Textiles

Textiles ranked as the most highly valued goods in the Inca Empire. They occupied nearly every sphere of human life, serving as clothing, ritual object, work of art, sociopolitical currency, or tribute. Cloth was so prized among the Incas that during the Spanish conquest individuals would burn it rather than witness its confiscation, which also explains the dearth of extant Inca fiber art. Weaving had been practiced throughout the Andes since 2300 B.C.E., making it one of the oldest artistic traditions in South America. The term *textile* refers to clothing, bags, blankets, and other items made out of woven plant fibers or animal fur. The oldest surviving textile fragments were discovered at the site of Huaca Prieta on the Peruvian north coast by the archaeologist Junius Bird. Due to bad preservation conditions in the highlands, most Inca textiles have not survived. However, some complete pieces and fragments, especially those that were exported to the dry coastal regions or preserved at high-elevation shrines, have withstood the test of time to help reconstruct the appearance and manufacturing techniques of Inca textiles at the height of empire.

Techniques

The process of weaving was a laborious one, involving many steps that required a great deal of human organization and expertise. After the plant fiber or wool was collected, cleaned, and combed, it was ready for dyeing. Cotton, along with llama, alpaca, and vicuña fur (all from the camelid family), was spun into thread for weaving. Camelid fibers required the extra process of mordant treatment, which allowed the pigment to "stick" to the wool. Dyes were primarily extracted from plants, although the use of cochineal and the marine snail present special exceptions. The deep red color found on Andean textiles comes from cochineal, a small insect that lives on the nopal cactus prevalent in arid coastal areas. Marine snails were used to extract a rich purple color. The indigo plant produced the blue found in Inca textiles. After the dyeing process, fiber would be prepared for spinning. Spinning was achieved through use of a drop spindle and distaff. The resultant thread would be twisted clockwise, or "z-spun," and then doubled to ensure durability and twisted in the opposite direction, a technique referred to as "s-plied." Once the thread was spun, it was ready to be tied to the loom, a process known as warping, or dressing. The immobile threads bound to the loom are known as the warp, while the moving threads that are woven into them are called the weft.

The Incas used two different types of looms: the backstrap loom and the vertical loom. The backstrap loom is the oldest type and was used throughout both the Andes and Mesoamerica for millennia. At one end the warp threads are attached to a pole secured to a tree or a post, and at the other end a second pole is stretched tight by a strap that wraps around the weaver's back. This type of loom was most commonly used for small-scale, everyday textiles. The vertical loom is a self-supporting structure with four rods that allow for the production of larger and more elaborate textiles. This form was common in the Andes and was quite large, measuring up to seven feet wide. It was typically reserved for state-sponsored and elite fiber art and could be used by multiple weavers at one time.

There are many different types of weaves, each yielding a distinct appearance and texture in the final product. The most common loom technique was the plain weave, which simply required inserting the weft over and under the warp across the loom at a 90-degree angle. Patterns could easily be created by alternating the warp threads with different colors. A specifically Andean technique, used for more complex patterning, is known as discontinuous warp and weft. Unlike in plain weave, with this method the weft does not reach the end of the loom but instead is woven within an isolated area of the warp to allow for the elaboration of separate interacting design schemes. Tapestry weave was employed for the finest and most elaborate textiles. Several techniques existed that did not even require the use of a loom. These include braiding, knotting, wrapping, and looping. They could be used for creating bags, hats, and appendages to tapestries, such as tassels.

Clothing

Clothing, aside from its utilitarian purposes, indicated the social or political status of its wearer. Men wore an *uncu* (tunic) topped with a mantle, depending on the climate, along with other accoutrements such as waistbands and headbands. Women typically wore simple dresses made of untailored cloth wrapped around the body and held in place with a *chumpi*, or sash. Like men, women would wear a mantle, or *lliclla* on top of their dress but with an added functional accessory known as a *tupu*. *Tupus* were long, sharp decorative pins that could be pierced through layers of clothing to hold it in place. They were made of gold, silver, or copper, depending on the social status of the user. Although men and women tended to wear the same type of clothing, the type of material it was made from and its decorations revealed multitudes about the identity of that person. There existed three different kinds of cloth: *chusi*, which was thick, rough cotton cloth used for blankets and bedding; *abuasca*, or everyday cloth for clothing and other household items; and *cumbi*, high-quality cloth woven from camelid fur. A fourth and most highly valued type was *cumbi* interlaced with feathers, which was reserved only for members of the royal lineage. There also existed a hierarchy among the camelid furs; llamas had the coarsest furs, alpacas were softer, and woven vicuña thread produced the softest textiles, likened to silk by 16th-century Spanish observers. Clothing hierarchies did not simply exist in theory; there were consequences for wearing fur from a higher class. Individuals could not wear *cumbi* unless they received it as a special gift from the king, and those who wore clothing woven out of vicuña without permission would be severely fined.

Textiles as Cultural Expressions

Textiles were used in a variety of both public and private arenas to mark rites of passage, reinforce social and regional differences, honor and communicate with the supernatural world, and glorify the ruling class. Cloth was often presented as gifts to commemorate births, puberty ceremonies, marriages, and other types of social rituals. At times textiles served as backdrops or props in the performance of such ceremonies.

The historical record is rife with references to social life and textiles among the Incas, although with an elite/royal bias; the activities of commoners generally did not fall under the radar of the major 16th-century chroniclers. The anthropologist John Murra was among the first to glean the conquest narratives for references to cloth and found that during royal marriages elaborate multicolored cloths of feathers and other precious materials were laid out like paths leading to the palace. He also discovered that young men and women would receive gifts of clothes during adulthood initiation ceremonies. As previously noted, individuals of different social rank wore clothing of varying material and decorative quality. Commoners wore clothing out of *abuasca*, while elites and nobility donned costumes made from *cumbi*.

Moreover, the Inca army wore checkerboard tunics during battle to denote their position as servants to the state. Upon military defeat the winning side would receive gifts of cloth and precious feathers, while the losing army would be forced to don red tunics as a public proclamation of their vanquished status. Aside from marking social differences and military victories clothing also communicated geographical distinctions. Visitors to Cuzco from other regions were required to wear their local dress for quick and easy identification. At the same time, however, when a new territory was conquered by the Incas, the inhabitants would receive gifts of Inca-style clothing as part of the induction process.

Cloth was also burned, or "sacrificed," in the performance of ritual. As previously noted, *cumbi* was sacrificed daily as an offering to the Sun. Sixteenth-century chroniclers noted cloth sacrifices made to Pachamama, or Mother Earth. Moreover, textiles played a role in almost all Inca religious practices, from the burning of elaborately clothed *mallquis*, or royal ancestral mummies, to the ritual burning of cloth during planting and harvesting ceremonies. Cloth figured prominently in mortuary rituals too, in which the deceased would be dressed from head to toe in brand new clothing and left with extra changes of clothes as grave goods.

Design and Color Schemes

Textiles took on a variety of different colors and were interwoven with a range of motifs, depending on the type of textile and the social status of its user. Utilitarian textiles such as blankets and household cloths were generally unadorned and were dyed a single color, if at all.

Tocapus are the most ubiquitous design feature on Inca textiles, consisting of small squares inscribed with geometric motifs. These motifs include zigzags, checkerboard patterns, quadripartite (four-part) motifs, squiggled lines, concentric squares, and diamonds. Some tunics are decorated with a single *tocapu*, others with a band of them encircling the torso, while still others are covered with several rows of *tocapus* or covered entirely. Scholars continue to debate their significance, but a few possibilities include territorial designations and symbols of different social and ethnic groups.

The Dumbarton Oaks Tunic

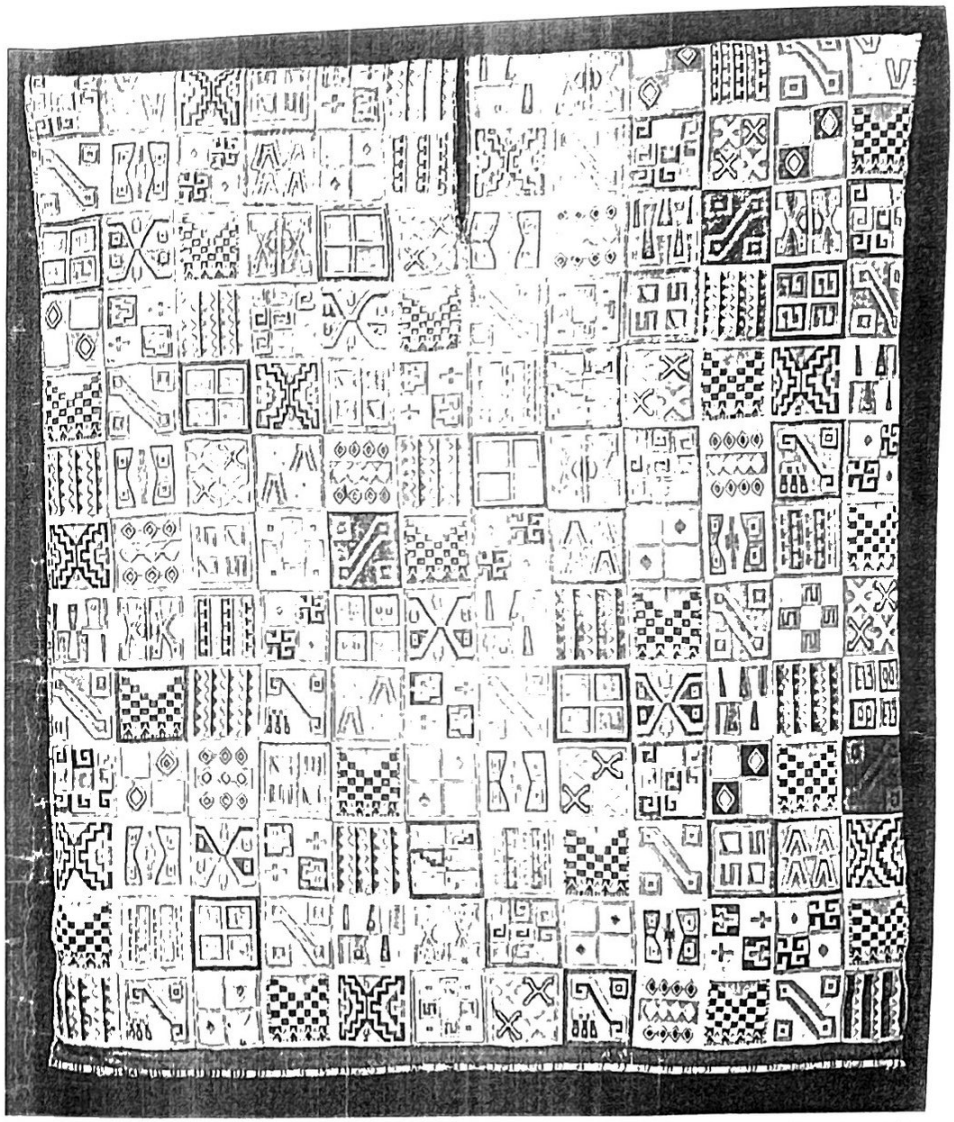
Although not many Inca textiles have survived, the extant few reveal a great deal about Inca aesthetics in the fiber arts. A famous royal *uncu*, one of the only examples of its kind and part of the Dumbarton Oaks collection, has been the subject of intensive study by art historians and archaeologists for years. It is decorated entirely by various *tocapus*. Although their exact meanings remain unclear, many have argued that each one represents a different community or abstract concept. Some of the *tocapus* have been identified by scholars, such as the one with the diagonal stripe with squares in the opposite corner, which is referred to as the "key motif." This motif reappears in other textiles and other media, including metalwork and wooden cups called *keros*. Another easily identified *tocapu* is the miniature checkerboard tunic, which was the uniform of the Inca army. Despite giving the appearance of uniformity, the distribution of the 211 *tocapus* on this particular *uncu* and others of its kind follows no discernable pattern; they display a strategic haphazardness that actually closely conforms to an Inca aesthetic tendency of unifying dynamism with order.

Scholars have largely been able to identify individual *tocapus* as well as the identities of *uncu* wearers based on drawings from Guamán Poma's magisterial work, *The First New Chronicle and Good Government*, completed in 1615, which documented Inca customs and history before and after the Spanish invasion. As an indigenous Andean, Guamán Poma had ample exposure to the communities about which he writes, providing a distinctively native perspective on pre- and postconquest Peruvian history. Despite his reticence on the topic of textile symbolism, the drawings that illustrate his text help describe visually the complex relationship between textiles and social rank that existed under the Incas. Guamán Poma's drawings of Topa Inca and Huayna Cápac feature the Inca sovereigns wearing *uncus* composed entirely of *tocapus* like the Dumbarton Oaks example. His images of commoners, in contrast, usually feature men wearing plainer *uncus* that may only have one repeated *tocapu* motif, if any. This suggests that wearing a tunic composed of many *tocapus* carried a great amount of privilege and probably signified some sort of domination, whether territorial or ideological. However, one difference between Guamán Poma's drawing and the surviving Dumbarton Oaks tunic is that his *tocapus* are arranged in a discernable order, with the same motif running across the tunic in a diagonal line, whereas the Dumbarton Oaks one is arranged without any sense of strict pattern.

Scholars have labeled some of the recurring *tocapus* that are found on several surviving *uncus* from the pre-Columbian and early colonial periods.

- *casana* motif: four squares inscribed into a larger square
- *collcapata* motif: checkerboard pattern; a miniaturized version of the military tunic
- "key motif": a diagonal line culminating in squares at each corner with squares in the other two corners

Each of these motifs can be found on the Dumbarton Oaks tunic, along with a slew of as-yet undeciphered *tocapus*, some of which are found in other surviving *uncus* and others that were apparently invented for the purposes of this particular tunic.



8.8 Tunic with tocapu *design from the Dumbarton Oaks collection. This tunic would have been worn by an Inca ruler.* (© Dumbarton Oaks/Pre-Columbian Collection/Washington, D.C.)

8.9 Viracocha Inca depicted wearing a tunic with a full tocapu *design* (Felipe Guamán Poma de Ayala)

Featherwork

Featherwork was held in great esteem by the ancient Andean peoples. Its place at the top of the aesthetic hierarchy reflects the difficulty with which feathers were acquired by coastal and mountain people from inhabitants of the Amazonian jungle, where the greatest diversity of iridescent feathers was found. By Inca times feathers had been used in the production of crafts, especially textiles and tunics, for several hundred years. Despite their fragility, several featherwork pieces collected in the extremely dry coastal desert have been preserved in a remarkably pristine condition.

Though little is known for certain regarding specific dates of production and place of manufacture, many of these pieces are certainly pre-Inca and reflect Wari or Wari-related figural iconography, defining a more abstract tradition, and others are clearly Chimú. The feathers have been identified as scarlet macaw or red-and-green macaw for the red feathers, blue-and-yellow macaw for the turquoise and yellow, razor-billed curassow or Salvin's curassow for the dark brown-black, and great egret or snowy egret for the white. Other known examples of featherwork include a Tiwanaku-style hat and a series of large, simple turquoise and yellow checkerboard banners. Feather headdresses adorning miniature gold and silver human effigy figurines associated with the Cápac Hucha ceremony are also known.

Metalwork

In the hierarchy of Inca aesthetics, metalwork ranks below that of stonework, textiles, and featherwork. The Incas drew upon three millennia of metallurgical traditions in the Andes to produce a wide range of objects in three primary metals—gold, silver, and copper—and other metals such as bronze and tin as well as sophisticated alloys. A commonly accepted theory holds that gold work began in the Peruvian highlands in the middle of the second millennium B.C.E. and spread north to Ecuador and Colombia, eventually reaching Panama and Costa Rica by the second century C.E. and Mexico by the ninth or 10th century.

The Incas incorporated non-Inca metalworkers into their workshops, who typically brought with them their own stylistic and technological traditions that the Incas willfully shaped into their overall aesthetic program, which some scholars refer to as a "corporate style." Much Inca metalwork and bronze technology was borrowed from the north coast Chimú Empire, the largest polity of the time, which Topa Inca, the 10th Sapa Inca, conquered around 1460–70. Precious metal production, textile arts, and feather- and shellwork had reached unprecedented levels under the Chimú, and objects made for the elite had become ostentatious displays of wealth and technical virtuosity. Changes in scale and quality of execution indicate the Incas assumed Chimú techniques and styles, then quickly adopted them to fit their overall message. Overall, Inca metalwork was the most mimetic and restricted of the Inca arts.

A comprehensive understanding of Inca metalwork is sadly limited, however, by virtue of the Spanish desire to acquire and melt down precious metals during the conquest. Even though Spanish documentary sources report large-scale sculptures of gods, rulers, and camelids, almost all have been lost. The story of Atahualpa's ransom alone is enough to lament the loss. Atahualpa was the son of Huayna Cápac and fought his half brother Huáscar for the right of succession; emerging victorious, Atahualpa was the ruler when the Spanish arrived. As the story goes, the captured Atahualpa promised Pizarro enough gold to fill a room 6.2 meters by 4.8 meters (20 × 16 ft.) up to a line 2.5 meters (8 ft.) above the floor. Thousands of Indians are said to have arrived with vessels, pitchers, and jars, all made in gold and silver. Yet, the thoroughness with which the Spanish acquired Inca gold and silver was a consequence born not from a collector's appreciation of Inca artistry but from a conquest-driven desire for the economy of precious metals. Melted down and shipped across the Atlantic, much of the metal now gracing European churches had its origin in the Andes.

Gold and Silver

Gold and silver were part of an elaborate symbolic system and had specific associations in the Inca cosmological world. Gold, for the Incas, was the sweat of the Sun and was associated with the masculine world; the Sapa Inca referred to himself as "the son of the Sun." Silver was the tears of the Moon and was associated with the feminine. Together they formed and reflected essential symbolic dualities of Sun and Moon that found further association with other fundamental Inca dualities such as light and dark, day and night, heaven and earth, male and female, right and left, and upper and lower. The mining of gold and silver, symbols of power and prestige, was closely monitored by the state, and possession of any amount of gold or silver objects was highly regulated and would have been available only to the elite. Value for the Incas ultimately derived not in the material itself but when shaped into images. For this reason one might understand reports of confusion in the faces of Inca bystanders witnessing the melting down of gold and silver objects into bars. Erased of shape and function, the simple mineral value was little or nil for the Incas.

Techniques and Metallurgy

Gold occurs in metallic form in nature and is easily worked. It can be obtained from rock by mining or from rivers by panning (placer mining), in which river gravel is washed in a pan, causing the gold flakes, nuggets, and grains to settle at the bottom. Silver, less frequently detailed than gold in the chronicles, has a dendritic, or fibrous, appearance in its natural state and was most commonly mined in its ore form, for example, at the famed mines of Potosí, Bolivia. In underground mining the Incas followed veins of ore in narrow shafts, some allegedly up to 75 meters (246 ft.) long. Later Spanish exploitation of mines limits the archaeological evidence of purely native mining practices.

To separate the metal from the rock the ore was smelted, a chemical process activated by heating the crushed rock in crucibles or furnaces. Three types of furnaces were used. One was a simple pit in the ground used to reduce minerals rich in precious metals. Metalworkers in southern Peru used portable ceramic wind furnaces called *buairas,* which were shaped like flowerpots and had small vents in their walls to create an updraft. The molten metal sank to the bottom of the furnace, where it solidified and was removed for further processing. And the third, known as a *tocochimpu*, was discussed in the chronicles primarily in the context of refining metal.

Sophisticated alloying, almost always employing copper, increased hardness, resistance, ductility, malleability, color, and shine. The earliest working technique was basic hammering of nuggets into sheets over stone anvils, followed by decorative applications employing cutting, chasing, scribing, embossing (hammering the metal over a carved

...ually of wood), and repoussé (working the ... freehand while it rests on a yielding surface such as pitch or soft wood). Buffing and burnishing the surface with abrasive sand and stone or bone polishers finished the surfaces. In the case of multipiece objects the items were joined by tabs, staples, nails, and wires, and in some cases soldering, welding, and sweat or pressure welding. The lost-wax method *(cire perdue)* of casting developed a little later.

Male and Female Effigy Figurines

A growing number of male and female effigy figurines are being discovered atop high-altitude peaks that are linked to the child sacrifice ceremony, Cápac Hucha. In the ceremony unblemished boys and girls on average aged six to 10 were symbolically married in Cuzco's central square before returning homeward to be sacrificed and interred. Votive figurines in precious metals usually accompanied their interment. One particular mummy was found at an altitude of 20,000 feet atop Cerro el Plomo in Chile. The child there was layered in elaborate textiles and accompanied by numerous figurines, which were similarly wrapped in exquisite miniature textiles and adorned with feathered headdresses.

Another burial related to the Cápac Hucha ritual was found in 1985 by a group of mountaineers on the southwestern flank of Aconcagua, the tallest mountain in the Western Hemisphere. Like the El Plomo mummy, this child, a male, was accompanied by figurines. Three were male figurines—one of gold, one of a silver-copper alloy, and one of *Spondylus* shell. They averaged about two inches in height and were clothed, had plumed crests, and carried little bags containing fragments of coca leaves. Three other statuettes of llamas, one of gold and two of *Spondylus*, also accompanied the mummy.

The figurines follow the established canon of Inca visual art. Ethnohistorian Colin McEwan and anthropologist Maarten van de Guchte found that virtually identical figurines have shown up in burials thousands of miles apart, suggesting that groups of figurines may have been produced for specific events and then carried to their different destinations by parties of priests, nobles, and children. Though masterfully made, the details in hairstyle, anatomy, and headdresses are limited. Male figures sport a braided headband, or *llauto*, and boast oversized earspools that identify Inca elite. The females have long hair arranged in braids and tied at the back. The male figurines were sometimes shown with a bulge in the cheek, signifying the chewing of coca. Both male and female figurines, as McEwan and van de Guchte point out, display characteristic gestures found nowhere else in Inca art: Both arms are raised so that the hands, with palms turned inward, touch the chest. Figurines found in other contexts suggest that they were offered to the gods on other occasions as well.

Floral and Faunal Effigies

When the Spanish arrived at the Coricancha, the main temple in Cuzco, they found an extraordinary effigy garden made entirely of gold and silver sculptures. The centrality of maize in Inca ritual and subsistence is well documented, and according to chronicler El Inca, Garcilaso de la Vega, it is similarly well represented. The following is Garcilaso's description of the Golden Garden: ". . . they made fields of maize, with their leaves, cobs, canes, roots and flowers all exactly imitated. The beard of the cob was of gold, and all the rest of silver. . . . They did the same things with other plants, making the flowers, or any part that became yellow, of gold and the rest of silver. In addition to all this, there were all kinds of gold and silver animals in these gardens, such as rabbits, mice, lizards, snakes, butterflies, foxes, and wildcats. . . . Then there were birds set in the trees, as though they were about to sing, and others bent over the flowers, breathing in their nectar." Many such gardens were said to have existed throughout the empire.

While most objects such as those listed by Garcilaso were melted down and shipped to Europe, the few that survive display a masterful propensity for realism that augments the Incas' spiritual affinity with their natural environment. For example, a pair of llama sculptures in the collection of the American Museum of Natural History is arguably the finest examples of Inca silversmithing currently known. Reportedly found near a sacred rock on an island in Lake Titicaca, one figurine has striated, crimped silver sheets representing the hanging fleece of the long-haired llama, and the other wears a red blanket on its back, which is reported in the Spanish chronicles as being associated with royalty. The representations are both lively and imaginative, while the clarity of the forms is carefully realistic.

Drinking Vessels

Gold and silver drinking vessels, or *aguillas*, used to consume *chicha* (maize beer) were emblematic of Inca wealth and power and played a conspicuous role during state and religious ceremony. The general population would have used wooden *keros* and ceramic drinking vessels, whereas precious metal vessels, typically made in pairs for ritual drinking, were distributed and used according to rank. The Inca court and their provincial administrators would have been typical recipients. Precious metal drinking vessels were also associated with the generosity—if not the tactical diplomacy—of the state. Several 16th-century chronicles report that *aguillas* were offered to recalcitrant groups prior to confrontation with Inca military forces, with acceptance of the gift symbolizing capitulation to the Inca order.

Ritual drinking vessels in the shape of human heads, like much artistic or craft production, predate the Incas by at least 500 years. Made by beating flexible gold or silver sheet metal over a solid wooden form, the creations typically offered stylized treatment of mouth, cheeks, eyes, and nose. Stylistic variation by region was common. For example, vessels with prominent beaklike noses, almond-shaped eyes, and simple upturned mouths were produced along the southern and central coast of Peru.

Utilitarian Objects

The range of utilitarian objects made in metal is vast. Many of the following objects were produced for thousands of years in the Andes before their emergence in the Inca Empire. The list includes single-piece hinged tweezers, or depilators, a traditional tool of basic hygiene used to pluck out unwanted hair; bracelets and rings, sometimes with incised geometric designs, made by hammering out a thin metal sheet; silver and bronze shawl pins, or *tupus*, a basic element of female dress used to keep mantles or shawls closed, typically with a large spade-shaped head and a long, thin tapering shaft; lime spoons, which resemble *tupus*, used to remove lime from specialized receptacles as part of the coca-chewing ritual process; hammered disks or bangles, which were especially popular among Chimú metalworkers of Peru's north coast, often sewn into shoes, tunics, mantles, neckpieces, headpieces, and other items of dress; bells, probably strung around the ankles during festivals and dances; parabolic mirrors, often disk-shaped, used for personal or ceremonial purposes; T-shaped ax heads, sometimes with crescent-shaped edges, either meant to be hafted or used alone as a handheld tool; chisels, similar to axes but typically without the crossbar or T component; and knives known as *tumis*, some with modeled decoration used ceremonially, which were among the most common and widely disseminated objects and were typically made of copper or bronze tin. Many of the above items, such as tweezers, disks, mirrors, *tumis*, and *tupus*, are pierced so that they could be worn with a cord or hung from a peg. Also, many were found in burial contexts.

Precious Metals in the Coricancha

As the primary temple of the Inca Empire, dedicated specifically to Inti, the sun god, it should come as no surprise that the Coricancha housed a variety of precious metals in idol form. As mentioned above, it was home to a golden effigy garden. The Coricancha also housed the golden image of the Sun, named Punchao, which was brought out each day to greet the Sun and returned inside at night. The temple's interior also had been sheathed in gold plates half a meter or more in length, a fact that particularly delighted the Spanish. They removed 700 plates weighing about two kilograms (4 lbs.) each, melted them down into bars, and shipped them to Spain.