are made with different techniques and materials.

Shoes and boots are shaped over a wooden form called a *last*. These are made today to standard measurements because certain parts of the feet have fixed proportions (Karg 1965:

Dooley 1912). Although shoe repair or mongering appears to have taken place at Castle Hill, no lasts were found.

Types of Shoe Construction:

In the nineteenth century, most shoes were sewn by hand. The lighter ones were turned while the heavier ones were welted. The turn shoe is one of the oldest methods of shoe construction. Few shoes are made using this technique today. The shoe was made wrong side out, turned right, then the heel attached. The shoe required no insole because the inverted uppers were lasted directly to the outer sole. A rectangular groove was cut around the outer edge of the sole, next to which a parallel channel was cut. This formed the shoulder to which the uppers were attached using a chain stitch. The channel was then sealed using cement (Karg 1965:36-37: Dooley 1912).

Most shoes were hand-sewn until about 1815. The wooden shoe peg was invented in 1811 but did not gain wide-spread acceptance until four years later (Dooley 1912). Holes were punched through the soles with an awl and wooden pegs were driven into them (Karg 1965: Dooley 1912)(Figure 9.16). Wooden pegs only were used to attach the heel and heel lifts to the sole. The leather lifts were stitched around the edges and fastened in the center with wooden pegs (Anderson 1968:58). Eventually, machines measured and cut the pegs, and in 1835 a machine was introduced that drove them into the shoe. By 1843, machine pegging had gained general acceptance (Anderson 1968). Because English labor unions resisted the technological innovations associated with pegged, machine-assisted shoe manufacture, workers continued to produce large numbers of footwear by hand until the late nineteenth century (Huddleson and Watanabe 1990).

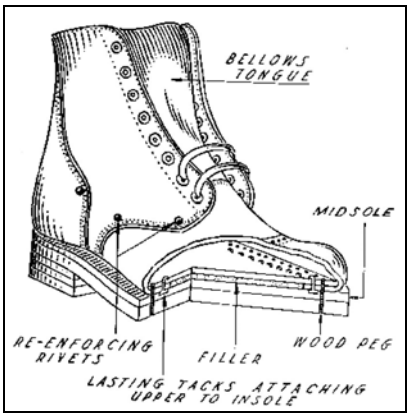

Figure 9.16. Standard pegged shoe (From Karg 1965: Fig. 70 p.34).

During the mid-nineteenth century, pegged shoes were the least expensive to manufacture and probably the most uncomfortable to wear. Pegs were driven completely through both the outsole and insole. The surface of the peg was smoothed with a rasp, but the peg would have caused discomfort as the sole compressed.

Shoe machinery was introduced 1845. Earlier factories sometimes cut the uppers, soles and linings. The pieces would then be distributed to local people who stitched them together to supplement their income. In 1848, Elias Howe introduced his sewing machine, which made it easier and faster to produce a more dependable shoe. By 1858, the improved McKay sewing machine was available. The earliest version of this machine did not sew the toe or heel. Around

the same time, the screw machine was introduced. This was soon followed by the invention of the Goodyear turn machine, which eliminated most of the hand turn work (Dooley 1912).

The standard screw process was used mainly to manufacture heavy-duty work shoes (Figure 9.17). This process involved fastening the outsole and insole together with a double-thread wire, which was cut off by the machine when it reached the inside of the shoe. The uppers were attached to the inner sole using lasting tacks. The shank was then put in place and the soles were attached. This was sometimes done using wire threaded through the sole (Karg 1965; Dooley 1912).

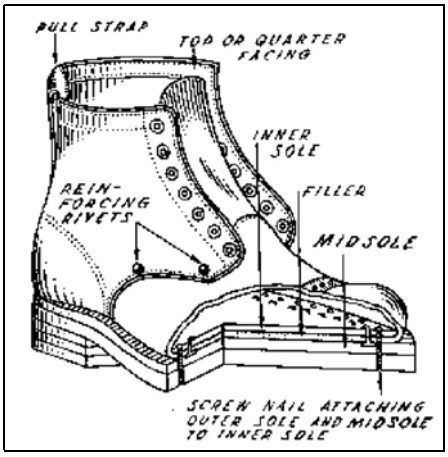

Figure 9.17. Standard screw shoe (From Karg 1965: Fig. 68 p.32).

The cable nailing machine produced a cable of nails that were cut off and driven automatically into the shoe (Dooley 1912; Anderson 1968). In the *McKay* shoe the outer sole was either directly or indirectly attached to the inner sole using a chain stitch that penetrated through the inner sole to the foot. The seam was placed in a channel around the edge of the outer sole, as it was with the welt shoe. However, it was then reinforced using nails or staples. The channel was then sealed with cement. The construction of the *McKay* shoe used a chain stitch rather than a lockstitch (used in welt construction). This style is differentiated from welt construction by the use of nails, tacks or staples, visible when the sock lining is removed (Karg 1965; Dooley 1912; Anderson 1968). Square cut nails in shoes that have not been resoled generally indicate a date before wire nailing machines (Anderson 1968).

The *Goodyear welt* shoe is the most popular type of shoe construction today. The invention of the welt stitcher in 1874 allowed for the production of inexpensive shoes. This is the only style in which the side of the inner sole that touches the foot, with the exception of the heel, does not contain seams, tacks, staples, pegs, or nails. Shoes made by the welt technique are identified by several features. The *inner sole* has a narrow, rectangular groove cut around its edge. Just inside and paralleling this groove is a channel that resembles a ridge or lip. A narrow strip of leather called a *welt* is attached to the inner sole. This is usually grooved and beveled along one edge to receive and protect the stitches. The uppers, lining and welt are stitched into the channel. This seam is called the *inseam* (Karg 1965: Dooley 1912).

The midsoles of a welt shoe are commonly used to increase the thickness of the sole. This sole is cemented to the outer soles. The *outer soles* are also cemented and sewn to the other soles. The seam is sometimes buried in a channel. Only the heel is attached using nails, which are covered by a heel pad (Karg 1965: Dooley 1912).

The Goodyear welt stitcher revolutionized the welting process by automating it. The channels were cut automatically and a special sewing needle stitched the pieces together. The hand- and machine-stitched welt shoes are difficult to differentiate. If the stitching is relatively even it is likely machine made (Holder-Blee 1986).

Shoe Repair:

A shoe's heel generally wears out first, because it is directly under the body and the first part of the shoe to strike the ground. To replace or repair a heel, scrap sole leather is attached using tacks. The pieces are then trimmed into shape. Dooley (1912) suggests that the nails be placed thicker on the side of the heel that is more worn to prevent continued rapid wear. The heel is rasped, smoothed, and leveled (Dooley 1912).

Heel plates are attached by the shoe manufacturer or repair person as a means to protect the heel from wear. There are two types – the insert type (Figure 9.18) and the surface type. Insert plates are attached to shoes with worn heels. The heel must be rebuilt and then the plate permanently attached. To attach the surface type plate, the location of holes or prongs is marked on the heel, the holes are drilled, and the plate is attached (Karg 1965).

Other forms of shoe repair typically used leather and leather scrap to completely replace a portion of the shoe upper or sole. Uppers would be trimmed prior to replacement, and soles trimmed after replacement (Dooley 1912).

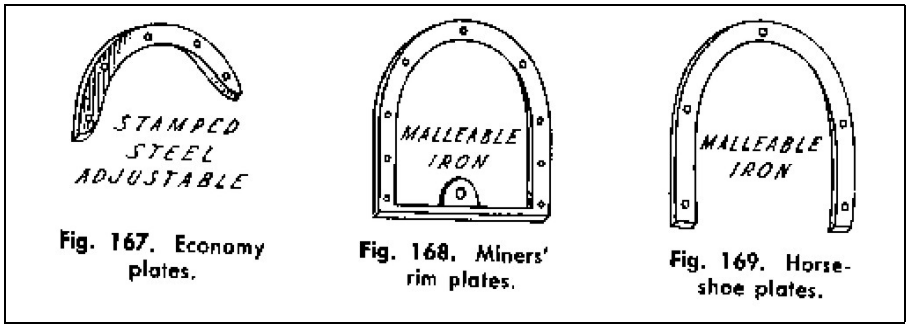

Fig. 167. Economy plates.

Fig. 168. Miners' rim plates.

Fig. 169. Horse-shoe plates.

Figure 9.18. Insert type heel plates (From Karg 1965: Fig. 167-169 p. 106).

Shoes from archaeological contexts:

Mass-produced shoes are divided into three groups based on the method used to attach the outsole to the upper: nailed/pegged/screwed, sewn, or cemented. Nailed shoes may exhibit nails or corroded parts of intact nails. If the nails are gone they leave a round hole, no feathered ridges, and no channels. A stitched shoe has small, slightly oval needle holes. Indentations may be visible in the leather between the holes from the tightly pulled thread. Sewn shoes also have an outsole channel. Some have a feathered edge on the bottom of the outsole with the stitching underneath (Anderson 1968: 62).

The sole of a turned shoe had a thin, feathered strip of leather on the inside of the sole. It was this strip that the upper was stitched to when the shoe was inside out. Therefore, any sole with a feathered edge and oval stitch holes is likely from a turned shoe (Anderson 1968). The McKay shoe had stitching on the inside of the insole. If stitching is not present on the toe or heel, it predates McKay's 1862 patent. Goodyear welt shoes have a unique rib on the underside of the insole. If the upper is cemented to the insole, the shoe was the cemented type. This glued fragment is often the only portion of the upper recovered (Anderson 1968: 64).

Table 9.13. Important dates in mass-production of shoes (derived from Anderson 1968: 64).

circa 1811	machine manufacture of wooden pegs
1844	vulcanization process patented by Goodyear
1846	Elias Howe's sewing machine
1854	Davey Pegging Machine
circa 1860	lasts for right and left shoes
circa 1862	McKay patents Blake's process, stitching completely around shoe cable nailing machine standard screw machine
circa 1875	Goodyear welt stitcher automatic heeling machine
1888	standardization of shoe sizes
circa 1926	cement shoe production practical

As late as 1860, most shoes were formed with straight lasts. No distinction was made between the right and left foot. It was during the Civil War that sided shoes were developed. Another advancement in the shoe industry was establishment of standard shoe sizes. This created a standard measurement for the lasts on which the shoes were made (Anderson 1968).

Supply of leather and footwear:

Tanneries were located at Fort Ross and at Ozerskii Redoubt, a Russian fishing settlement 12 miles from Sitka. Hides for both operations originated in California. Klebnikov provides insights on Fort Ross tannery activities for 1826-1829:

> Local hides and those from California are tanned and dressed into leather for boots and soles. Sometimes these are of exceptionally fine quality and whatever is not needed for use here is sent to Sitka. … Prepared hides are appraised at 15 rubles each. The master tanner is a Kodiak Aleut who learned his trade from a Russian. He also tans reindeer, elk and wild goat hides as suede which is used to make the undergarments worn by workers (Khlebnikov 1976: 122).

The Ozerskii tannery processed 100 to 150 hides from California steer every year and made leather uppers and soles (Khlebnikov 1994). Klebnikov wrote in 1832:

> *About tanned hides.* Half of the tanned hides can be gotten from Ross every year where the raw hides are processed. Every year we obtain up to 78 puds of hides (each hide weighing 30 funts). The hides are gotten from the cattle at Ross or from trade in California; the holds of the ships are always lined with hides before the wheat is loaded; then it is covered with canvas-sail to protect it from dampness; these hides are then sent to Ross [sic?] to be processed. The quality of the Ross hides is rather good, and few are inferior to the Russian hides [Khlebnikov 1994: 202-205].

The uppers and soles were distributed to the other Russian-American Company settlements for shoe repair and possibly manufacture. Some of the recovered uppers and soles in the Castle Hill collection likely came from the Ozerskii tannery.

Before the establishment of tanneries and leather processing in the colonies, leather goods were brought from Russia or purchased from British and American traders. The source for machine- and factory-made shoes and boots found at Castle Hill could have been from European suppliers.

Footwear wore out quickly and was expensive to replace. One worker requested "From henceforth for our duration of service with the Company, we humbly ask that prices not be increased on necessary and indispensable goods such as footwear and clothing, or on provisions, above the set tax which is presently imposed and in effect at the store (Khlebnikov 1976: 21)."

Shoes and shoe parts from Castle Hill:

The Castle Hill collection includes a variety of shoes and shoe parts. Form, size, materials and distinguishing characteristics were recorded for each specimen. Form indicates whether a shoe was sided or straight; sewn, pegged, nailed, welted or cemented; and part of the shoe. Shoe parts were measured in width and length. Width is the distance across the foot (from the outside of the foot to the inside). Length is the distance from toe to heel. Leather fragments, with or without evidence of stitching, were excluded from the analysis of shoes unless they could be associated with identifiable shoe parts.

Heels and lifts:

The most common shoe parts from Castle Hill are heels and heel lifts. The collection includes 13 of these. All are semicircular with a straight front. They range in length from 5.7 cm to 3.4 cm, and in width from 6.0 cm to 3.1 cm. The thickness of the specimen depends on the number of preserved lifts. One specimen has only one lift and is 0.3 cm thick. The thickest heel is 2.2 cm, with five lifts. All heels have lifts made of leather.

The material, arrangement and number of pegs or nails indicate how a shoe was manufactured and whether or not it was repaired. One heel, probably repaired, has square nails covering the entire heel. Six heels show wood peg construction, five with square and one with round pegs. Two have approximately twenty pegs around the edge, with lines of pegs across the center lengthwise and widthwise. Another specimen has pegs around the edge, in a double row along the back and lengthwise across the center. A third has pegs around the edge, and four more arranged in a square in the center. The remaining two specimens have pegs only around the edge. None appear to be the result of repair efforts.

One fragmentary heel shows evidence of construction with iron nails and wooden pegs. Four square iron nails are along the edge, and one in the center. Wood pegs are dispersed along the edge with the iron nails. This suggests that the shoe was repaired. Another heel has copper wire nails, possibly from the standard screw manuufacturing process. The five nails are arranged around the edge of the heel, which is very small and similar to the type found on high heels.

Three heel fragments have clinched square-shank copper tacks. One has tacks with rounded heads, while the others have headless copper tacks. One of the latter specimens has square wood pegs interspersed with the tacks. An additional heel has square ferrous nails.

Five heels are associated with soles or parts of an upper. The first is a bark two-layer shank and heel. It has eight nails in the heel area around the edge and one in the center. The nails are all that is left of the lift, but leather remnants from the lining are still attached. The second

specimen is comprised of two degraded heel and sole fragments with leather lifts. They have square wood peg holes around the outer edge, and a line along the center of the heel lengthwise. The next specimen is a heel section recovered with intact matted grass insulation or padding. The midsole and outsole have square wood pegs and oval stitch holes. The heel, also constructed with wood pegs, has only one leather lift remaining. Four welts are associated with this specimen. Three are straight with oval stitch holes, while the fourth is an arc with oval stitch holes and a few square wood peg holes. This shoe was made on a straight last. The fourth specimen is a fragmentary heel and quarter fragment. Three square nails and round wood pegs are along the edge of the heel, which has three lifts. The quarter has oval stitch holes along the side.

The final specimen is made from leather lifts and held together with wooden pegs. An iron insert type heel plate, similar to others from the site, is attached with square iron nails to the base of the heel. An upper fragment with irregularly spaced oval stitch holes around the edge was recovered with the heel.

Soles:

Linings are used to reinforce a shoe. They are known as quarter linings, vamp linings, toe linings, tongue linings and heel linings. These serve to help keep the shape of the shoe and make it more comfortable. Linings are made from durable materials that will allow the foot to breathe. Sometimes there is an additional lining between the quarters and the quarters lining (Karg 1965). Sock lining is used in shoes constructed with nails, staples or stitches. They cover the length of the inner soles and are often made of leather. Heel pads are similar to sock linings but are only long enough to cover the nails that attach the heel (Karg 1965)(Figure 9.19).

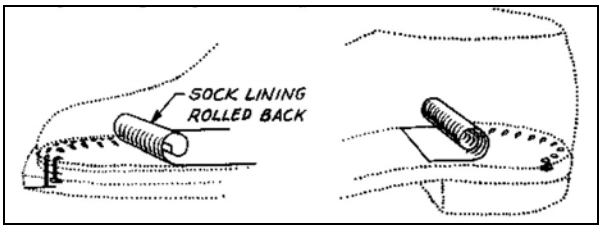

Figure 9.19. Sock lining and heel pad pulled back to show nails and screws (From Karg 1965: 9-10, Fig. 22 and 23).

The Castle Hill collection includes nine soles made on a straight last, two made for a right shoe, and eight too fragmentary or degraded to determine. Both of the sided soles and ten of the others have no feathering or channels. Four have only feathering. The remaining soles have feathering and channels. One poorly preserved sole has a liner attached and appears to be a composite of several thin leather soles cemented together. Two soles from the toe to the arch have a single wood peg in the tip. Another sole has copper headless screws around the edge. The screws are 0.2 cm wide and approximately 1.0 cm long. Two were recovered with associated welts and a backstay.

Uppers:

Shoe tops, or *uppers*, consist of several parts – quarters, vamp, toe cap, backstay, and counter (Figures 9.20 to 9.22). *Quarters* begin at the laces, passing beneath the ankle bone and heel in low-cut shoes. In high-top shoes, the quarters pass around the heel and over the ankle

(Karg 1965: Dooley 1912). The *vamp* extends from the throat to the toe, and down both sides to the soles. There are three basic styles – the common cut-off, the three-quarter for plain or double tip shoes, and the full length or seamless (Karg 1965: Dooley 1912).

The two quarters pieces are joined in the back with a seam that is subject to a bending and twisting. Unless reinforced, this seam will tear. A *backstay* is a narrow strip of leather that is sewn into the shoe back to act as reinforcement (Karg 1965: Dooley 1912).

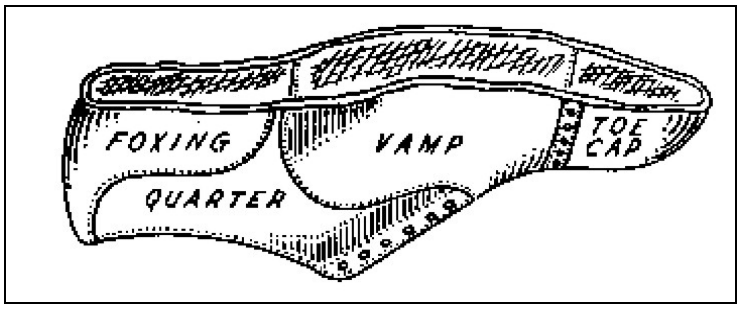

Figure 9.20. Assembled uppers and lining
(From Karg 1965: Fig. 5 p.4).

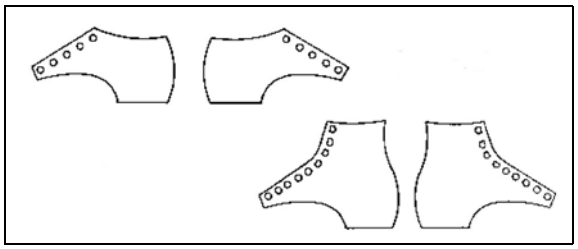

Figure 9.21. Low-top and high-top shoe quarters
(From Karg 1965: Fig. 6 and 7 p.5).

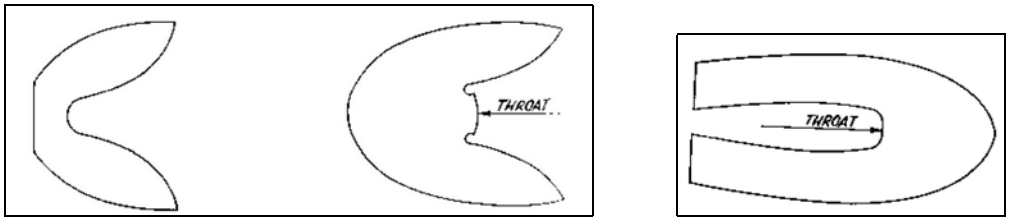

Figure 9.22. Cut-off vamp, full-toe vamp, and full-length vamp
(From Karg 1965: Fig. 8, 9 and 10 p.5-6).

Stays are also sometimes referred to as facing. They act primarily to give strength and protection to the seams that may undergo severe flexing. The *counter* primarily serves the purpose of a stiffener. It fits around the back of the heel and molds the shoe to the foot (Figure 9.23). Today they are manufactured separately of leather, fiberboard, glue-saturated canvas, and paper (Karg 1965: Dooley 1912). The counter is usually placed on the interior of the shoe.

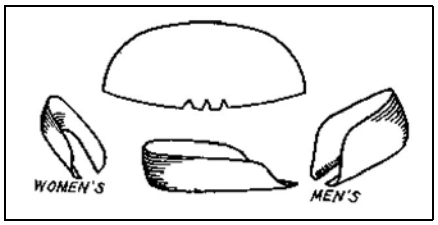

Figure 9.23. Counters.(From Karg 1965: Fig. 24 p.10).

At the front of the shoe is another stiffener called the *toe box*. These are made in a variety of shapes and from materials such as leather, fiberboard, and glued or shellacked fabrics (Karg 1965: Dooley 1912). As with the counter, it is placed on the interior of the shoe.

The Castle Hill collection includes five upper fragments. One is either a quarter or vamp with oval stitching holes. The second is an inner sole with the upper vamp. The welt of this specimen is feathered with oval stitch holes. The toe is rounded. It could not be determined if a straight last was used in its manufacture. The third upper portion is a vamp of the full toe style. There is no feathering or channeling, and oval stitching is visible along one edge. The fourth is a modified full-toe vamp with square peg holes along the welt and stitching around the throat. Two upper fragments found together are a quarter and a modified cut-off vamp. The vamp has peg holes along one edge and stitching along the remaining edges. A double row of stitching extends up the center of the specimen. Three welt fragments with double rows of large oval peg holes, and a fourth possible welt fragment with large round holes, were also recovered.

A reinforcement must be made, called a *shank,* between the heel and ball of the shoe. Without this, the heel would be forced up into the foot and the shoe would be unwearable. Shanks are usually made of wood or steel. The shank must also fit well under the heel and extend forward to the ball of the foot (Karg 1965: Dooley 1912). One of the Castle Hill specimens, a rectangular leather piece, may be a shank or a strap from a shoe. It is 13.2 cm long, 1.2 cm wide and 0.3 cm thick. No stitching or feathering was observed.

Shoes:

The Castle Hill assemblage includes nine shoes in various states of preservation (Figures 9.24 to 9.26). The first consists of two sole fragments, seven indeterminate fragments and a bark shank. Oval stitch holes and wood peg holes are visible along the edge of the heel and in lines along the center lengthwise. This shoe was made on a straight last. A second specimen was also a straight last shoe. It consists of a portion of the vamp, welt, insole, two degraded midsoles, an outsole and three backstays or counters. The welts, insole and backstays/counters are channeled and feathered. Oval stitch holes are evident on all parts. Although no heel was found *in situ* with this specimen, the soles show evidence of wood peg construction. A third shoe has a very fragmentary upper and welt, a sole, a backstay and a heel. Oval stitch holes are evident on all parts. The sole is not feathered or channeled, but the backstay is feathered. The heel is characterized by two leather lifts and round wood peg construction. This specimen, from a left shoe, was re-heeled or re-soled.

One of the fragmentary specimens consists of an upper, a counter and a single heel lift. The upper is the shadow image of a full throat vamp. There is evidence of oval stitch holes along the throat. The backstay is feathered and has round wood peg holes, as does the lift. The parts are insufficient to determine if this shoe was made on a straight or sided last.

The fifth shoe consists of a bark shank, a very fragmentary vamp, four degraded upper fragments, six indeterminate leather fragments, and heel fragments. Square wooden peg holes are visible in the shank, upper fragments and heel. At least six iron nails attach the leather lifts of the heel. The vamp fragment is the cut-off style. The shank is two layers. This shoe was made on a straight last using nails. It appears that it was repaired.

The sixth shoe is comprised of an upper fragment with round peg holes and a channel, a fragmentary sole, four welt fragments, and a heel. The sole and welts have large round peg holes. The heel has oval peg holes around the edge and along the center. Three ferrous tacks are evenly spaced around the edge. The specimen is too fragmentary to determine if it was manufactured on a straight or sided last.

Figure 9.24. Examples of shoes found in situ in the workshop area trash deposit.

Figure 9.25. "Expanded" view of a Castle Hill shoe. A wooden shank rests on the mid-sole (R).

Figure 9.26. (a) Lower portion of a boot, vamps shown; (b) inner or mid-sole, heel, and counter.

The seventh example consists of welts, upper fragments and three soles. The welts and upper fragments all have small evenly spaced stitch holes. The soles were made on a straight last and have small evenly spaced stitch holes. No feathering or channels are present.

The eighth shoe is comprised of three upper fragments and two soles. No stitching was observed on the upper fragments. The first sole is the toe area only. The second sole was made on a straight last. Large oval wood pegs were used to attach the heel. No stitching, feathering or channeling was observed on either sole.

The most complete shoe has a vamp, four soles, a wooden shank, a heel liner, a toe liner, a heel, ten welt fragments and two indeterminate leather fragments. Round stitch holes were observed in the vamp, third sole, fourth sole, fifth sole, and the welt. The vamp style is a full toe. The insole, midsoles and outsole, toe and heel liners all have round wooden peg holes. The heel is constructed of three leather lifts fastened by round wood pegs. The insole and second midsole have feathering, but the first midsole has both feathering and channels. The wooden shank of this shoe is unlike others in the collection. It is a carved, rectangular, slightly arched piece that fits in the center of the shoe below the arch. The shoe was made on a straight last.

No shoes were identified as having been manufactured using the McKay sewing machine or the Goodyear process.

Heel plates:

Eight heel plates were recovered at Castle Hill. Five of these are iron, and three are copper. Two of the copper heel plates are broken in half. All are the horseshoe plate style. This type has three to five attachment holes and is horseshoe shaped (Figure 9.27). The length of the iron plates ranges from 4.7 cm to 6.6 cm, and the width from 4.1 cm to 6.4 cm in width. The copper plates range from 4.0 cm to 5.5 cm in length, with widths of 5.4 cm to 6.5 cm. The ends of all eight are turned up to bend over the edge of the heel.

Figure 9.27. Iron heel plates from the workshop area.

Leather scrap:

Approximately 1,500 leather scraps were recovered at Castle Hill in 1997 and 1998. During cataloging, they were separated into scrap and unknown groups. Scrap is defined by cut edges, peg or nail holes, and/or stitching. Many of these are likely shoe parts or manufacturing and repair by-products.

Footware Distribution:

The stratigraphic distribution of shoe parts is summarized in Table 9.14. Seventeen shoe parts were recovered from Stratum I. This includes the sole from a nailed or pegged shoe made on a straight last, a second from a sewn shoe made on a straight last, a third also from a straight last but constructed with wood pegs, one from a straight last made with pegs and stitching, and two from possible turned shoes. Shoe manufacturing technology dates the deposit no earlier than 1815 and no later than 1860. The 6 heels excavated from Stratum I support this. Three were constructed using wood pegs, and the other three using square iron nails. One has an attached sole constructed on a straight last.

Table 9.14. Distribution of shoe parts by stratum.

Stratum	***Heel plates***	***Shoes***	***Upper fragments***	***Soles***	***Heels***	***total***
Surface	2				1	3 (5%)
I	4		1	6	6	17 (28%)
IIa		6	4	9	7	26 (43%)
IIb					1	1 (2%)
IIc	1	1		2		4 (7%)
IId				1	1	2 (3%)
IIe	1					1 (2%)
IIi		2		1		3 (5%)
III			1		2	3 (5%)
total	8 (13%)	9 (15%)	6 (10%)	19 (32%)	18 (30%)	***60***

Excavations in Stratum IIa yielded 7 heels, 4 upper fragments, 9 soles and 6 shoes. Four of the heels were constructed using wood pegs, two with copper tacks, and the other with square iron nails. All four uppers are sewn. Six soles have stitching, two of these with a channel, two with wooden pegs and one with iron nails. One sole has copper screws and the last sole has no stitching, pegs, nails, channeling or feathering. All six shoes have wood peg construction. Three were made on straight lasts, two are indeterminate, and one was made on a sided last. Two shoes are turned, two are hobnailed, and two are sewn. These attributes collectively date the deposit no earlier than 1815 and no later than 1860. The sided shoe was recovered on the thin western edge of the midden deposit and may be intrusive from a later stratum.

The excavation of Stratum IIb produced a heel constructed from copper wire nails, possibly from the standard screw process of manufacture which began around 1862.

The excavation of Stratum IIc produced two soles and one shoe. One sole and the shoe were made on a straight last. The shoe was constructed using wood pegs, and the sole was sewn. This dates the deposit to no earlier than 1815 and no later than 1860. Stratum IId excavations yielded only one heel and one sole. The heel was constructed using wooden pegs, dating the deposit to no earlier than 1815. The sole is stitched with a pegged heel.

Two shoes and one sole were found in Stratum IIi. One shoe made on a straight last has evidence of wood peg construction. No stitching, feathering or channels were observed. The other shoe is also straight, but was stitched. No pegs, feathering or channels were observed. The sole is actually two attached pieces, both with oval stitch and made on a straight last. Based on this evidence, this stratum predates 1860. Only two heels were found in stratum IIi. One was constructed using wooden pegs, and the other with square iron nails. This dates the deposit to no earlier than 1815.

These broad date brackets provide little opportunity to temporally separate the buildings, but they are consistent with the building sequence established through the seriation of other artifact types. As with other artifacts of a personal nature (*i.e.* clothing, beads and buttons), the shoe parts were concentrated in the midden deposit west of the buildings.

Conclusions

Material culture discard and curation at Castle Hill:

Preliminary analysis demonstrates that the occupants of the Castle Hill workshop area used plain and twilled woolen fabrics. These weaves constitute 68% of the analyzed fragments based on total area in square inches, and 84% by count. Larger garments were often made from these weave types, which might explain their dominance at the site. Microscopic fiber analysis also indicates that 80% of the specimens are wool. Wool was durable and warm, making it suitable for a damp environment.

The Castle Hill textiles vary greatly in shape, size, and condition. Many fragments are cut elongated triangular scraps of felt. Specimens of similar shape were recovered at the Native Alaskan Village site at Fort Ross, and are believed to have been used as backing for sewing buttons onto garments (Middleton: personal communication 2000). A stocking and fragments of a sash belt represent hand-knit examples of clothing from the site. Most of the analyzed textiles, including a portion of a collar from a uniform or formal jacket, are believed to be machine-made.

Few well-preserved textiles have been recovered from Russian American archaeological sites, making inter-site analysis difficult. No textiles were recovered at Three Saints Harbor. At Castle Hill, the majority of textile fragments were recovered from the midden outside of the buildings. This deposit is believed to represent a disposal area used by those residing or employed in the workshop area. The textiles from Castle Hill do not contribute to the dating of the site's strata. Beads and buttons, which are often temporally diagnostic, were not found directly associated with any textile specimens at Castle Hill.

In his report of excavations at Kolmakovskiy Redoubt, Oswalt (1980) writes that company employees and more affluent Native Alaskans wore cloth garments, although they were often worn underneath more traditional clothing such as skin parkas. Imported fabrics from Kolmakovskiy Redoubt include short fiber woolens in plain, twill and basket weaves. Some of these are from large garments such as coats or trousers, or blankets. Several fragments of black felt and a brown piece of silk were found. A majority of textiles from the Russian period deposits at Kolmakovskiy Redoubt are of coarse weave wool. The collection includes a large number of small "cuttings and shreds of fabric," but there is no indication as to actual size of these pieces (Oswalt 1980). A complete knit stocking was also recovered at Kolmakovskiy.

At the Sitka Hospital trash pit (circa 1860), Holder-Blee (1986) reports over 1,800 square inches of fabric that represents at least 23 different types of material. Approx-imately the same number of weaves were found at Castle Hill. There are more than 894 square inches (49.7%) of plain weave and 424 square inches (23.6%) of twills. Holder-Blee also recovered a small

quantity of cotton and wool-cotton blends. Weave types recovered from the trash pit but not represented at Castle Hill included 101 square inches (5.6%) of satin weave, 39 square inches (2.2%) of rib weave, and 40.5 square inches (2.3%) of other weaves not commonly used in clothing. Holder-Blee (1986) also reports 11.5 square inches (6.4%) of heavy brown felt and approximately 15 square inches (8.3%) of tightly knit, medium weight green wool. Blee's archaeological data suggest that a more diverse range of textiles were available in Sitka by 1860. She cites evidence, however, for either sewing inexperience or somber conditions. Many of the scraps were cut in odd shapes, and some were poorly or irregularly stitched, suggesting the possibility of student practice (Blee 1986: 246). A similar pattern at Castle Hill is attributed to clothing repair and button attachment techniques.

A comparison of bead colors shows that like other Russian American site collections, the most common colors recovered at Castle Hill were white and blue. In the Russian deposits at Kolmakovskiy, white "pound" beads were most common (n=472 or 19.4% of total collection). Opaque blue (n=134, 5.5% total collection), red cornelaine d'Aleppo with black centers (n=75, 3.1% total collection) and pale to dark blue pound beads (n=72, 3.0 total collection) were the next most common colors. No distinction was made between wound and drawn beads at Kolmakovskiy; therefore a comparison based on typologycannot be made.

At Three Saints Harbor the colors of beads recovered were blue (60.2%), white/clear (28.3%), cornelaine d'Aleppo – clear over red-brown over clear or yellow-green – (8%), red (.8%), green (1.4%), and assorted polychrome (.8%), brown .4%) and purple (.2%) (Crowell 1997:tables 3 and 4). The Reese Bay bead collection from the Aleutian Islands was dominated by blue (n=1107, 48.9%) and white (n=764, 33.7%) beads. Red over green cornelaine d'Aleppo beads were 8.1% (n=183). The remaining beads (4.1%) were of other colors (Bundy 1998: 64-67).

The bead colors at the Native Alaskan Village site at Fort Ross are slightly different than the previous sites. White is the most dominant color (n=181, 33%). Red was the next most common color (n=126, 23%), green 16.2% (n=89), and black 12.2% (n=67). Blue, purple and yellow made up only a small portion of the bead colors (Ross 1997).

This contrasts well with the collection from the Russian hospital trash pit. Two-thirds (64.6%, n=195) of the beads from this feature were yellow, while only 14.6% (n=44) were white and 7.3% (n=22) were blue. The remaining beads were clear (n=4, 1.3%), blue translucent on blue opaque faceted (n=8, 2.8%) and red translucent on white opaque cornelaine d'Aleppo (n=28, 9.3%) (Blee 1986: 163).

Comparing bead and button types from Castle Hill with other sites shows a distinct difference. A majority of bead types at Castle Hill were drawn (59%), although there was a high quantity of wound beads (38%) as well. At Three Saints Harbor, wound beads comprised 12.5% and drawn were 87% of the bead assemblage. From the Russian hospital trash pit, 98% (n=297) of the beads were drawn and only 1% (n=3) were wound. One bead was made using the mandrel press technique. This is a method of pressing together two pieces of glass in a round mold with a conical projection to make partial hole. The bead was then ground to make facets (Blee 1986: 164). Beads from the Native Alaskan Village site at Fort Ross were also dominated by the drawn type (90.7%). Wound beads comprised only 8.9% of the collection (Ross 1997). At Longhouse 2 at Reese Bay, 94.7% (n=2147) of the beads were drawn. Wound and molded beads, which were combined in the report, made up 5.3% (n=119) of the bead assemblage (Bundy 1998: 64-67).

Copper or brass buttons dominate the Castle Hill collection (44%). Other major button materials are white ceramic (23%), and glass (11%). The most common button type is Prosser,

which comprises 23% of the collection. There are also six phoenix buttons (3%) and five brass military buttons with anchors on the front (2%). Four white glass buttons with green and red ribbon inlay and three rubber Goodyear buttons were also recovered. The remaining buttons in the collection are unique.

At Three Saints Harbor, only three buttons were found. These consisted of a post-1854 American brass military uniform button with an American eagle and shield pressed on the front, an unidentifiable metal four-hole button, and a white glass *millefiorri* button with brown, yellow and white inlaid ribbons (Crowell 1996). At Kolmakovskiy Redoubt, 67 buttons were found in the Russian deposits. Fifty-one buttons were white ceramic four-hole types commonly associated with shirts and underwear. These were most likely made by the Prosser technique. Some were decorated. Far fewer buttons from Kolmakovskiy (n=4) were metal in comparison to Castle Hill. One rubber Goodyear button was found (Oswalt 1980). At the Sitka hospital trash pit, 64 buttons were recovered, of which 53 were the ceramic Prosser type. One 4-hole button was cast from metal, one was gilted metal, one was wooden, and one was celluloid (Blee 1986: 129).

Shoes and boots can provide insights into the needs, behaviors, and actions of a site's occupants. At Kolmakovskiy Redoubt were recovered factory-made soles and heels, with uppers seldom attached. Oswalt (1980) assumed that most examples were from boots rather than shoes. Two pieces of sealskin mukluks were found. Two wooden shoe lasts were recovered, suggesting that some level of shoe repair or manufacture took place at the site. Russian period footwear from Kolmakovskiy had uppers stitched by hand or machine, and soles attached by machine-made wooden pegs and nails. Oswalt believed the footwear from the Russian deposits to have been made by contemporary techniques of the time, whereas specimens from later American period deposits typically used pre-Civil War manufacturing techniques (Oswalt 1980: 37-38).

The footwear from the Sitka hospital Trash pit was diverse. Most of the specimens were too fragmentary or too poorly preserved to allow for accurate dating. Diagnostic parts dated the site between 1860 and 1880. Blee (1986) contended that cobblers in remote areas such as Sitka did not have access to current shoe manufacturing technology. Blee believes the large number of shoe parts in the hospital trash pit to be associated with the Sitka Industrial School, which taught shoemaking in the hospital building from 1881 to 1882.

Many of the shoes recovered from the Sitka hospital trash pit were poorly constructed. Heels often had an insufficient number of nails or pegs. Lifts and shanks were pieced together from bits of scrap leather, which was sometimes poorly tanned with incomplete removal of hair. Many of the shoes were cut to receive a new half sole, suggesting a lack of durability. Most were hand-crafted. Pegged shoes, the cheapest to produce, were most abundant (Blee 1986).

The pattern of material culture discard at Castle Hill is that of abandonment and loss. The fragmentary nature of the textiles indicates that clothing repair probably took place on site, producing a large amount of waste. The beads and buttons found might have been part of this industry. Due to the diversity of the assemblage, however, it is more likely that they were lost. The large number of leather scraps and shoe parts indicate that shoes were repaired at Castle Hill. Many of the soles were cut off in the arch area, probably in preparation for replacement due to wear. Several heels had evidence that wooden pegs, ferrous nails, or copper tacks were used to replace lifts. The presence of many heel plates in the collection substantiate repair and maintenance activities. Compared with other Russian American sites, Castle Hill has a unique assemblage of personal adornment items. The materials suggest the consumer in Sitka had a variety of choices in fabrics and clothing styles. Analysis suggests a preference for woolen plain or twilled fabrics, possibly in the form of ready-made clothing. Buttons such as Prosser style

ceramic buttons are known to have been associated with this clothing type. Also, the many brass and copper buttons found, which were common during the first half of the nineteenth century, support this conclusion. At Castle Hill shoes were constructed and repaired by hand. These same trends are not as evident at other Russian American sites.

Measures of socio-economic status or behavior:

The types of beads and buttons recovered at Castle Hill differs from other Russian American sites. Sitka's role as a major trade center from 1820 to 1840 might explain some of the variation in material culture between sites, but may also be the result of differential dispersal of goods throughout Russian America.

The bead and button assemblages from Castle Hill were analyzed completely and quantified in two ways. Ten units were selected from the site for complete analysis of all artifact categories. For these units, artifacts from the disturbed and post-1867 strata were excluded from the sample to allow for analysis only of the Russian deposits (Strata IIa, IIb, IIc, IId, IIe and III). Because strata have not yet been correlated across the site for all units, the bead and button assemblages include some specimens from disturbed and post-1867 deposits.

From the ten sample units, beads comprise 0.24% and buttons .014% of the collection. Similar percentages were obtained when the beads and buttons were examined relative to the entire site assemblage. Of other Russian American sites that could be compared, only the Sitka hospital trash pit is similar. Beads make up 3% and buttons 0.6% of that collection (Blee 1986). The beads and buttons at Three Saint's Harbor make up 48% and 0.28% of the collection, respectively (Crowell 1997). The beads from Longhouse 2 in Reese Bay comprise 90% of the site collection (Bundy 1998).

Castle Hill deposits contained shoes made with techniques more consistent with early 19th century manufacture. Modern manufacturing practices such as Mckay's sewing machine and the Goodyear welting process are not represented. The majority of footwear from Castle Hill was constructed using wooden pegs and stitching. Ferrous square cut nails and square copper tacks are less common in this collection. The leather of the shoes has clear evidence of hand cutting and sewing.

This is very different from the pattern of footwear manufacture represented at Kolmakovskiy Redoubt. Machine- and factory-made soles and heels dominated that collection. This might be due to the difference in dates of occupation, but the dates from the Sitka hospital trash pit also overlap those from Kolmakovskiy. The difference between Kolmakovskiy and Castle Hill is better explained by supply. Although Sitka was the commercial hub of Russian America and generally better supplied than outlying settlements, some items were in limited supply or too expensive for workers to afford.

Evidence from the personal adornment and clothing at Castle Hill suggests that patterning within the material culture record changed over the years. Dilliplane (1990) writes that "average to below-average quality goods were generally imported to the colonies… [except 1840-1850]… and colonial products consistently registered at below average standards without exception" (Dilliplane 1990:402-403). The clothing and personal adornment from Castle Hill do not appear to support this. Despite the contract with the HBC to supply goods to the colonies, the only change seems to have been an increase in ready-made clothing, consistent with a world-wide trend.

The site provides evidence of a complex supply system and suggests that price control and needs played important roles. Footwear and clothing in Sitka wore out quickly, but were expensive to replace. In 1818, one worker requested:

> …from henceforth for our duration of service with the Company, we humbly ask that prices not be increased on necessary and indispensable goods such as footwear and clothing, or on provisions, above the set tax which is presently imposed and in effect at the store [Khlebnikov 1976: 21].

Subsequently the Governing Board stipulated in directive No. 523, Paragraph 11:

> Common cloth, heavy workcloth, ticking and molasses should be sold at the lowest possible prices. Add a 30% markup to goods purchased in St. Petersburg for expenses, and add a 10% to 15% markup to those purchased elsewhere, to cover transportation, not to show profit. In general it is suggested that the Company take a profit only from the various imported goods, furs, and from trade with foreigners' [Khlebnikov 1976: 20].

Workers had limited access to clothing, shoes and other supplies. According to Khlebnikov (1976: 20), "Goods were given out to workers from the store, upon authorization of the Chief Manager, and were put on their accounts: this took place once a month or sometimes every three months." Historical documentation also indicates that the Tlingit, Aleuts, Native Californians, and other workers regarded clothing and fabric important trade items. Their salaries were sometimes computed to include the cost of food and clothing from the company stores:

> Between the ages of 20 and 29 they [Creoles] are also to be employed on the basis of their training and ability, and they are to receive salaries on the basis of their productivity and dedication and service, of from 100 to 350 rubles, including clothing and food [Khlebnikov 1976: 45].

> Because of the occassional shortages, the Company sometimes barters with the Kolosh for halibut, whale oil and seal oil, and in springtime, for tree bark to cover the stables, kazhims, and other buildings which cannot be covered with boards since there is no lumber mill. In exchange for these items, the Kolosh receive tobacco, cast iron kettles, axes, trade beads, pigments, flemish cloth, calico, and other things [Khlebnikov 1976: 70].

Clearly, textiles and other items of personal adornment were available in Sitka. Workers' access to these goods, however, was limited by their salaries and by policies of the Russian-American Company. Dates for the personal adornment items generally range from 1820 to 1839, and are consistent with dates of other artifact classes for the construction sequence in the workshop area.

Russian-American industries and consumer choices:

Questions of supply have been addressed in several ways, providing insights on the resources available and the choices that consumers made. Questions of durability, however, have received less attention. While historical records and faunal analyses indicate problems in food supply for the Russian American settlements, and reliance on local foods, the archaeological record suggests that this shortage did not apply to durable goods. The artifact assemblage at Castle Hill includes goods that were surprisingly sophisticated for a frontier colony. While non-durable goods such as food spoiled quickly on the voyage to the colonies, items such as

ceramics, textiles, and tools had a higher survival rate. The durable material culture is reminiscent of a more European lifestyle, substantiating Sitka's more cosmopolitan role as the primary trade center and capital of Russian America.

Consumer choice was influenced by the price and availability of goods in the settlements. Ready-made clothing and other goods acquired by the Russian-American Company for sale to company employees had to be affordable. Prosser buttons are commonly associated with less costly ready-made clothes. While the Castle Hill assemblage reflects the variety of beads shipped to Russian America for trade, their scarcity in the deposits suggests that workers at the site did not use beads in their personal adornment at the same rate as their counterparts at more remote sites.

Differences in cultural practices partially may account for the discrepancy between the collections from Castle Hill and other Russian American sites. In the longhouse excavated at Reese Bay, bead concentrations defined work areas (Bundy 1998). Similarly, at Three Saints Harbor and Kolmakovskiy, high concentrations of beads were associated with housing set aside for Native Alaskans and for storage (Crowell 1997; Oswalt 1980). The lack of bead concentrations in the Castle Hill workshop area might indicate an absence of special beadworking or storage areas.

This may be because this area of the site did not support a warehouse. It also may be because few women lived on site. Beads were not typically adornment items on clothing of Russian women of the lower classes. Embroidery was preferred. Given that the Castle Hill excavations focused on a workshop area rather than a distribution area, the recovered items are believed to have been either personal, related to manufacturing, or derived from local architecture.

Given the low pay of company workers, it is reasonable to assume that function and durability were more important to consumer choice than fashion or decoration. The relatively low number of beads and buttons from site support this conclusion. Evidence for clothing and shoe repair suggest that, while a variety of goods were available in Sitka, many types are absent or poorly represented in the Castle Hill workshop area. This may indicate that these items were not made available to the workers, they were too expensive, or they were not practical. For clothing items, the archaeological record suggests that clothing was repaired rather than replaced.

Questions of ethnicity have been a research component of many of the investigations on Russian American sites, and have been addressed through the analysis of personal adornment items. At Castle Hill, historical documents state that workers at the site were either European or Creole. Creoles occupied a specific level of the socio-economic scale with status specific rights and duties. Although first defined as a person being of mixed European-Siberian or European-Siberian-Alaskan ancestry, they were not regarded as a racial group. Creole status was inherited in the patriliny. Not all persons of mixed ancestry were assigned Creole status, nor were all Creoles of mixed parentage. Creole status had associated obligations. Many maintained ties to both Native and Russian communities, and the benefits afforded by each (Black 1990). Due to the historically complex social and behavioral patterns of Creoles, it is difficult to distinguish their material culture from the material cultures of purely Native or Russian communities.