THE GENIUS OF
Pre-Columbian
GOLD

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and

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INTRODUCTION

David Bernstein Fine Art is pleased to present ***The Genuis of Pre-Columbian Gold,*** an online exhibition introducing collectors and enthusiasts to a sampling of the range of gold objects produced in the New World prior to the arrival of Europeans. The collection includes 55 ancient South American goldworks carefully assembled by David Bernstein over the course of his career.

The exhibit highlights the beauty and sophistication of the ancient metalworking traditions of Colombia, Costa Rica, Ecuador, Panama, and Peru, covering a time period from1500 BC to AD 1500. These gold treasures are among the most interesting gold objects in human history and have fascinated notable luminaries including the chronicler Peter Martyr, the famous German artist Albrecht Durer, and renowned mid-Century scholar Allen Wardwell, curator at the Art Institute of Chicago, who organized the ground-breaking exhibition The Gold of Ancient America in 1968.

As physicist Neil de Grasse Tyson has said, and gold is a byproduct of exploded stars, and we are all made of stardust. Many of these goldworks were owned, worn, and buried with high-status individuals such as rulers, sham-ans, and elites – and were intended to convey wealth, power, and status, as well as to ensure the continuum of the relationship between the sun and the spiritual connection to the afterlife. Gold was perceived as magical, spiritual and believed by the ancients to possess transformative power. Complex motifs played a symbolic and sacred role, linking rulers, shamans, and elites with the deified forces of nature. As gold was worn in processional ceremonies, the kinetic movement reflected the glimmer of the sun and the power of the cosmos.

The native peoples of the Americas experienced great culture shock when New World conquistadors invad-ed and melted the gold down for their treasuries. The natives could not understand why the conquistadors melted the gold into simple ingots, destroying the gold's spiritual essence. To the ancients, the value of gold was held within its artistic form and its connection to the cosmos, which gave the gold meaning and power. Melting gold, according to the Pre-Columbians, would be the modern-day equivalent of turning de-signer haute couture into rags.

Many pieces in this collection have either been illustrated in the literature or are comparable to objects in museum collections worldwide. The objects in the exhibit were acquired in the U.S. from old collections and private collectors over the past 30 years, in compliance with the Memorandum of Understanding between the governments of Costa Rica, Colombia, Ecuador, and Parama, and Peru with the United States. Many of the pieces come from the estate of Jan Mitchell, a well-known collector, and several are illustrated The Art of Pre-Columbian Gold, published 1985. Several other pieces were published in The Pre-Columbian Art of Mexico and Central America, by Hasso Von Winning in 1968.

This publication features an illustrated essay about the history and techniques of metalworking in the Ancient Americas featuring full-color plates of selected objects from the exhibition. At the end of the illustrated essay a is a full-color catalog of all 55 lots in the collection, including photos and detailed descriptions. The catalog is followed by a bibliography focusing on the literature on Pre-Columbian gold.

An exhibit accompanying this publication is on view at the website of David Bernstein Fine Art. The online exhibit corresponds with the illustrated catalog on page 49 of this publication. Additional detail views of each gold work in the catalog, along with reference materials, can be viewed online at:
https://www.precolumbianart4sale.com/exhibition/20/exhibition_works/

See those lights flashing like paparazzi? Each one is a supernova - the blazing death of a giant star. Stars die and are born in places like this one, a stellar nursery, they condense like raindrops from giant clouds of gas and dust. They get so hot, that the nuclei of the atoms fuse together deep within them to make the oxygen we breath, the carbon in our muscles, the calcium in our bones, the iron in our blood. All was cooked in the fiery hearts of long vanished stars. You, me, everyone, we are made of star-stuff. We are star-dust brought to life, then empowered by the universe to figure itself out - and we have only just begun,

Neil de Grasse Tyson

“I do not marvel at gold and precious stones, but am in a manner astonished to see the workmanship excel the substance."

(Peter Martyr, 1521)

Also, did I see the things, which one brought to the King from the new golden land… all sorts of wonderful things for various uses, that are much more beautiful to behold than things of which miracles are made. These things were all so precious that one estimated their worth at a hundred thousand guilders. And I have seen nothing in all my livelong days which so filled my heart with joy as these things. Then I saw there wondrous artful things and I was astounded at the subtle genius of the people in foreign land.

The artist Albrecht Dürer, 1520

It is these opulent objects which attracted the early Spanish Conquistadores and led to the wholesale sacking of sacred sites and tombs proved to be the first forms of appropriation of gold by the Europeans. These magnificent objects were melted into ingots and sent to Seville. The Spanish crown was heavily in debt as a result of the 780 years of the Reconquista wars (AD 718 - 1498) to rid the Moors from the Iberian Peninsula. These debts were paid in metal, not money, and therefore the accumulation of precious metal motivated the crown to develop colonies in the New World, specifically for sending gold back to the Spanish Treasury.

Jose Lopez Arellano, *Gold in the Americas,* 2008

Pre-Colombian Gold Defined

Pre-Colombian gold refers to the spectacular body of objects wrought from this precious metal and produced by the indigenous cultures of the Americas prior to the arrival of Christopher Columbus in 1492.

The cultural period before the Spanish Conquest is known as the PRE-COLOMBIAN ERA. The American continent was originally populated over 17,000 years ago by people who migrated between Asia and North America across the Bering Strait land bridge. Waves of migration followed the Woolly Mammoth (*Mastodon Mammuthus*), travelling down the North American continent, through the Isthmus of Panama, all the way to the southernmost tip of South America. These early peoples established settlements in a wide range of diverse habitats, from wet tropical lowlands and arid deserts to the Andean highlands.

From these origins, the Pre-Colombian people developed organized societies built on the previous developments, covering a period of 4,000 years, beginning with the emergence of cities around 2500 BC. These developments included a highly sophisticated and extensive network of drainage and irrigation canals, built to manage the extremes of weather. In the Andean highlands, they developed earthworks, terraced farming, and raised-field agriculture. Along the coast of Peru and the Caribbean coast of Colombia, they cultivated rich alluvial soils with the use of the most ingenious hydraulic systems developed in ancient times.

The stability and prosperity afforded by mixed economy of agriculture and trade gave rise to complex society. This in turn allowed for the flourishing of Pre-Colombian art and craftsmanship, especially metallurgy, to satisfy the growing demand by the ruling class for high status totems and adornments. Pre-Colombian gold shares common themes throughout the different cultural phases of development.

Towards the end of the fifteenth century, the world was in a state of flux with multiple events contributing to the fierce competition between Spain and Portugal in the quest for new trade routes. The historical events started with the fall of Christian Constantinople to the Ottoman Empire in 1453, blocking the land routes from Europe to Asia. The Ottoman victory was due to the discovery of gunpowder in China. In 1498, the 700 -year Reconquista Wars ended, which led to the expulsion of the Moors from the Iberian Peninsula, leaving Spain with overwhelming war debts. The Catholic Church was under pressure to change its views on profiteering, culminating in the Peace of Westphalia in 1648. Protestantism became a power catalyst for the rise of mercantile class and a modern economy.

In 1488, Bartolomeu Dias, representing Portugal, rounded the Cape of Good Hope in Africa, opening up trade routes to the East. Developments in navigation, including the use of a compass, the sternpost rudder, and the smaller caravel, resulted in the success of Columbus' voyages seeking new trade routes to India. Queen Isabella personally financed Columbus' voyages in hopes of besting Portugal's routes around Africa to the rich trades in Asia.

We know the story of Columbus' arrival in the New World, and his description of the inhabitants as "Indians". The amount of gold found in the New World doubled the amount of gold in the entire known world up to that time. Precious metal was the only way for a government to pay debts at that time.

The abundance of gold in *El Dorado*, the New World, excited a frenzy amongst the Spanish conquistadors. While the finely wrought objects excited admiration and awe, much of what the conquerors could plunder, seize, or trade in Peru, Columbia and elsewhere in the Americas was melted down in the 16th and 17th centuries and shipped back to Spain for the Church and Royal coffers. The indigenous peoples could not understand the reasons why the Spanish melted down and destroyed these spiritually imbued golden objects into ingots, bars and coins. The invaders were not, however, aware of the centuries-worth of gold buried in tombs and cemeteries. This hidden treasure only came to light beginning in the late 1800s, as territories expanded. The extensive plowing of fields and building of roads in the modern era led to the accidental discovery of cemeteries containing ancient gold artifacts.

Fig. 19. Aztec Metalworkers in Friar Bernardino de Sahagún and Nahua artists, Florentine Codex Book 9, Fol. 53v, AD 1575–77, Biblioteca Medicea Laurenziana; see also cat. 225.

Cosmology and Iconography

The cosmos was conceived as having three levels: human beings, along with certain animals like deer and felines, occupied the terrestrial plane, while the upper and lower worlds were the domains of the spirits. The underworld was the realm of water spirits, inhabited by mythical animals who governed its paths and caves. The heavenly realm was the world of deceased ancestors and cosmic deities. In *Darien Gold Pendants of Ancient Colombia and the Isthmus,* Ana Maria Falcetti writes: “According to the mythical interpretation of the world, all the elements of reality - the natural world, the cosmos, and humanity - are intimately linked, and living beings are formed by the same properties as part of a multidimensional reality. In a ritual context, people can be transformed into other beings in the cosmos, such as animals, deities, or ancestors. (Falcetti, 2008).

In the ancient Americas, an individual could embody a mythical or spiritual force or contact the ancestors through meditation, dreams, and with and with the use of hallucinogenic drugs, masks, ritual ornaments, music, rhythmic chants, and dance that induce altered states of consciousness. In rituals directed by the shamans, individuals were believed to access other levels of reality including the cosmos and ancestors.

Gold was used as a vehicle for personal spiritual transformation and metamorphosis. The spiritual motifs featured in Pre-Columbian goldwork include cosmic deities and mushroom deities (above and right) jaguars, Saurians, water birds, crocodiles, frogs, and deer. Deities and personages are often depicted with elaborate headdresses featuring spirals (representing the cosmos) avian characteristics, or dome-shaped mushrooms, all of which played a role in Pre-Colombian cosmology. Animals that were emblematic of water and fertility were especially prominent, reflecting the marine environment as well cosmological beliefs. In the Isthmus of Panama and in Colombia, water related animals included sharks, and Saurians and frogs.

The sun and its sacred and celestial power is the source of much of ancient Pre-Colombian mythology surrounding gold, which was believed to be a source of power for both ruler and shaman. The greater the status of a person, the greater his wealth of gold, which ensured his status in the afterlife. Craftsmen (goldsmiths, weavers, potters) represented a specialized class that was ranked above the ordinary people. The goldsmith's status was linked to a seemingly supernatural ability to transform metal into precious, ritually significant objects that gave tangible form to symbolic and cosmological ideas.

A critical essay by MIT Professor Heather Lechtman, *Andean Value systems and the Development of Prehistoric Metallurgy,* stressed the importance of "essences" in Andean metallurgy. The “essence” was transformative and spiritual, and it was up to the artisan to “magically” bring the true essence to the surface from within the nature of the metalwork and woven textiles. Over the centuries these metalsmiths employed an array of metalworking techniques to achieve rich and colorful golden surfaces. Heather Lechtman writes: “revealing its [the metal’s] inner structure [is] related to these fundamental Andean concepts of the divine animation of all material things”.

These splendid gold adornments were intended to project divine ancestry, elite status, power, and wealth, in both this world and the afterlife. Competition among the many lords, *caciques,* or chieftains - for both worldly and spiritual power - resulted in competition to seek out valued natural gold resources. This in turn spurred the ingenuity of the artisans and the production of increasingly beautiful and complex gold objects. Possessing gold provided the ancients with direct access to the power of the sun. Gold atoms are in fact byproducts of supernovas, so in essence, the ancients’ beliefs were correct.

Shared symbols are important in social communication and in the determination of cultural identity. Beyond the distinctive expressions of local mythologies, constant and basic lines of thought are recognizable: this phenomenon relates to the very nature of mythology as a way of explaining the world in terms of multiple analogies and transformations. Thus, it is possible to find central principles associated with the essence of mythical thought. Darien pendants, with their stereotypic diagnostic features, might represent a synthesis of symbols linked to a basic "Pan-American" symbolic framework that supported different local mythologies.

Ana Maria Falcetti

ANCIENT METALLURGY

Much of the early gold came from alluvial nuggets found in the vast numbers of riverbeds downstream from the Andes. Starting around the 7th century, mines were dug along rich veins of minerals near the surface. These deposits naturally contained a mixture of gold, silver, and copper in various proportions. Small amounts of other impurities are also present in the metal. Some Pre-Columbian ornamentation is made from *tumbaga*, a Spanish term for an alloy of gold, silver, and copper. The composition of *tumbaga* can vary widely, and in fact, many of the cast *tumbaga* ornaments in this collection have been XRF (X-ray fluorescence) tested and reveal a high gold content (in some cases more than 90 percent).

ANIMAL ICONOGRAPHY

In Pre-Columbian mythology, the only animals who can move between worlds are the puma, and terrestrial animals that can climb trees and also swim. Other animals that undergo metamorphosis, such as frogs and butterflies, are symbolic of transformative states. Birds and raptors, creatures of the air, are often anthropomorphized with human traits, symbolizing spiritual or psychic flight.

Pre-Colombian cultures also ascribed symbolic and spiritual significance to subtle distinctions in the colors and textures of the metal, as well as to the different light reflective properties of matte and shiny surfaces. Ancient metalsmiths deliberately manipulated the variable components of metal alloys to produce a range of surface color and tonal contrast, which could be further enhanced by depletion gilding, also known as *mise-en couleur*, which involved heating the surface. Copper oxides were then removed with natural acids such as oxalic and/or uric acid to reveal a microscopically thin layer of gold. Similarly, silver present in the alloy could be removed by acid as well, allowing the metalsmith to control the tones of the finished object. The properties of the gold/copper alloy allowed for lowering the melting point to cast in greater detail.

This freedom stimulated the artistic imagination and creativity of the goldsmiths, who fabricated fantastical three-dimensional images of birds, amphibians, and other creatures found in the wetlands and jungles, in addition to anthropomorphic forms and intricate geometric designs.

Moche Gold Pincer with Embossed Large-Eared Bat Face, c. AD 200 - 700

Diquis Lost-Wax Cast Gold Eagle Pendant, c. AD 1,200 - 1,500

***Lost wax casting (cire-perdue)*,** another quintessential Pre-Colombian technique, was primarily practiced in Colombia and the Central America, and entailed a multi-step process. An exact model of fine charcoal and clay, the armature, was crafted into the intended form. After this, skillfully applied sheets of beeswax were used cover the armature to create a negative impression. A fine clay slurry was then applied over the wax. Once dried, another layer of course clay casing was applied over the entire model. Wood pins, or chaplets, were pushed through the outer clay and wax, and into the armature, to maintain alignment. Then the entire casing was heated so that the wax would melt and could be poured out, leaving a negative impression of the original modeled charcoal clay armature. Molten gold mixture was then poured into the sprue (a small funnel shaped channel for pouring the gold into the mold). When the gold cooled down, the outer clay casing was broken, revealing the gold image that had replaced the wax, leaving a gold replica of the original armature. The excess gold that had filled the chaplets and sprue was then snipped off of the gold casting, leaving behind small circular holes in the final gold object. The hole left behind by the sprue and chaplets was covered with a gold patch, and polished to conceal the hole. Finally, the gold artifact would be embellished by polishing or other surface enhancements. Such enhancements include burnishing, carving, or even hammering the appendages - for example a frog's hind flippers or an eagle's wings. The most skillful master goldsmiths had the dexterity to cast complicated works, sometimes with multiple adjoining figures.

By the 9th century, the larger Chimu Kingdom expanded, and more golden objects were demanded to fulfill the needs of the ruling class. Gold-rich ore became scarce. The Chimu metalsmiths were obligated to use a lower gold content ore, the color of which needed to be improved.

To improve the color, the Chimu took the surface gilding technique to the next level. Low gold alloys were gilded to enrich the surface, and used to create large masks, crowns, and beakers. These objects appeared golden on the surface but were essentially high copper alloys.

Often, a vermillion-colored natural pigment known as cinnabar (mercury sulfide) was painted on top of golden surfaces to decorate the intrinsic color tone of the alloy. The red pigment was thought to be protective, preventing the escape of the gold's metaphysical essence.

This Chimu gold mask shows rich traces of cinnabar which would have originally been painted on the entire surface. This practice can be seen as early as with the Chavin culture (circa 800 BC).

Stylistically, pre-Columbian gold sculpture stands in a class by itself in comparison to gold works from other ancient cultures. We do not find the meticulous filigree and inlay that is so much a part of Greek and Etruscan jewelry. The repousse and incising is not as fine and bold as that of Mesopotamian styles, and the exquisite cloisonne and in-lay techniques of Egyptian jewelry do not find counterparts in the new world. Rather, ancient American gold owes its impact to a simple. three-dimensional treatment of form. These little sculptures should be regarded as one of the greatest technical and aesthetic achievements of the American Indian.

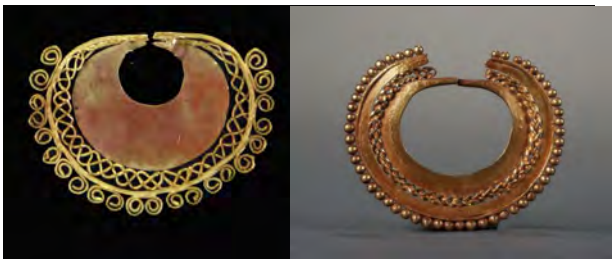
Allen Wardwell, ***Gold of Ancient America,*** 1968

Pre-Columbian Goldwork Technologies

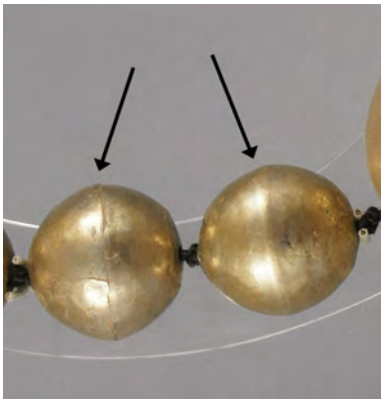
Annealing involves hammering ingots of metal into larger sheets with fine-grained stone hammers and polished stone anvils. With repeated hammering, the gold sheets would become hardened, springy, and eventually brittle. The annealing technique consists of alternating fire-heating with wet-drenching to render the metal more malleable so that it could be used to create ornaments with large, bright, reflective surfaces.

Granulation is the process of heating small granules of similar metals and using a copper compound with organic glue to attach the small granules to a larger piece. The granules are applied in an ordered manner to create a decorative surface. In early Ecuador, metalsmiths were even able to attach platinum-gold alloy beads to an ornament using this technique. Platinum has a very high melting point, making this a sophisticated process.

Filigree is a technique using thin wire to create a decorative pattern. Gold is the ideal material for filigree work because of its ductility—the ability to draw wire from heated ingots. The wire designs were soldered onto a larger piece for decorative purposes. The Pre-Colombians were able to create highly delicate spirals, chains, and twisted coils using filigree. Another technique, false filigree, involved making a casting that imitated the look of authentic filigree. The earring on right is an example of using the combination of granulation and filigree.



Soldering and welding was perfected in Peru by the Moche artisans. They took great care to master the technique without collapsing the hollow spheres by over-heating them. These artisans were so talented that they could solder large beads without the seam being seen by the naked eye. To solder two pieces together, a flux is necessary. This flux would have been created from mineral salts and naturally occurring sulfides, whereas today, zinc is used.



Ornamentation

This exhibition features luxury adornment, ceremonial paraphernalia, and votive offerings fabricated for high-ranking individuals. These varied objects also represent different techniques such as annealing, soldering, casting, granulation, fusion welding, and a variety of surface enhancements. Casting techniques developed over the centuries from simple sand cast objects to delicate lost wax casting.

Pre-Columbian golden adornments include:

Helmets and crowns. Headgear had an early presence as far back as 6,000 BC in Chile and was one of the first symbols used to establish status. The earliest headdresses were made of textiles, but the same styles were later adopted in gold, starting with simple golden headbands. Golden headdress ornaments with simple bands and cut-out shapes resembling feathers first appeared during Chavin times. The Moche created elaborate headdresses with beautiful ornamentation. In Colombia and Panama crowns evolved into full helmets.

Masks. What are referred to as masks in Pre-Colombian times are actually embellishments for mummy bundles. True masks have eye openings and were used in dances to depict different characters. In Chimu times, the masks reached an apex in scale, ranging over 30" in width.

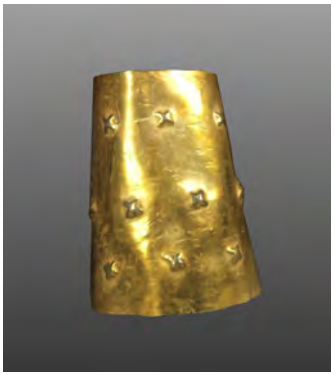
Nose and ear ornaments and labrets. The Spanish called the natives "Orejones" (large-eared people) because of their practice of stretching their earlobes with large earrings. Like other body ornaments, the ear ornaments represented status and wealth. Nose ornaments also portrayed a individual's personal animal totems. Labrets were more common to Ecuador and Mexico.

Necklaces and beads. Beads used in necklaces were among the first jewelry in cultures from around the world and were created from all kinds of materials. Across all of the Pre-Columbian cultures, elaborate costumes included beaded necklaces varying in size. Aside from plain spherical beads, beads were also crafted to resemble a wide range of motifs, especially animals.

Breastplates and pectorals. Part of the costume for very high status individuals can include pectorals, primarily in round or semi-circular shapes. The Cocle culture in Panama had the most elaborate disc pectorals with deep embossed designs, while Colombian cultures employed both circular and heart shaped pectorals, some with and some without designs. Warriors would often wear highly polished pectorals intended to intimidate their adversaries.

Pendants. These appear in all the cultures in a large variety of motifs of figurative and animal forms. Almost all of them have suspension devices such as loops or other attachments. The larger and more elaborate pendants were for the wealthier high status individuals.

Bracelets and finger rings. Personal adornments such as bracelets, cuffs, and finger rings could be included as part of an elaborate costume. These objects are found in all the cultures, especially in the Sinu culture of Colombia.



Cloak pins and dippers for lime containers. These were personal items and ranged in simple to elaborate in style. Cloak pins were also known as *tupus,* and were used to fasten tunics. Lime dippers could be finely detailed castings of amazing quality. The dippers were usually attached to a lime container with a cord and were used in the coca ceremony.

Ceremonial beakers. Beakers were crafted in metals, including gold, as well as ceramics and even carved wood. During the Chimu period and the subsequent Inca period, gold and silver vessels were produced in large quantities. The Chimu beakers tended to be made of a single hammered gold sheet over a wooden form, while the Inca would solder additional elements onto the beaker.

Diquis Costa Rican Gold Shaman Holding a Bell, c. AD 1,000 - 1,500

The Golden Route from Peru To Mexico

The Americas 1587 Map by Abraham Ortellius

It is believed that gold working started in the highlands of Peru around 1500 BC. A tomb was found at Wayaka, buried with hammered gold foil sheets. The largest sheet was found within the mouth of the interred. Goldsmithing technology spread North through Colombia onto the isthmus, and finally to Mexico. Simultaneously, it travelled South through Peru and Bolvia. At first the gold technology evolved slowly from around 200 BC, then increased more rapidly through the fourth century, when most of the metalworking technologies were known. The last technical development arrived with the Inca in the 13th century whe metal inlays were used to combine different colored metals.

The next section covers the major gold working areas associated with the collection: Andes, Columbia and the Isthmus of Panama and Costa Rica. In the Andes, many pieces come from Peru with examples from Chile and Ecuador. Bolivian and Argentine works in gold are scarce. The second division is Colombia-Ecuador, with a rich variety of gold working traditions spread over many different parts of the country. The third area, Panama and Costa Rica shares many of the same styles while still having its own styles that are unique. An interesting development known as the "International Style" combines the iconography from the route from Northern Colombia thru Panama, to Costa Rica. The people from all these areas shared the belief that there was an afterlife, and that goods buried with them would serve them and maintain their status in the next world.

THE ANDES AND PERU

In the Andes, gold flowed down from the mountain streams. Gold is among the rarest of metals and can occur in nuggets, unattached to rock, that are easily worked. It is easily mined from mountain streams by panning, a technique using running water to separate the grains of gold from the river sand.

Metalwork and textiles were the two most important signs of status and wealth, and they helped to define relations among people. Peru was the richest of all the New World Kingdoms.

High status tombs have yielded important finds of metal objects and other luxury goods; it was the practice in every culture to bury high-status individuals with their luxury possessions, including many objects made solely to accompany the dead.

The living had to amass their own wealth, and the desire for accessories such as staffs, rattles, goblets, war clubs, knives, jewelry and headdresses seems to have been insatiable.

The ornaments themselves, created from noble metals such as gold, silver and bronze, were thought to have had magical properties, and to encase the body with such accessories suggested that the individual came from the sacred, celestial world of the sun, the moon and powerful spirits.

Smelting (depicted at right) only became known by the late Moche Period. Prior to this time, the only way to achieve a high gold content was through repeated hammering and heating the metal into thin sheets. Early Chavin gold works were mainly flat, with incised or cutout designs and sometimes ornamented with dangles or inlayed with shell details. As time passed, trial and error motivated the goldsmiths, similar to Middle Ages alchemists who were searching to find ways to turn basic metals into gold. This resulted in a variety of techniques including laminating copper with thin layers of gold, but most objects acquired a golden or silver surface color through depletion gilding. During the Late Moche / Early Chimu Period, we find evidence of the use of an ingenious and simple form of kilns, also known as chimneys, to create sufficient heat for smelting metals. These chimneys had as many as four levels upon which to place the metallic ores, and a source of heat generated by charcoal and forced air. At first, these chimneys were placed on cliffs with strong updrafts, which fueled the charcoal. Blow tubes, several feet in length, used human-generated forced air to stoke the fire as opposed to billows, which were used in Europe. These tubes were used were used by three or four people at a time. A scientific analysis of the charcoal left behind in these kilns reveals the use of gold, copper, and tumbaga, with concentrations of gold as much as 16 times that of other ceramics. (See ceramic model below).

Underground mining was only practiced after the 7th century in Peru and Colombia. Gold was mined by digging long, shallow trenches along veins near the surface. Gold was mined by digging long, shallow trenches along veins near the surface. The Incas considered the mountains to be living spirits, which they believed were the source of the gold. Gold was endowed with spiritual and symbolic meaning. The kings were the owners of the gold. Only kings were entitled to gift gold objects to their subjects, who performed tasks of bravery or extreme service.

Following is a brief survey of the metalworking traditions from Peru to Costa Rica, in which each region is explored in chronological order...

CHAVIN (1800 - 200 BC)

The earliest civilization of Peru, the Chavin, established itself in the deep river valleys in the Peruvian Andes circa 1800 BC. By 800 BC the Chavin culture spread to the North Coast of Peru and brought their metal working skills with them, taking advantage of the abundance of the alluvial gold on the coast. Although the Chavin excelled at stone carving and ceramics, they also made elite ornaments using hammered sheets of gold or alloys of gold and copper. Since gold cracks easily with cold-hammering, artisans developed rudimentary pit furnaces that allowed for sufficient temperatures to make the metals malleable enough to make relatively large gold sheets. Thus, Chavin gold objects are single gold sheets that were cut to make ornaments such as crowns, ear and nose ornaments and pectorals decorated with incised, repousse and/or cutout designs. These artworks are testament to the skills of early metalworkers because great skill was required to prevent the thin sheets from cracking or melting while heat was applied to keep the metal soft and workable. Although these ornaments are small, they display a command of the material to create simple but attractive compositions.

Paracas diadem

Nasca mouth ornament

Paracas (400 - 200 BC)

Towards the end of the Chavin period, the Chavin feline cult spread to the South Coast and influenced the Paracas and Nazca art. The Paracas embroideries are considered the finest in all of antiquity. Their ceramics were decorated with colorful post-fired resin pigments. There were very few gold objects produced. Their gold objects took on their own local style, and were primarily limited to flat gold sheets with cut-out designs. They were mostly made into mouth masks and diadems or headdress ornaments.

Nasca (AD 0 - 700)

Under the Nasca, the consolidation of the South coast amounted to a real statehood. This large desert area is famous for the Nasca Lines drawn on the desert floor. These lines can only be seen from high above. Nasca ceramics are known for their colorful slip designs and their weavings employed every known technique, including some which cannot be reproduced today. These cultures produced few gold objects, and are known primary for their textiles are known for their remarkable preservation due to the dry the desert.

RECUAY (AD 100 – 600)

In the Central Andes of Peru, the Recuay, a short-lived culture of 500 years, heavily interacted with the Moche along the coast of Peru. The Recuay culture thrived due its strategic location in relation to the rest of Peru, while at the same time, it was easily defendable in the mountains. As a result, the Recuay greatly benefited from long-distance trade. The Recuay built stone homes and ceremonial centers, and primarily created ceramics known for their use of kaolin, a white clay. These ceramics are well-known features in many museum collections. The Recuay did not work in pure gold, because it wasn't abundant in the mountains, but they did leave evidence of technically advanced metallurgy with an emphasis on bronze objects coated with thick gold foil. Many of these objects were fashioned into elaborately constructed tupu pins. A ceremonial center where these gold objects were found is one of the few Recuay sites that have been studied. Below is a unique and important Recuay cast bronze scepter, plated with gold foil, collected in the 1980s. The scepter depicts a deer flanked by two standing pumas, all three of which are standing on flayed animal skins. This special item is no longer in the David Bernstein collection. There is only similar Recuay scepter, which is in the Volkerkunde Museum in Berlin.

MOCHE (100 BC to AD 700)

The Moche lived in small chiefdoms in the fourteen river valleys on the north coast of Peru. Generations of Moche rulers were buried in pyramids stacked on top of one another, resulting in tombs with untold riches. Moche Warrior Priests were outfitted with elaborate costumes and accoutrements when they went into battle and were also buried with their worldly goods. Each new generation of rulers produced even more elaborate gold works to communicate their power to their subjects.

The Moche did not have written language, but they did have an extremely sophisticated system of symbolic communication. The Moche artisans were known as "Mastercraftsmen," excelling in ceramics, weaving and metalsmithing. They advanced the known metallurgy techniques in the Andes and began to create three-dimensional objects, while their Nazca neighbors to the South continued to create simple shapes from hammered sheets of gold.

To create these three-dimensional works, the Moche employed techniques such as soldering and slit-tab construction. Controlling the heat and using solders took great skill, as too much heat could collapse the piece being worked. The Moche understood how to use the naturally occurring alluvial gold alloys to create a variety of colors utilizing depletion gilding, a slow and challenging process.

Surface enrichment was another skill developed by the Moche. They were able to cause low alloy gold to appear very rich in color by bringing either the gold or the silver to the surface. Some Moche pieces have both silver and gold designs on the same surface. The collection has a group of nose ornaments that illustrate this technique, one being pure gold, another pure silver, and the third and fourth, gold and silver designs.

Above is an unusual Moche pincer with an embossed feline face. Gold pincers are found in the Moche through the Inca cultures, and were used for depilation of male facial hair.

A unique stylistic feature devised by the Moche was the use of dangles, which reflected light as they moved. As simple as this sounds, it took great care to suspend these small, flat, shapes onto thin wires, where they would move and shimmer with the slightest vibration. This innovation was later incorporated through the Inca Empire, who also valued the quality of reflective light from the gold, representing the sun's power.

WARI (AD 600 - 1000)

The Wari emerged from the Peruvian highlands near Ayacucho by about the 7th century AD, and were contemporary with the Tiwanaku from Lake Titicaca, Bolivia. The Wari empire spread from Northern Chile to the central coast of Peru. They were famous for their spectacular weavings of beautifully tapestried ponchos. Not much of the Wari metalwork survived. What is known is usually elaborately decorated flat surface ornaments such as the feather in this collection. This gold ornament is decorated, incised, and reticulated (cut out) and is a lovely example featuring a pair of condors holding serpents in their mouths. It was meant to resemble feathers, and intended to be worn on the head, inserted into a gold headband.

CHIMU (AD 900 – 1350)

With a fifty-year drought in the 8th century, the Moche civilization declined. Significant political changes occurred in the North Coast region. The local Sican culture, also called Lambayeque (AD 900 - 1100) was eventually conquered by the rising Chimu kingdom to the South. At the height of the Chimu reign, it is believed that the city of Chan Chan supported a population of close to 70,000 inhabitants. The Chimu imported Sican metalsmiths to work in their capital of Chan-Chan. The Chimu period (AD 1100-1450) was characterized by the enormous amount of gold and silver ornaments for their society.

The large demand for golden costumes, masks, and beakers among the Chimu nobility necessitated the metalsmiths to find ways to satisfy the demand. One innovation, depletion gilding, was to take abundant copper-gold alloys and alter and enrich their surface appearance to make them look golden. In the 1950s, when a road was being constructed in the Chimu heartland at Hacienda Batan Grande, an extremely large quantity of golden artifacts was uncovered, yielding tons of low carat gold. Among these artifacts included stacks of beakers, multiple masks of different sizes, and thousands of small textile appliques.

Inca (AD 1400 - 1532)

The Inca Empire at its height lasted just over 100 years, from around 1430 to 1532, when Pizzaro conquered the Incas. The empire covered an area of 2,500 miles in length from Chile to Colombia. In all history, only the Roman Empire outsized the Inca Empire. The Inca won the fealty of local chieftains in exchange for gifts of gold, silver, and tapestries of outstanding quality.

The Inca conquered the Chimu on their Northern expansion to Colombia. They admired the Chimu metalsmiths, and relocated them to work at the Inca capital, Cuzco. Inca gold art was created with the belief that the Inca were direct descendants of the sun gods.

The collection of such large amounts of gold depended upon gathering resources from across the entire empire. Everyone was required to give a portion of their labor over to the empire. This was called *mita*, which was a tax on labor. The empire depended upon this tax to mine gold from across the region. Fabulous amounts of gold were brought to Cuszco, where the Inca covered their temples' stone walls with gold sheets, and even had gardens made of gold.

The Inca gold workers were not free artisans but rather were employees of the state and therefore were beholden to the prevailing Inca style. There is very little known lost-wax gold casting done by the Inca. One rare example is two gold figures wearing headdresses. This lack of known cast gold objects shows that the Inca favored fabricating sculptures from flattened gold sheets. An example of this gold sheet technique is a standing llama - nicely sculpted and assembled from several molded sheets of gold. These llamas are also associated with hollow figurines, both male and female. The Inca fashioned complete outfits of gold and silver plaques including golden sandals.

Many of the Inca gold objects were crafted into headdresses, large ear ornaments, figurines, llamas, platters and beakers.

Pizzaro and his group of around 200 soldiers kidnapped Inca King Atahualpa in exchange for the Inca gold as ransom. As a result, there is very little Inca gold art that survived, as most of it was melted down. According to Cieza de Leon, who describes the splendors of the Inca Empire in his *Chronica del Peru*, 1553, "the temple of the sun, in Cuzco had its stone walls sheathed in gold, and a garden planted with golden plants (replicas)".

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Ecuador (400 BC - AD 1300)

In general, Ecuadorian gold is quite rare. The early *La Tolita* culture of Ecuador produced lovely miniature gold ornaments with traces of platinum, which is unique to Ecuador. The platinum was worked by hammering it into very small parts and adding it to a larger molten gold mixture. This enabled the metalsmiths to work the platinum without the high heat that would normally be required. There are only a few known larger Ecuadorian gold works such as masks and pectorals in museum collections. The University Museum in Philadelphia has the largest masks in the US. The later cultures in Ecuador developed their own unique tradition of creating personal ornaments such as nose rings, ear spools, diadems, and necklaces. This collection features a small group of gold-platinum alloyed ornaments. Many ancient Ecuadorian figurines are shown wearing ornaments, which represented real-life gold ornaments that high-status individuals would have worn.

Three Tolita Gold Nose Ornaments

COLOMBIA - (500 BC - AD 1450)

Named *Nueva Granada* by the Spaniards, Colombia covers a large area of varied landscapes, ranging from Coastal plains to rugged Andean mountains. This terrain resulted in seven primary gold working cultures covering a span of over 2,000 years, to include Quimbaya, Calima, Uruba, Tolima, Muisca, Tairona, Sinu and Narino. These primary cultures had tribes that also evolved into multiple distinct artistic styles, all portraying similar categories of objects including masks, headdresses, ear ornaments, nose ornaments, labrets, pectorals, pendants, necklaces, bracelets, ligatures, finger rings, lime containers (*poporos*), lime dippers, and other assorted items like trumpets and assorted animal figurines. A consistent stylistic theme is the portrayal of shamans and rulers that transition into deities or animal totems for passage into other worlds.

The earliest examples of Colombian goldwork were crafted by the Calima, c. 100 BC, into large golden sheet ornaments such as masks, and especially breast ornaments or pectorals which could cover a king or ruler's entire chest. These objects were made of a high content gold and were annealed with stone hammers and chisels and meticulously burnished surfaces. By the 4th century, the Calima were using the lost wax casting technique to make smaller ornaments such as ear and nose ornaments. Early on, the Quimbaya championed the lost wax casting technique, making the most sublime figural containers which were unparalleled anywhere in the Americas.

The Quimbaya culture (AD 400-1450) evolved over a millennium, up until the Inca conquest, continually producing gold and ceramic art. Their early figural *poporos* are considered the finest examples of lost wax castings in South America. The Museo del Oro in Bogota houses over 55,000 gold objects from all over Colombia, testifying to the abundant varied goldworking traditions.

Uruba (AD 400-1000). The Uruba region, which borders Southern Panama, has a rich mix of early styles: Quimbaya, Calima, Darien, Sinu, and Tolima. Each of these cultures was within a 75-mile radius of the Gulf of Uruba. Uruba's strategic geographic location, and the narrow passage between Colombia and Panama encouraged the trade of goods and alluvial gold. This resulted in not only extraordinary amounts of trade but also produced a mixture of artistic influences which led to the Uruba style, developed as early

as AD 400. Uruba archaeology is the least studied among all the cultures of Colombia because of difficult and dangerous terrain, which is heavily forested and unsafe to travel.

An excellent example of Uruaba goldwork (above) portrays a combination of a Sinu shaman with Quimbaya features.

Quimbaya Cast Gold Pendant of a Male Shaman , c. AD 400—700

Darian Cast Gold Shaman with Headdress of Spirals, c. AD 1 - 500

Large Darien/Uruba Cast Gold Shaman, c. AD 500—1,000

Classic Kidney-Shaped Calima Gold Pectoral, c. AD 700 - 1,200

Tairona (AD 600-1500)

When the Spaniards arrived in the Tairona heartland, the Sierra Nevada de Santa Marta was sparsely populated. Only in 1973 did archaeologists start to find more than 200 Tairona sites, ranging from small settlements to large towns. The Tairona had great engineering skills, constructing canals, agricultural terraces for crops, and stone stairways and roads. There was trade in small scale gold objects between the Tairona and the Sinu, but the main trading was with the Muisca, to whom the Tairona sent nose ornaments, beads, and sea shells in exchange for emeralds.

Tariona gold work combines mastery of casting and attention to detail using braided bands of cast wire, spirals, and elaborately ornamented figures and animals. Most of the Tairona gold work was made in the final centuries before the Spanish conquest, but earlier stages date back to the sixth century. *Tumbaga*, an alloy of gold and copper with minor amounts of silver, was a Tairona achievement which allowed for the creation of lost–wax castings with fine details (see below). Tumbaga also lowers the melting point of gold, allowing for the casting of finer details.

The Kogi Indians of the Sierra Nevada mountains are direct descendants of the Tairona and maintain many of their customs. The Kogi have been studied in order to better understand their ancient ancestors.

Muisca (AD 800-1600)

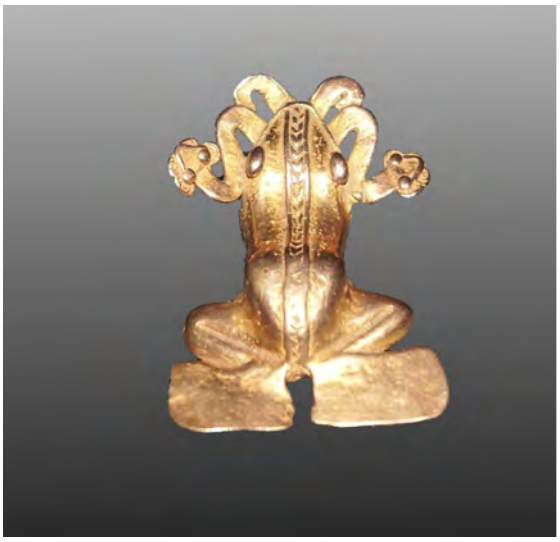
The most notable feature of Muisca gold work is their cartoon-like imagery. The Muisca people primarily worked with low-relief molds, producing votive figurines known as *tunjos.* The figurines depict people and animals conducting a wide variety of activities. The Musica also favored depicting everyday and ceremonial scenes. They are known as the people from El Dorado because of a ceremony celebrating their king, who would be covered in golden ornaments and floated on a golden raft across the sacred lagoon of Guatavita to offer his treasure into the lagoon.

Sinu (AD 1000 - 1500)

When the Sinu first greeted Columbus in their canoes, they were wearing large, golden, circular pectorals. At that point Columbus had a Eureka moment and knew that there was much gold to be had in the New World. The Sinu thrived because they lived near large floodplains and created a canal system that produced abundant agriculture. and alluvial gold. They also created a large range of gold objects that employed the false filigree technique, specializing in earrings. The Sinu amassed more gold for the afterlife than any other peoples. The only Sinu item in this collection is a cast gold whistle (below).

To view 100 other Sinu objects, click on the graphic of the Sinu catalog below to open a link to the PDF.

THE ISTHMUS: PANAMA & COSTA RICA



The biological and geographical diversity of the isthmus between Uruba in Northwest Colombia through Panama, to the gulf of Nicoya in Costa Rica, is divided into three primary archeological zones: the Cocle zone, on the isthmus in Panama, the Atlantic Watershed, along the Caribbean Coast, the Guanacaste-Nicoya/ Diquis region west of Costa Rica along the Pacific Coast. The people of Panama and Costa Rica who looked for gold believed that collecting gold was a sacred activity and that ritual fasting would ensure success. The streams were so rich in gold nuggets that some nuggets were reported to be the size of an egg. The primary type of gold objects from this area are usually of a high gold content and they are either hammered into large flat pectorals or solid lost wax cast pendants. The majority of these pendants are either figurative, anthropomorphized deities, powerful birds, or amphibians, mostly in the form of frogs. This large cast gold frog from the Veraguas culture displays saurian heads emanating from its mouth. These saurian forms are a typical embellishment found on casting in the isthmus. Another characteristic Veraguas feature was to use hammering to embellish details such as wings and/or flippers after an object has been cast.

Panama (Cocle Zone) AD 750-1000. In the 1930's, Harvard University and University of Pennsylvania excavated the newly found cemetery of Sito Conte and found the richest treasure in Panama to date. The universities made a deal to share the treasure with the Conte family. The universities paid only for the gold content of their portion, which was $35 per ounce. Today this arrangement be considered controversial, as excavated property belongs to its host country. On the other hand, the University of Pennsylvania has diligently published and exhibited the Conte treasure for the benefit of the public and has brought global attention to Panama's rich pre-history. The phenomenal treasure uncovered in this cemetery provided the first descriptions of how these chiefdoms were organized, revealing insights to Cocle society. Cocle chiefs were chosen by hereditary lines, giving them power, wealth and military rule. Unique to Panama are its elite burial rites, in which the deterred are confined to clustered burials arranged according to status, with only a small stone marker to indicate the presence of the group. In addition, chiefs were given certain privileges - the most important being that chiefs were the only class entitled to own and wear gold in both this life and the life hereafter. On Columbus' fourth voyage, near Panama, he and his men traded with the Indians coming out in canoes to meet him. These Indians wore "mirrors" round their necks. The "mirrors" were actually concave gold disks with suspension holes. Many Cocle objects were meant as ornaments for the body, and include pendants, collars, gold beaded necklaces, and hammered disks of all sizes. Cocle ornaments were decorated with richly embossed iconography of deities and intricate lost wax casting.

Veraguas Lost-Wax Cast Gold Figural Pendant, c. AD 1,000 - 1,500

Because of the rarity of Cocle gold objects, we only have one example in the collection, a set of twin shamans . These shamans are perhaps deities in transformation, depicted as anthropomorphized animal hybrids with human torsos and appendages. Many of these themes are found in other parts of the isthmus, and it is hard to distinguish the origins of each object, as well as to determine which geographic group influenced the others.

The Atlantic Watershed (AD 800 - 1519)

On Columbus' fourth voyage, he dropped anchor at Amirante Bay, just inside the Panamanian Coast, where more than 80 canoes came to exchange gold for Spanish copper bells and trinkets. Columbus saw Indians extracting large grains of gold from the rivers, and manufacturing hammered breastplates of high quality gold for trade along the coastal chiefdoms of Talamancas. The greatest concentration of gold finds on the Atlantic slope comes from the Linea Vieja area. It appears that this was a great trading center, as imported golden artifacts were found here from all over Costa Rica, Panama, and Northern Colombia, buried in tombs.

In Costa Rica in 1871, Minor C. Kieth, founder of United Fruit Company, built a railroad from San Jose to the Atlantic coast, primarily to transport bananas and coffee for export. The railroad, now known as Linea Vieja (meaning "old railroad") passed through Las Mercedes, a large Late Period archeological site rich with artifacts – as many as 16,000 objects of gold, jade, stone, and ceramic. During the construction of his banana plantations at La Mercedes, Minor Keith's workers first came across golden artifacts, which inspired Keith to amass a collection of over 16,000 objects over a 20 year period.

According to Kate Taylor in the New York Times, (Dec. 31, 2010) over 5,000 of these objects were later donated to the Brooklyn Museum of Art, while others were donated to the American Museum of Natural History, and the Smithsonian Museum of the American Indian.

Guanacaste-Nicoya/Diquis Region (AD 1000 -1500)

By comparison to the Atlantic Watershed and Diquis areas, the Guanacaste-Nicoya archeological area to the west of Costa Rica produced less goldwork. What has been found is entirely eclectic, with apparently no definitive local style. For example: small gold frog pendants, eagles, crocodiles, and human figures.

The Diquis zone of the Pacific Coast has provided more golden objects, apparently due to the availability of gold from mountain streams. Most of these items were found in tombs with hardly any wear, apparently intended for the afterlife.

The most distinctive of these items include pendants shaped like humans or humans with animal qualities, and seem to be crafted using strictly controlled themes. Many of these themes are taken from the animals in the area such as frogs, alligators, jaguars, peccaries, turtles, armadillos, scorpions, spiders, and birds - including eagles and other raptors. Many of these creatures have a composite form, for example human arms and legs incorporated with animal faces and features.

It becomes clear that the Diquis pendants are not simply representations of nature, but the outward signs of a complex world of symbolism, with its own system of beliefs and mythology. Most of the subjects depicted in gold are fierce, noxious, or dangerous – they nip, sting, bite or are poisonous. Predatory habits are emphasized – such as a raptor holding a fish in its mouth. The Diquis' preoccupation with supernatural forms suggest that their pendants may have served as indicators of rank and family status, and should not be considered merely as ornamental jewelry. (Bray, *Between Continents /Between Seas: Pre-Columbian Art of Costa Rica*).

Guatamala & Mexico (AD 900-1600)

From the *Codex Mendoza, c.1541*

(Maya, AD 900-1200) (Mixtec, c.1500 AD) (Aztec, AD 1300-1500)

The story of gold in the Pre-Columbian Americas ends in Mexico. During the Early Classic period (5th century) the Maya were importing gold from the isthmus, through trade with the Diquis people. Since gold had to be imported from distant regions, it always remained scarce among the Mayans. What remains of the the Mayan gold work are sheets with beautifully incised designs, based on mythical images described in the *Popol Vuh* (the Mayan Book of Dead). There were cenotes that became pilgrimage centers, and gold offerings were thrown into these great natural wells, mostly located in the Yucatan peninsula. A famous cenote of sacrifice in Chichen Itza, used over a 500 year period, produced 16 pounds of gold objects. These objects were brought to the cenote from as far away as northwest Colombia. By the 17th century we find the Mixtec continuing the gold working tradition, and by the 10th century the Mixtec were making exquisite quality cast gold objects. Mixtec gold objects are extremely rare and in few private collections. Before the arrival of Cortes, the Aztec Empire controlled most of Mexico as we know it today, from its center Tenochtitlan in the Valley of Mexico. The Aztecs demanded gold as a tribute from their subjects, especially those from the Pacific and Gulf coasts. Montezuma was the last Aztec lord who presided over the Aztec Empire at the time of the Spanish conquest.

Cortes demanded gold from Montezuma, who pretended to have very little gold. By luck Cortes discovered Montezuma's treasury, melted down the gold objects into bars, and sent it back to Spain to finance European armies. The intact objects were sent to Spain as part of the royal fifth, subsequently to be destroyed due to pressures from the church because the objects were considered sacrilegious. Hardly any of the gold and feather objects survive from Mexico. Most of these objects are in museum collections in Vienna and Madrid. Smallpox and the use of gunpowder allowed Cortes to finally defeat the Aztec Empire in 1521 with the fall of Tenochtitlan.

This concludes our brief history of Pre-Columbian gold traditions, which brings us to our next section: Connoisseurship and Authentication of Pre-Colombian gold artifacts.

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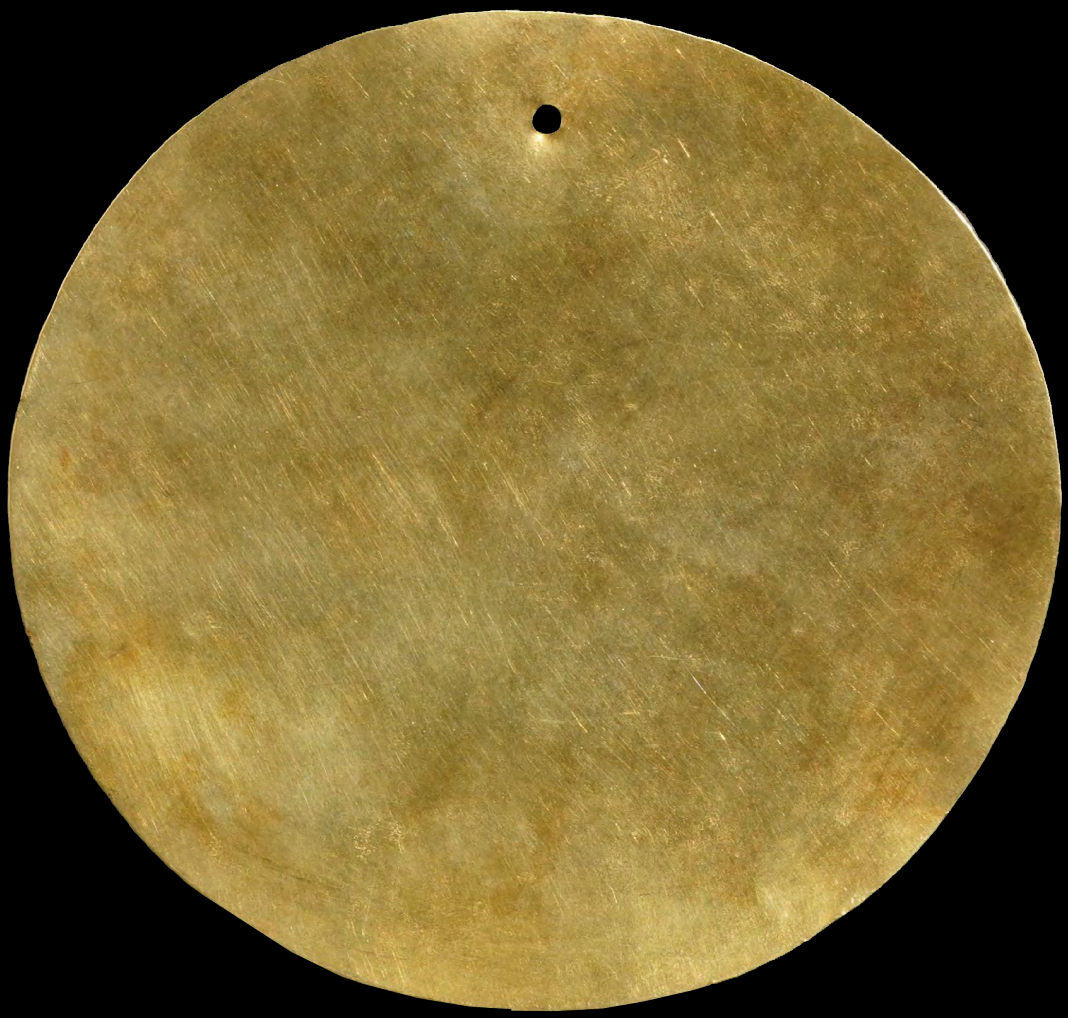
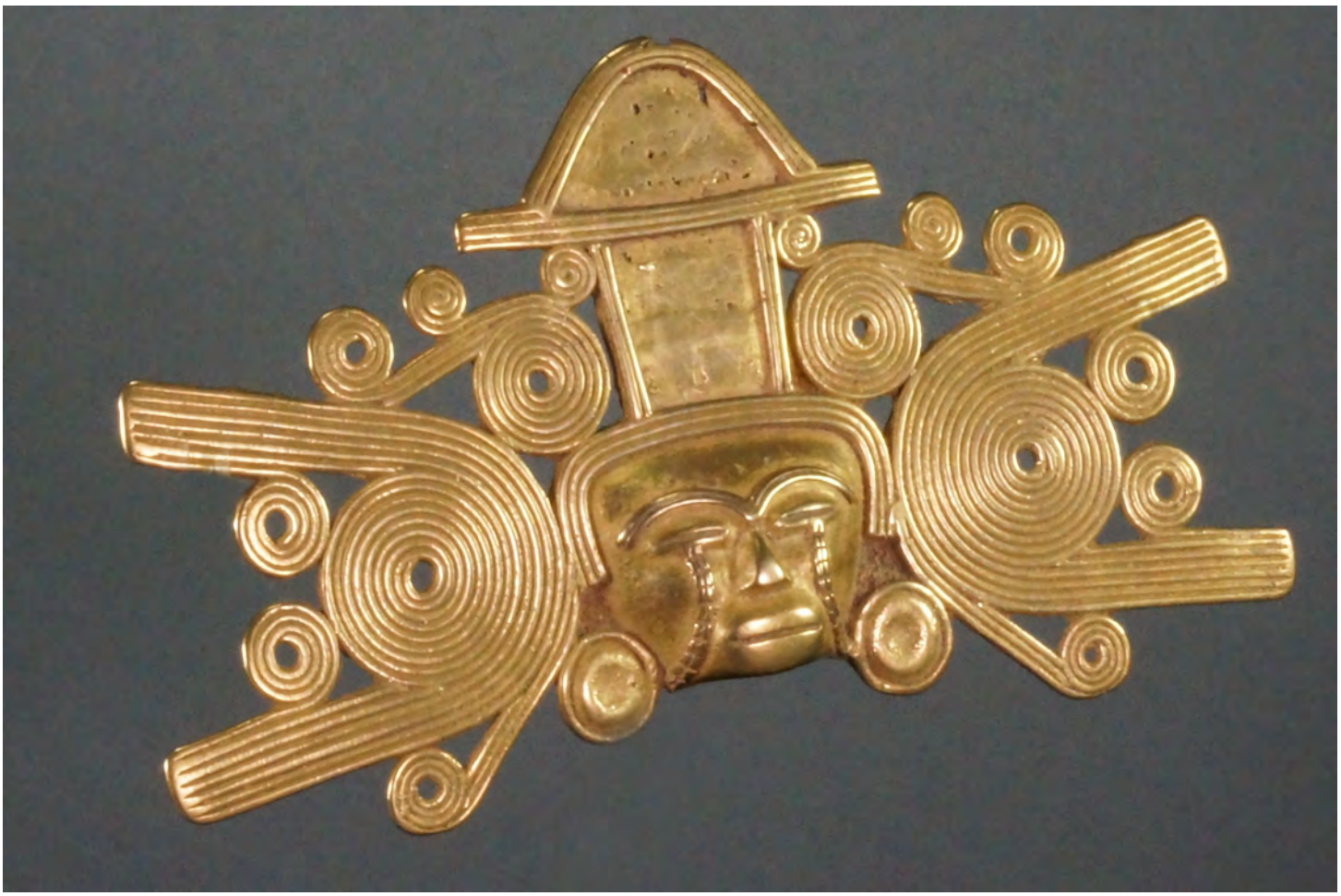


These mirrors were the first gold objects Columbus saw when he encountered the natives passing in a canoe.

Narino Gold Disc-Shaped Mirror, c. AD 1,000 - 1,200

CONNOISSUERSHIP & COLLECTING



Connoisseurship, the understanding of technique, details, and subtlety of an art form, becomes paramount when collecting rarified ancient objects. One should think about how an object fits into the range of artistic output from a particular area or culture. The most useful tool for collecting is a broad image base of known artifacts from the culture in question. It is important to see as much work as possible: in museums and galleries in person, in books, and online. Understanding the techniques used to accomplish a particular style is also critical in making judgments about the quality of a piece. Art specialists also provide insights that are helpful to understanding a piece's character. Ultimately it is the individual collector's heartfelt response to an object that should determine whether a piece should be included in a collection. There are several types of collections. An "encyclopedic" collection is a collection containing one example of each culture, type, or technique. A collection specializing in a specific style, time frame, or media is another type. Finally, the last type of collection is a collection based on someone's personal taste without any limitations. It can be hard for a collector to go against popular trends and choose what he or she personally values. These types of collections are the most difficult to achieve, but the result can be the most gratifying.

The collector should distinguish between whether one's goal is to create a personal collection, or to make a good financial investment. Sometimes these two goals coincide, but most often, this is not the case. It is very difficult to know whether you are overpaying for a masterpiece. An experienced collector knows that sometimes paying a high price for a masterpiece can be a bargain in the long run. Collectors often say that their biggest mistake was passing up a special piece that was thought to be expensive at the time. On the other hand, a collection need not be full of expensive masterpieces to have significance. In fact, the creative impetus behind the collection often leads to its distinctive character, as you'll see in the next two examples.

One collector was attracted to Pre-Colombian miniature gold animal pendants, and over time, she amassed a menagerie of animals. The criteria were that they were small, under two and a half inches in size, and they had suspension loops. At first, she only intended to collect a dozen or so animals—birds, amphibians, reptiles and mammals. However, over the years, the collection grew to over 300 unique animal pendants, as she discovered far more unique animal species than originally imagined. Everyone who came to visit the menagerie marveled at the variety of creatures and the imagination of the Pre-Colombian goldsmiths.

Another collector was fascinated with zoomorphic transformation figures. These images would display either animals with human attributes, or humans with animal attributes, such as a bat with crocodile tail and human hands and feet, as seen to the left, or a shaman with wings. These pendants illustrate the transformation themes that were so important to the Pre-Colombian belief system, such as spiritual flight, or descent into the animal underworld.

Pitfalls in Collecting

Making mistakes is a part of collecting, and unintentionally purchasing forgeries comes with the territory. Understanding why work is fake can allow a collector to learn an immense amount about a specific culture and style. Usually, these mistakes occur when a person is trying to acquire a bargain, or to buy a "masterpiece" that is more elaborate or larger than other pieces from that period. It's also possible, but less likely, that this "masterpiece" is real. In general, forgers will make the effort and take the time to create a forgery that is enticing to a collector for both its size and rarity. When tempted by such a piece, a collector should use skepticism and research to determine if in fact it is actually a rare and important piece, or the product of a forger's imagination. As authentic masterpieces are published for the first time, forgers will almost always follow suit and attempt to recreate these masterpieces. In addition, obscure masterpieces published decades ago also become targeted pieces for fakers. A logical first step is to look through the literature and study museum collections on the culture from which a piece in question is purported to originate. Also, people take advantage of novice collectors attracted to secondary auctions by falsely claiming authenticity. Distinguishing between a fake "masterpiece" and a genuine object that is widely published requires scientific testing, expert analysis, and connoisseurship. An understanding of the ancient styles, techniques, tools, and materials available are essential to discerning fakes from genuine pieces. This requires time and costly scien-tific tests. There is no shortcut for proper authentication. Beware of expertise that is provided quickly and at modest expense.

Another pitfall is when a seller warns the buyer "not to show the piece to certain experts". The seller will claim that these experts say that objects are fake if they don't originate from dealers within their own circle. Expertise is subject to specific fields, and when experts go beyond their field, their statements are subject to question. Therefore, selecting one or more experts to examine a piece is essential. It is not always easy to determine who those experts should be. For example, an expert in Andean Pre-Colombian art should not be asked to assess at a piece that is Mesoamerican. In addition, expertise can be found for different media (e.g. metallurgy, gold vs. bronze, ceramics, stone, or wood). Reviewing an expert's cv will show where his or her strengths lie, based on his/her published articles.

Authentication of Pre-Colombian Gold

I have selected these works with over 35 years of experience buying, selling, and collecting Pre-Colombian gold. I have often consulted with other Pre-Colombian experts and scientists over the years to discuss a variety of issues. Many of the works in this collection have also been scanned by XRF (X-Ray Fluorescence) for elemental analysis, which measures the percentage of each element present in the gold alloy.

Collecting Pre-Columbian gold can be satisfying and informative, and at the same time challenging. Growing interest in archeological gold has contributed to an increasing amount of forgeries. However, it can be assuring to know that the issue of forgeries can be addressed through the advances in the field of archaeometallurgy.

At first glance, someone with a reasonable amount of experience can tell from a photograph if a piece has merit or not. If it is believed that the piece is genuine, then one has to conduct further analysis, both stylistic and technical.

Experts rely on two complementary approaches—Scientific and Stylistic—to determine whether a work might be a modern forgery. In authentication of Pre-Columbian gold, technical proof begins with looking for evidence of age. It also includes observations such as spotting the wrong alloy or element that was not used in production in the ancient world, such as zinc. It is crucial for both stylistic and scientific approaches to be used together, as one is not sufficient without the other. In fact, if a purely scientific result concludes that an object is genuine, the result may be misleading and not sufficient as a guarantee of authenticity. It's entirely possible for a forger to find a discarded piece of ancient metalwork and repurpose it into a fake. An example of this would be a flat sheet of ancient gold that a forger embossed with a Pre-Columbian motif. The material is ancient, but the art is modern.

Scientific Analysis

As summarized by Andre Emmerich, the venerable Pre-Columbian art dealer and author of the seminal catalogue *Sweat of the Sun and Tears of the Moon* (1965), common technical proofs for detecting works of forgery include 1) the use of alloys that were unknown in Pre-Hispanic times 2) the use of modern goldsmithing techniques and modern tools (which leave microscopic traces), or conversely, the evident lack of pre-Columbian techniques of manufacture, and 3) the application of acids or other methods (such as burying the object) to produce an artificial patina, aging, corrosion, weathering or faked wear and tear.

In the past scientists only had access to binocular microscopes and could only detect obvious modern tool marks and surface enhancements. This surface examination can be conducted with as little as 20x - 40x magnification. Metallurgical professionals have at their disposal multiple sophisticated scientific tools - in addition to visual examination - to authenticate archaeological gold. Over the past fifty years, there have been dramatic advances in Pre-Columbian archaeology and its scientific techniques and equipment.

Heather Lechtman of the Massachusetts Institute of Technology (MIT) and a MacArthur fellow, has done pioneering work on Pre-Colombian gold, analyzing the inventive methods of fabrication devised by pre-Hispanic artisans and metalsmiths. The variety of complex techniques employed to fashion such magnificent pieces are represented in this collection. Warwick Bray examined the gold traditions of Columbia and the Panama isthmus. David Scott did pioneering work on the gold and Heather Lechtman of the Massachusetts Institute of Technology (MIT) and a MacArthur fellow, has done pioneering work on Pre-Colombian gold, analyzing the inventive methods of fabrication devised by pre-Hispanic artisans and metalsmiths. The variety of complex techniques employed to fashion such magnificent pieces are represented in this collection. Warwick Bray examined the gold traditions of Columbia and the Panama isthmus. David Scott did pioneering work on the gold and platinum technology of early Ecuador. Scientists are using the latest equipment to be able to date when the golden objects were made and locate the geographic source of the gold.

Thermoluminescence testing (TL) is a well-known technique, which can measure the age of carbon core samples taken from cast lost-wax gold objects. However, it can only be used for those cast metal objects that still retain uncontaminated traces of the original clay core model. It is not impossible for a forger to place an old, discarded core into a modern forgery. An experienced examiner usually can tell how legitimate the core sample is. Another methodology employed to examine a selection of objects from this collection, uses energy dispersive X-ray fluorescence (ED-XRF). ED-XRF analyzes elemental composition. XRF can detect a the presence of certain modern elements not used in Pre-Columbian times, such as zinc and aluminum, which would indicate modern fabrication. However, since forgers have learned how to manipulate and re-work shards of ancient gold, the results are not infallible and must be supported by other evidence.

Helium is also trapped in the process of heating gold. Over long periods of time, the helium atoms decay. The amount of helium lost over time can be measured. Once the helium loss is measured, it is then possible to determine time when the gold was last heated. A twofold process developed by Olivier Bobon and Hervé Guegan at the CIRAM and ARCANE laboratories in France takes advantage of this atomic decay by combing scanning electron microscopy (SEM-EDX) with external particle-induced X-Ray emission (PIXE). This combination is used to study the object's surface microstructure and determine the process by which the gold was fashioned (e.g. ancient depletion gilding as opposed to modern electroplating). Unfortunately, this is an expensive test and therefore should be used only for expensive items.

This information is integrated with a PIXE analysis to define the “trace element” composition of the alloy and determine whether it is consistent with the geographic area that the goldwork is purported to be from. “Trace elements” refers to minute amounts of less than $1/100^{th}$ of a percent of all elements found in an alloy, such as Ruthenium (44) and Palladium (46). It is impossible to replicate a given matrix of trace elements.

Stylistic Assessment

Stylistic proof is found in the artist’s approach to the overall design of the piece. Often, an expert will notice a stylistic error which in turn would need to be confirmed with technical testing. Stylistic analysis is best realized by professionals with long-term, hands-on experience with artifacts from a given culture. Also important is one’s visual memory of museum pieces and published objects, which serves as a frame of reference for observing questionable objects. After seeing thousands of objects, a professional can understand many stylistic nuances attributed to a particular culture. This knowledge includes understanding the art form, its iconography, its historical evolution, and its cultural chronology. Many mistakes and irregularities of style and iconography can be unmasked and used to conclusively establish an object's fraudulence. Ellen Howe, formerly a researcher at the Sherman Fairchild Center for Objects Conservation at the Metropolitan Museum of Art, has successfully merged both scientific expertise along with a vast image base of ancient metalwork.

It is insightful to place a questionable object next to a known ancient object with similar motifs for reference. Upon close examination, an expert could be able to spot subtle differences in design, which could reveal a for-gery, using stylistic criteria alone. For example, some forgers craft an object with either too few or too many compositional elements, relative to the authentic object. A professional can also distinguish between authentic renderings and caricatures. For example, if a certain culture always depicts its figures frontally, and an object is found purported to be from that culture with a fig-ure depicted in profile, then it is likely that this could be the work of a forger. In many cases a scientific anal-ysis could support a stylistic conclusion. An expert in ancient ceramics may not have the same knowledge as an expert in ancient metal work. Therefore, it is important to get the help of the appropriate expert.

Spotting Fakes

Below is an example of a piece that was crafted from ancient gold but is not authentic. The piece on the right is an authentic artifact from the Gold Museum in Bogota, and the piece on the left is a forged imitation. The iconography is misunderstood by the forger, and the scale is incorrect; the forged piece is one third the size. By comparing the forgery to an authentic piece, one can see several iconographic discrepancies. The first and most obvious difference is the way the face is drawn on the fake, lacking details in the nose and mouth. Additionally, the fake animal's torso and tail are not skillfully drawn as the originals. The original has one set of suspension holes, while the fake has two sets, without any reason for the second set.

A fake, purportedly from Peru
2x magnifiation

• Museo del Oro, Bogota Colombia, 2008, p.77.

Another example of a forgery is this side-by-side comparison of a fake Chimu gold tumi (below, right) with a standing figure in a posture with hands facing outward. When placed next to the original (below, left), one notices that they are both very similar - in fact, they are too similar.

In the forged piece, the artist had trouble making the toes. The punctuated design is crisp on the genuine piece and sloppy on the fake. Finally, the fake is pushed in in several areas, including the crucial nose. The "pushed-in" technique is a way to disguise an artist's lack of ability to replicate an intricate part of the original. It's possible that the metal used to create the fake could very well be ancient, as there were many discarded gold fragments form the Batan Grande cemeteries, so stylistic assessment is of paramount importance.

Continuing with side-by-side comparison, another type of fake is a **pastiche.** Pastiche involves combining parts from different objects to create a forgery. Sometimes the parts are from the same culture, or more often, from the same tomb. Forgers may even combine two pieces from entirely different cultures into a "new and never seen before masterpiece". Another type of pastiche involves combining ancient and modern parts to form one object.

In this example below, a forger took an ancient pair of earspools that lost their inlays and crafted in a new set of figures inspired by a well-known authentic pair of earspools from the Larco Museum in Lima, Peru.

Well executed fake **Genuine - Larco Museum** **Poorly executed fake**

The Moche profile has a cumbersome headdress, which was difficult for the forger to replicate. These discrepancies reveal a lack of understanding of Moche iconography on the part of the forger. It is entirely possible that some of the carved shell inlays may be genuine and mixed with modern inlays—another attempt to deceive the collector. This is a good example of taking a popular object and using a combination of both modern and ancient materials to create a convincing fake.

Once any art form becomes popular and valuable, there is a natural tendency toward creating forgeries. In authenticating art, ancient art has an advantage over modern art because it can be tested for evidence of its age. In addition, each professional has his or her own secrets for detecting forgers, and these secrets cannot be revealed lest forgers learn how to overcome their errors.

As forensic science advances, our ability to detect forgeries will continue to improve. The academic research on Pre-Columbian art and in particular gold is also increasingly evolving. Ancient gold lends itself well to scientific testing because of its unique elemental properties. There are no absolutes concerning authenticity, but we can come to highly educated conclusions utilizing the best talent and tools available.

Ancient art is an appealing field for those who love antiquity and are curious about science. In fact, scientific analysis often allows one to conclusively authenticate whether an object is ancient.

* * *

Catalog of 55 Pre-Columbian Gold Works

Deities: 1 - 7

Personages: 8 – 16

Animals: 17 – 27

Ear Ornaments: 28 – 33

Ornaments: 34 – 50

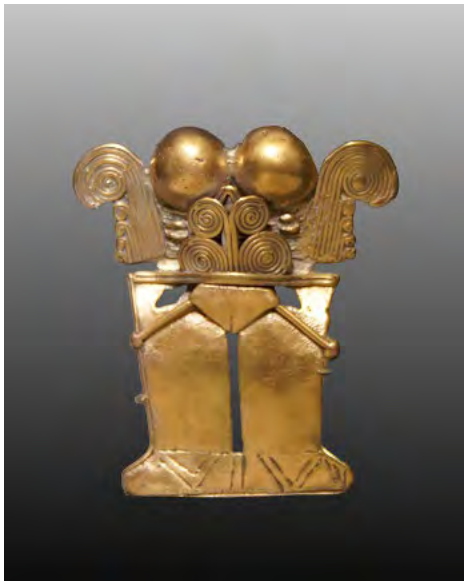
Lime Spoons: 51 - 55

**To view additional detail views of each gold work in this catalog, visit the online exhibit at:*
https://www.precolumbianart4sale.com/exhibition/20/exhibition_works/

01

Tairona Cacique With Bird Headdress
This is a small pendant of its type, a classic cacique wearing an elaborate headdress crafted with traditional swirls resembling animal heads in profile. The details are well done for such a small piece. Ex. Jan Mitchell collection, prior to the 1970s.
Provenance: Colombia, Tairona, Santa Marta, c. AD 1000 - 1500
Dimensions: Height: 3 1/4" Weight: 55.1 grams.
Retail: $18,000 P1003

02



Darien Tumbaga Classic "Mushroom" Style Figural Pendant
This pendant is published in *The Darien Gold Pendants of Ancient Colombia and the Isthmus*, by Anna Maria Falcetti in the Metropolitan Museum Journal, No. 43, 2008, on page 39. There is a high amount of gold in the casting. Ex. Jan Mitchell collection, prior to 1970.
Provenance: Colombia, Darian/Sinu, Northern, c. AD 400 - 1500
Dimensions: Height: 2 5/8" Weight: 36.2 grams.
Retail: $14,000 P1016

03

Veraguas Lost-Wax Cast Gold Figural Pendant with Triangular Tail
The figure holds a short staff in each hand and wears an elaborate Saurian headdress. Illustrated in *Pre-Columbian Art of Mexico and Central America,* by Hasso Von Winning,1968, on page 379. Also illustrated in *The Art of Pre-Columbian Gold,* published by the Metropolitan Museum of Art in 1985, on page 107, and in *Beyond El Dorado: power and gold in ancient pre-colombia* on page 77. From a Texas collector, acquired prior to the 1970s. Originally from the Estate of Jan Mitchell, by descent to David Mitchell, prior to 1968.
Provenance: Panama, Diquis, c. AD 1000 - 1500
Dimensions: Height: 3 3/8" x Width 3.8: Weight: 127 grams.
Retail: $57,000 N7048

04

Uruba Style Bird Pendant with Square Plaque Dangles
The bird has its wings arched to its sides, a flared tail, and four dangles suspended on two bars. The small suspension holes are inside the back of the neck. The bird has bead-like eyes and is a generalized composite of various birds. This piece is well cast, with evidence of the carbon core intact. There is a similar bird in The Gold Museum of Colombia in Bogota, Colombia. Ex. Louisiana professor, acquired prior to the 1980s.
Provenance: Colombia, Gulf of Uruba, c. AD 500 - 1000
Dimensions: Height: 3 1/2" x Width: 4 1/2" Weight 33.6 grams.
Retail: $12,500 MM068

05

Diquis Lost Wax Cast Gold Eagle Pendant
This is a classic representation of a Harpy eagle, with pointed ears and large, curled claws, decorated with a neck band and elaborate bead design under each wing. The eagle was ceremonially "killed" with the wings and tail bent over. Exhibited at the Metropolitan Museum of Art in 1985. From the estate of Jan Mitchell, acquired prior to 1970. Restoration to cracks to the wings and tail tips done by Pre-Columbian expert Robert Sonin. Strong enough to be worn.
Provenance: Panama, Diquis, c. AD 1200 - 1500
Dimensions: Height: 3 7/8" x Width; 4 3/4" Weight 152.7 grams.
Retail: $28,000 p1019

06

Large Darien/Uruba Cast Gold Shaman
The Darien style is identified by the mushroom-shaped domes depicted atop the heads of shamanic figures. This male shaman is wearing a lunate nose ornament and has facial markings which may represent tattoos. He holds a bird in each hand, which could represent spiritual projection or physic flight. The spiral iconography is associated with the otherworld. The Uruba region borders Panama and was a major trading center with exposure to the stylistic traditions of surrounding cultures.
Provenance: Colombia, Gulf of Uruba, c. AD 500 - 1000
Dimensions: Height: 6" x Width: 3 7/8" Weight: 199 grams.
Retail: $145,000 N8010b

07

Darian Cast Gold Smiling Shaman with Headdress of Two Hemispheres with Spirals

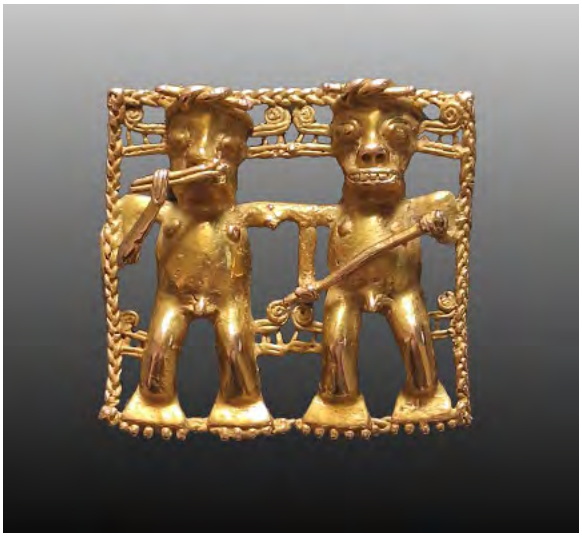
This is a very large example of a Darien pendant with strong influences of neighboring Sinu and Quimbaya styles. The shaman has the typical Darien hemispherical headdress with filigree spirals, and a zoomorphic triangular snout that shows two rows of teeth. The projecting side ornaments are intended to represent a headdress made of feathers and are adorned with additional spiral scrolls. The legs are represented by a single metal plaque with curved sides and a vertical groove in the center – a stylistic influence from the earlier Quimbaya culture. Two similar images are illustrated in *Darien Gold Pendants of Ancient Columbia and the Isthmus,* Ana Maria Falchetti -figures 30 and 31 on page 49.
Provenance: Colombia, Darian/Sinu, Northern, c. AD 1 - 500
Dimensions: Height: 5" x Width: 3 3/4" Weight:187.5 grams.
Retail: $150,000 n6003

08

Costa Rican Gold Figure Holding a Bell

Shamans often use music to assist in inducing a trance. In this case he uses a bell. Lost-wax cast, with a suspension loop at the back. A similar example is illustrated in *The Gold of Ancient America, by Alan Wardwell*, figure 92, page 111. From the Jan Mitchell collection, acquired prior to 1970, by descent to his sons.
Provenance: Costa Rica, Diquis, Delta Period, c. AD 1000 - 1500
Dimensions: Height: 2" Weight: 14.2 grams.
Retail: $3,000 p1255

09



Chiriqui /Diquis Gold Pendant with Framed Twin Musicians

Gold pendant with twin musicians, side by side. There are two sets of Saurian animals in profile, along the figures' heads and knees, encircled by the typical braided goldwork frame. Illustrated in *The Art of Pre-Columbian Gold*, page 102, and exhibited in 1976 in the Leningrad Museum. Also published in *Pre-Columbian Art of Mexico and Central America,* 1968, by Hasso Von Winning, plate #189 on page 378. From the estate of Jan Mitchell, by descent to his son Oliver Mitchell, prior to 1968.
Provenance: Panama, Diquis, c. AD 700 - 1550
Dimensions: Height: 2 7/8 x Width: 3 in. Weight: 116 grams.
Retail: $85,000 p4165

10

Muisca Cast Gold Seated Warrior
This cast gold warrior holds a spear and spear thrower in one hand, and a slingshot in the other. He is wearing a hat, a necklace, and one remaining ear hoop. Contains an intact carbon core. From the Jan Mitchell collection, acquired prior to 1970, by descent to his sons.
Provenance: Colombia, Muisca, c. AD 700 - 1500
Dimensions: Height: 1 5/8" Weight: 22.1 grams.
Retail: $3,500 p1051

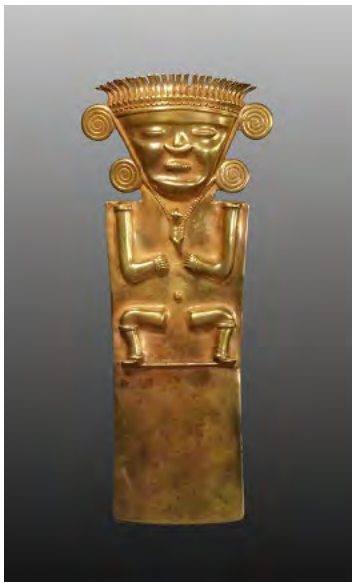
11

Calima Gold Hammered and Incised Plaque with Two Royal Heads
In ancient Pre-Columbia, twin imagery was considered to represent good luck and prosperity. This incised gold plaque features twin royal figures, identifiable by their headdresses and the elaborate swirl design above their heads, indicating that they are individuals of high status. From the Jan Mitchell collection, acquired prior to the 1970s, by descent to his sons.
Provenance: Colombia, Calima, c. AD 700 - 1200
Dimensions: Height: 3½" x Width: 6 ½" Weight 28.8 grams.
Retail: $24,000 p5051

12

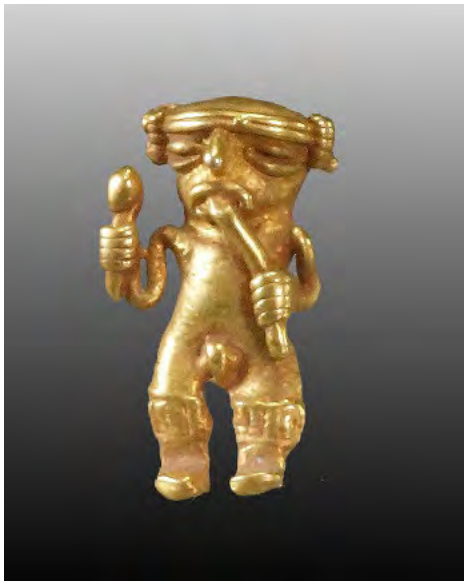
Muisca Cast Gold Erotic Male and Female
The female has her legs wrapped around a standing male as he holds her waist, creating the impression that the figures are engaged in sex. This sculpture has an ancient solid carbon core, which is still intact. From the Jan Mitchell collection, acquired prior to the 1970s, by descent to his sons.
Provenance: Colombia, Muisca, c. AD 700 - 1500
Dimensions: Height: 3 3/8" x Width: 1" Weight: 30 grams.
Retail: $4,800 p1049

13



Quimbaya Cast Gold Pendant of a Male Shaman
This is the largest known gold Quimbaya shaman. The shaman is in a state of trance or meditation, and wears elaborate ornaments, including: a crown with 24 birds facing downwards, a large pair of double-spiral ear ornaments, a crescent-shaped nose ornament, and a special gold necklace with a curly-tailed animal pendant. There are two suspension loops on the back. The casting is extremely well executed, with fine details on the crown and the necklace. A similar ornament is in the Museo del Oro and only measures 7 1/2" in height. A pair is illustrated in *The Dora Janssen Collection* catalogue, which measures 7 1/2" in height. Similar examples are also illustrated in *MASTERWORKS OF PRE-COLUMBIAN GOLD: The Glassell Collections of The Museum of Fine Arts, Houston,* p.151, and in *The Art of Pre-Columbian Gold:The Jan Mitchell Collection*, p.59. Similar examples are also published in *The Gold of Eldorado,* by Warwick Bray, on p. 218. From a Texas collector, acquired prior to the 1970s. Ex. Jan Mitchell collection, acquired prior to the 1980s by descent to his son David Mitchell.
Provenance: Colombia, Quimbaya, Uruba, c. AD 400 - 700
Dimensions: Height" 8 1/2" x Width: 3 2/4" Weight:192 grams.
Retail: $165,000 n7061

14

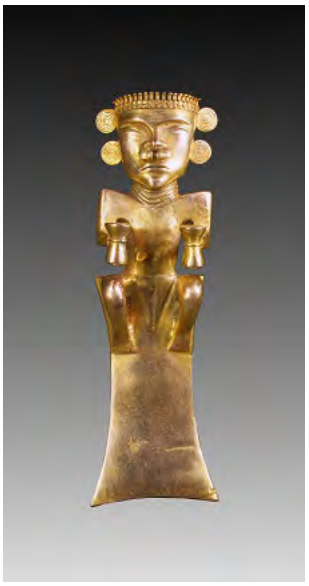


Chiriqui Cast Gold Miniature Flute Player
This miniature gold shaman is seen playing a flute and holding a rattle in the left hand. Music was known to facilitate trance states and psychological healing during psychedelic shamanic rituals. A similar piece is illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection,* on page 101. By descent to David Mitchell from his father Jan Mitchell.
Provenance: Costa Rica, Chiquiri, c. AD 1000 - 1500
Dimensions: Height: 1 1/16" Weight: 4.9 grams
Retail: $1,900 n4027

15

Large Cast Gold Sinu Pendant with Two Royal Faces
This unique pendant features classic Quimbaya iconography. The design depicts twin faces side by side, wearing crowns and earring ornaments, with large spirals framing the twin faces on both sides. Twins were considered lucky in Pre-Columbian cultures. On the back are a pair of vertical suspension tubes. This ornament was found in the Uruba region on the Panamian border, an area of varied trade with neighboring cultures, especially the Sinu, Darien, and Quimbaya. Formally in the collection of a private Texas collector, prior to 1970. The top of upper right plumb was broken and soldered back together. Acquired from a Texas collector.
Provenance: Colombia, Gulf of Uruba, c. AD 500 - 1000
Dimensions: Height: 4 1/4" x Width: 8 5/8" Weight: 282 grams.
Retail: $167,500 N6004

16



Quimbaya Cast Gold Pendant Depicting a Seated Queen in a Trance

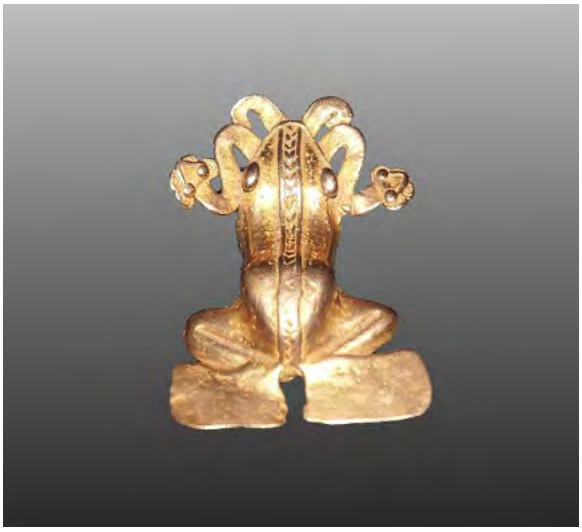
This seated queen is elaborately dressed, to include a crown with 19 birds facing downwards, a U-shaped nose ornament, two sets of spiral-shaped ear ornaments, and a five-strand necklace. Her face is delicately sculptured with her eyes closed as if she were in a trance, and she holds a popuro in each hand. This is fine example of an early cast gold piece of good size. Similar pendants in museum collections include: the Museo del Oro in Bogota, the Museo de las Americas in Madrid, the Glassell Collection at the Houston Museum of Fine Arts, and the Dora Janssen Collection in Antwerp. Private Texas collection, prior to the 1970s.

Provenance: Colombia, Uruba, Northwest Darian, circa AD 1-700

Dimensions: Height: 7" x Width: 2 1/4" Weight: 91.8 grams

Retail: $145,000 N6009

17



Classic Veraguas Cast Gold Frog with Serpents from its Mouth

This beautiful lost-wax cast gold frog has oval eyes and a ribbon down its back with hammered hind legs. Two elaborate serpents extend from the frog's mouth. Gold castings are often finished with hammered extensions like flippers, arms, or serpents. There is a similar example at the Metropolitan Museum of Art from the Jan Mitchell collection. This is frog was also formerly in the Jan Mitchell collection, acquired prior to 1970, by descent to his sons.

Provenance: Panama, Veraguas, c. AD 1000

Dimensions: Length: 2 7/8" x Width: 1 3/4" Weight: 32.4 grams.

Retail: $8,500 p1045

18

Veraguas Cast Gold Shark with Serpent and Crocodile Appendages

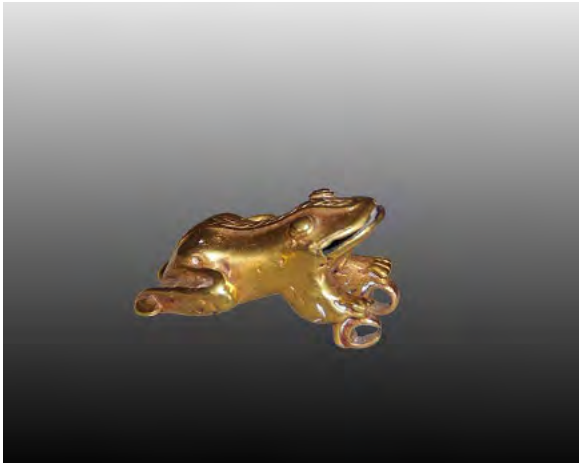
This is a variation of a typical Veraguas shark, with three sets of dorsal fins and four sets of appendages. There are two teeth on the top and bottom jaws, with two suspensions loops underneath the mouth. From the Jan Mitchell collection, acquired prior to 1970.

Provenance: Panama, Veraguas, c. AD 800 - 1500

Dimensions: Length: 3 1/4" x Width: 1 7/8" Weight: 65.5 grams.

Retail: $22,500 p1048

19



Diquis Lost Wax Cast Gold Frog or Toad Decorated with a Band Along His Back

The animal is in a resting, crouched position, with small hind legs and distinctive suspension loops supporting the front legs. There is a thin edge around the mouth, and the complex eyes suggest that this is from the Diquis region of Panama/Costa Rica zone. The frog is more realistic than most Diquis gold frogs, which are generally depicted with large hind legs. The cast has signs of over-casting at the rear underside. Overcasting is a complicated technique, used to repair casts which had areas of loss during the first casting. Inside, the rear still has sections of the carbon casting core. The suspension loops show wear, indicating that the frog was heavily worn on a pendant in ancient times. From the Jan Mitchell estate, collected prior to 1970.

Provenance: Panama, Diquis, c. AD 1000 - 1500

Dimensions: Length: 1 5/8" x Height: 15/16" Weight: 36.5 grams.

Retail: $7,500 P1028

20

Veraguas Cast Tumbaga Pair of Composite Animals

This pendant was found in Panama, along the Panamanian border with Colombia, but was influenced by the Darien aesthetic, which spread from eastern Columbia all the way to Honduras. These stylized anthropomorphic figures, representing shamans or priests in hybrid animal form, feature thin arms and simple faces, with birds representing celestial wanderings. There are two suspension loops behind the heads. Lost wax cast of copper and gold alloy. From the estate of Jan Mitchell, prior to 1970. A similar piece is reported and displayed in the classic book *Oferbereria Prehispanica de Columbia: Estillo Quimbaya Otras* by Jose Perez de Baradas.

Provenance: Panama, Veraguas, c. AD 1200-1500

Dimensions: Length: 3" x Width: 2 5/8" Weight: 62.8 grams.

Retail: $8,750 p1026

21

Sican Gold Flared Beaker with Embossed Toads

Bufo Marinus toads, depicted on this vessel beaker, are found on the dry coastal desert coast of Northern Peru. These toads are identifiable by their highly textured skin, represented by six sets of incised circles. Acquired from a private Texas collector, prior to the 1970s. Some traces of cinnabar.

Provenance: Peru, North Coast, Sican, Batan Grande, c. 850 -1150 AD

Dimensions: Height: 51/2" x Width: 4.2" Weight:118 grams.

Retail: $32,000 N6001

22

Moche Gold Pincer with Embossed Large-Eared Bat Face
Pincers have been found from as early as the Vicus period (pre-Moche), circa 300 BC and were thought to be used to pluck facial hair. Few are known from the Moche period and most of the pincers that have been found were from the Chimu and Inca periods. This pincer has an embossed face of a bat with fanged teeth. The bottom of the pincher features a beautiful, flared design, representing a Moche back-flap. It was made from one single hammered sheet of high carat gold and then embossed twice on a carved wood form, then bent at the middle to create an identical front and back. There is a suspension hole in the middle. Ex. collection Magret Brenner, Zurich.
Provenance: Peru, Moche, North Coast, c. AD 200 - 700
Dimensions: Height: 2 1/4" x Width: 1 1/4" Weight: 16.5 grams.
Retail: $9,750 n7012

23

3 Muisca Cast Gold Snakes
The Muisca people of Eastern Columbia were known for their famous myth, El Dorado. El Dorado refers to a lord riding on a golden raft and covered in gold dust. Serpents are featured prominently in the Muisca creation myth, which describes two snakes emerging from the Iguaque lagoon as a women and child. Transmutation was an important theme to the Musica; these snakes are all cast using the lost wax technique as well as the manipulation of alloys to create the three different hues of gold.
Provenance: Colombia, Muisca, c. AD 700 - 1500
Dimensions: Length: (1). 7/8" (2) 3/16" & (3) 9/16"
Total Weight: 5.2 grams.
Retail: $2,400 n8006

24

Moche Gold Bead in the Form of a Tree Snail
The emergence of snails signals the start of the rainy season, indicating prosperity and abundance. The tree snail, Strophoceheilus, is featured in fineline drawings on the sides of Moche ceramic vessels depicting "snail hunters" in the foothills of the Andes. This bead is made in two parts, with the bottom expertly soldered to the spiral cone-shaped shell. The snail's foot is exposed inside the shell. The shell also functions as a bell, with two copper beads inside that rattle when worn. Originally from a larger necklace of snail beads, each with two sets of suspension holes on the bottom. Illustrated in *Oro del Antiguo* Peru, lam.183. Ex. collection Benno Mattel, by descent to his daughter Karin Ashburn.
Provenance: Peru, Moche, Loma Negra, North Coast, c. AD 100 - 400
Dimensions: Height: 2" x Width: 2 1/2" Weight: 36.4 grams.
Retail: $27,500 n8018

25

Veraguas Cast Gold Eagle Pendant with Serpent
This lost-wax cast gold miniature eagle is adorned with finely crafted scrolls around its head. In its claws, the eagle grasps a pair of intertwined serpents. There is a suspension loop behind the eagle's neck, indicating that it was used as a pendant. This eagle is illustrated in The Met Museum's *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*, on page110. Estate of Jan Mitchell, prior to 1970.
Provenance: Panama, Veraguas, c. AD 1000 - 1500
Dimensions: Height:1 3/4" x Width:1 1/2" Weight: 13.2 grams.
Retail: $12,750 p1020

26

Moche Gold Nose Ornament with Hummingbird in a Tree
This delicately crafted hummingbird figure features inlaid turquoise eyes and geometric danglers. This is an excellent example of Moche soldering and filigree workmanship. Ex. collection Magret Brenner, Zurich.
Provenance: Peru, Moche, North Coast, c. AD 100 - 300
Dimensions: Width: 1 1/2" x Depth:1 1/2" Weight: 8 grams.
Retail: $12,000 90166

27

Tairona Gold Cast Frog Pendant with Rattle
This expertly crafted gold pendant depicts a frog with large eyes hunched on its hind legs. A delicate braided ribbon slopes down its back and borders its legs. A modern suspension loop is attached to the original ancient suspension arrangement. From the Jan Mitchell collection, prior to 1970, by descent to his sons.
Provenance: Colombia, Tairona, Santa Marta, c. AD 1000 - 1500
Dimensions: Length: 1 7/8" x Width: 1 5/8" Weight: 21.2 grams.
Retail: $4,500 p1046

28

Pair of Sinu Gold Fan-Shaped Ear Ornaments (SOLD)
These beautiful lost-wax cast "False Filigree" style pendants each feature six sections of latticework separated by simple bands. The false filigree technique was favored by the Sinu goldsmiths. The larger the ornament, the higher the status of the wearer. These ear ornaments are illustrated in the Met Museum's Catalog, The Art of Pre-Columbian Gold: The Jan Mitchell Collection, page 164. Estate of Jan Mitchell, prior to 1970.
Provenance: Colombia, Sinu, Cauca River Valley, c. AD 1000 - 1500
Dimensions: Height: 2 1/2" x Width: 4 3/8" Weight: 67.5 grams.
Retail: $27,000 p1022

29

Early Calima Pair of Gold Hour-Glass Shaped Ear Spools
These spools are made from high karat gold sheets formed on balsa wood cores. The side seams were nailed shut, and the circular ends were crimped to the sides. These ends of the spools have embossed designs radiating around the central shaft. This style of earspool was worn in the ancient Americas by hanging from the ear lobe, suspended by a cord through the shaft. These were clearly intended to be a pair, weighing only a 1/2-gram difference. A very similar pair is illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection,* page 194. Ex-collection Jan Mitchell, acquired prior to the 1980s..
Provenance: Colombia, Calima, Yotoco Phase, Cauca River Valley, c. AD 100 - 5000.
Dimensions: Height: 2 1/4 " x Diameter: 2 " Weight: 12.5 & 13 grams each (totaling 25 grams).
Retail: $8,500 p3066

30

Salinar Gold Filagree Earrings
This is an early example of Pre Moche ear ornaments utilizing the filagree technique, soldered wire in a spiral design. The design is fitted between a single bent and hammered curve. Mastering soldering of thin wires is a very difficult technique as the heat can melt the entire construction if done poorly. Similar earrings are illustrated in the book, *Trujillo Precolombino,*1990, page 297.
Provenance: Peru, Salinar, North Coast, c. 400 - 100 BC
Dimensions: Height: 1" x Width: 0.9" each.
Weight: 2.3 grams combined.
Retail: $950 p1060

31

Wari Pair of Gold and Silver Ear Plugs
This pair of ear plugs has gilt gold fronts attached to silver plugs. The silver plugs were made using a wood matrix, which can be seen in a few exposed areas on the back. It is quite rare to see the wooden matrix intact underneath the gold as it usually disintegrates within a few hundred years. Similar ear spools are illustrated in *Pre-Colombian Art of South America,* by Alan Lapiner, plate 566. Ex. collection Benno Mattel, by descent to his daughter Karin Ashburn.
Provenance: Peru, Wari, South Coast, c. AD 600 - 750
Dimensions: Diameter: 2 5/8" x Depth: 3 1/8"
Retail: $7,500 n8032

32

7 La Tolita Gold with Platinum Miniature Ear Ornaments with Turquoise Inlays

Each ornament has an inlayed turquoise stone and a suspension ring. These are excellent examples of early granulation and sintering techniques. Sintering is the process of melting gold foil over platinum which can then be reheated and annealed to fashion small objects. Similar ear ornaments are published in *The Gold of Eldorado,* by Warwick Bray and in *Charms in Pre-Columbian Ecuador* by Christian Mesia Montenegro. Acquired in 1994 from an old estate auction.

Provenance: Ecuador, La Tolita, c. 1500 BC

Dimensions: Approx. Length: 1" ea. Weight: 4 grams.

Retail: $4,600 94203

33

Salinar Group of Fourteen Gold Filigree Ear Ornaments

A group of 14 Salinar gold filigree nose ornaments of various designs and sizes. The Salinar people preceded the Moche on the North Coast of Peru in the Trujillo region. Ancient coastal Peruvians did not have access to bees or beeswax due to the dry coastal desert environment and were unable to use the lost wax casting method employed in ancient Colombia. Instead, they used soldering to create elaborate filigree ornaments. Soldering is technically complex, requiring carefully controlled temperatures along with the right mix of flux. This group of 14 individual gold filigree ear ornaments demonstrates the great level of skill and artistry achieved by the Salinar metalsmiths. Many of these filigree works are similar those illustrated in *Trujillo Precolombino*, by Jose Antonio de Lavalle, page 297. Three similar nose rings from the same region are also illustrated in *RAIN OF THE MOON: Silver in Ancient Peru*, published by The Metropolitan Museum of Art, 2001, fig. 1. Acquired in 2000 from a private New York collector.

Provenance: Peru, Salinar, North Coast, c. 300 BC - AD 100

Dimensions: Range: 7/8" to 1 1/2" Width

Retail: $8,000 MM087

34

Moche Gold Nose Ornament Surrounded with 18 Spheres

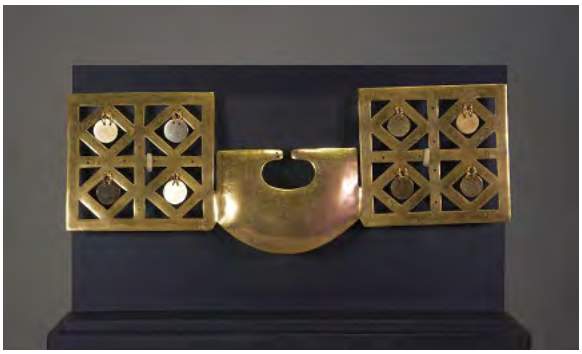
Each of the spheres are individually soldered to a golden tab from the base. Illustrated in Oro del Antiguo Peru, plate 134. Ex. collection Benno Mattel, by descent to his daughter Karin Ashburn

Provenance: Peru, Moche, Loma Negra, North Coast, c. AD 100 - 400

Dimensions: Height: 2 1/4" x Width: 2 3/4" Weight: 27.3 grams.

Retail: $18,000 n8020

35



Narino Gold Annealed Nose Ornament with Four Diamonds within a Square

This nose ornament is one of the largest examples from a cache of gold artifacts found in a tomb in the 1950s in Ecuador. The ornament uses an optical illusion to create the appearance of diamond-shaped cutouts, which are made of multiple quadrangle cut-outs. There are suspension holes for dangles above each square. This ornament is an excellent example of depletion gilding, a technique which brings the gold in the metal alloy to the surface through repeatedly heating the metal and rinsing it with acid. Similar examples are illustrated in *MASTERWORKS OF PRE-COLUMBIAN GOLD: The Glassell Collections of The Museum of Fine Arts,* Houston, p.151, and in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*, p.59. Similar examples are also published in *The Gold of Eldorado* by Warwick Bray, on p. 218. Ex-Jan Mitchell collection, acquired prior to the 1980s, by descent to his son David Mitchell.

Provenance: Ecuador, Narino, Capuli, Southern border with Ecuador, c. AD 700 - 1500

Dimensions: Height: 2.75" x Width 7.9" Weight: 41.5 grams.

Retail: $16,000 n7050

36

Tolita Gold Labret with Granulated Design and Turquoise Center

This small but early example of granulation of eight separate granulations section fitted on a gold plate on top of the stem. This is a tour de force of early metal working in the Americas.

Provenance: Ecuador, La Tolita, c. 1500 - 400 BC

Condition: as found.

Dimensions: Depth: 1/2" x Face: 3/4" X 3/4"

Retail: $2,200 99600

37

Three Tolita Gold Nose Ornaments

Three gold U-shaped miniature nose ornaments, each with a different pattern of granulation. The U-shape would likely have been created using lost wax casting and then granulated. Granulation uses heat only to attach the small spheres to the cast. A similar piece is illustrated in *Charms in Pre-Columbian Ecuador* by Christian Mesia Montenegro, 2007, on pages 53 and 55.

Provenance: Ecuador, La Tolita, c. 1500 - 400 BC

Dimensions: Diameter: 7/8" - 2 3/8" Weight:12.2 grams.

Retail: $4,500 99128

38

Two Miniature Nose Ornaments Demonstrating Early Goldwork Techniques

This beautiful set of miniature gold nose ornaments features two early Pre-Columbian goldwork techniques. The top ornament is from the Chavin culture and was formed using a combination of heating and annealing the gold. The bottom ornament is from the pre-Moche Salinar culture and features both granulation and filigree techniques.

Provenance: Formative period Peru, c. 100 BC - AD 300

Dimensions:

Chavin: Width:1 1/2" Weight: 4.2 grams.

Salinar: Width: 1 1/4" Weight: 4.6 grams.

Retail: $1,850 90400

39

Vicus Embossed Gold Nose Ring

Embossed with imagery of two long-tailed animals, possibly birds. Modern puncture marks were added near the eyes of each animal. A similar nose ring is illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*, page 209. Ex. Jan Mitchell collection, prior to the1980s, by descent to his sons.

Provenance: Peru, Vicus, Far North Coast, c. 100 BC - AD 100

Dimensions: Height: 3 in x Width: 4.5 in. Weight: 12 grams.

Retail: $1,600 p1251

40

Sinu Solid Gold Nose Ring with End Caps

A solid gold U-shaped bent rod for a nose ornament with hammered end caps. Exhibited at The Museum of Primitive Art in 1969, no 165. Illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*, pages 162-163. Ex. Jan Mitchell collection, prior to 1980s, by descent to his sons.

Provenance: Colombia, Sinu, c. AD 400 - 1500

Dimensions: Diameter: 1 3/8” x 1 ¼” Weight: 31 grams.

Retail: $7,000 p1253

41

Three Moche Bi -Metallic Nose Ornaments
These ornaments are excellent examples of the Moche metalsmiths' ability to use depletion gilding to vary the surface area with both gold and silver decoration. The Moche believed that metal possessed sacred power, and according to their cosmological myths, the process of bringing the silver and gold colors to the surface revealed the metal's spiritual qualities. A similar nose ornament is illustrated in *Antiguo Oro del Peru,* page 15. Private collector, Florida, prior to 1980.
Provenance: Peru, Moche, North Coast, c. AD 100 - 600
Dimensions: Width 4 3/4" Weight 24 grams.
Width 3 5/8" Weight 13.8 grams.
Width 3 7/16" Weight 14.8 grams.
Retail: $12,500 M5027

42

Chimu Gold Cuff with Three Bands of 4 Repousse Stars Each
This gold cuff would have been worn as an adornment by a high-status male warrior. It features three rows of repousse starts, with four stars in each row, and two tie holes. A cuff with a similar star design is illustrated in the catalog of the Gold Museum of Peru on page 127. Formerly in the collection of Camilla Deitz Bergeron, New York antiquaire, acquired prior to the 1980s.
Provenance: Peru, Chimu, Early Phase, North Coast, c. AD 900 - 1100
Dimensions: Height 4 1/2" Weight: 65.5 grams.
Retail: $9,500 N2064

43

Wari Gold and Silver Bicephalous Arc (Serpent Deity) with Dangles
This ornament represents a plume of features, intended to be placed into a gold headband. When worn in ceremonies, the kinetic dangles would have moved and reflected a variety of colors of warm light, attracting the attention of onlookers.
Provenance: Peru, Wari South Coast, c. AD 650 - 1100
Dimensions: Heigh: 8 1/2" x Width: 6" Weight:26 grams.
Retail: $7,800 p4162

44

Wari Embossed Gold Feather Plume Decoration Depicting a Pair of Vultures
This double-headed design features two cutout birds of prey holding serpents in their beaks. This style of gold plume would have been attached to the headdress of a high-status individual, signifying strength and power. A less elaborate gold plum by the same artist is illustrated in *WARI: Lords of the Ancient Andes*, page 227. Acquired from a New York collector prior to 1990.
Provenance: Peru, Wari, Central Coast, c. AD 650 - 1100
Dimensions: Height: 11 1/4" Weight: 26 grams.
Retail: $14,500 m7122

45

Loma Negra Gold Crescent-Shaped Headdress Frontis Piece
The headdress ornament has two sets of attachment points which would have been used to attach it to an elaborate headdress for an important personage. The Loma Negra archaeological site was discovered in the early 1960s and was later understood to be an early royal Moche tomb complex. Acquired by descent from Jan Mitchell to his sons, prior to the 1980s.
Provenance: Peru, Moche, Loma Negra, North Coast, c. AD 100 - 400
Dimensions: Height: 7 1/8 " x Width: 9 " Weight: 50.8 grams.
Retail: $7,500 p3064

46

Capuli Hammered Gold Pectoral Disk
This pectoral has two sets of horizontal suspension holes toward the top. The suspension holes suggest that the disc was originally part of a more elaborate stringing with multiple strands. A very similar pectoral with four suspension holes is illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*, page 202. From the estate of Jan Mitchell, acquired prior to the 1970s.
Provenance: Ecuador, Capulio, Northwestern, c. AD 700 - 1200
Dimensions: Diameter: 3 3/4 " Weight: 44.6 grams.
Retail: $6,500 p3062

47

Narino Gold Disc Shaped Mirror with Single Suspension Hole
A similar disc is illustrated in *The Art of Pre-Columbian Gold: The Jan Mitchell Collection*. This disc is also from the Jan Mitchell collection, acquired prior to 1980.
Provenance: Ecuador, Narino, Southwestern, c. AD 1000 - 1200
Dimensions: Diameter: 5 " Weight: 56.9 grams.
Retail: $8,500 p3063

48

Chavin Gold Pin with Simple Twisted and Hammered Diamond Design
This unusual diamond-shaped pin was made from one flat sheet that was hammered and twisted.
Provenance: Peru, Chavin, North Coast, c. 200 - 500 BC
Dimensions: Length: 5 1/8" x Weight: 3.1 grams.
Retail: $1,200 N5041

49

Vicus Gold Necklace of Soldered Discs and Rolled Oblong Beads
The necklace has been restrung to resemble the original ancient necklace. The beads were strung so that the necklace hangs flat. The roundels each have two sets of holes on either edge. The oblong beads are made from hemispheres and rolled, creating an elongated oblong shape. A necklace with similar shaped beads was found at the early Vicus site of Ayabeca in the far north of Peru.
Provenance: Peru, Vicus, Ayabeca, North Coast,
c. 100 BC - AD 300
Dimensions: Length: 23” without clasp.
Height: 12 inches at center.
Weight: 88 grams.
Retail: $17,000 88121

50

Calima Rayed Gold Headdress Ornament with an Embossed Face

Similar style headdress ornaments are in the gold Museum in Bogota. It appears that the ornament was ceremonially "killed". Ex. Jan Mitchell collection, prior to 1970, by descent to his sons. From a Texas collector, acquired prior to the 1970s.

Provenance: Colombia, Calima, Yotoco Phase, Cauca River Valley, c. AD 100 - 1000

Dimensions: Height: 10 1/2"

Retail: $28,500 P1001

51

Calima Gold Tupú (Lime Dipper) of a Deity Seated on a Serpent

The deity has an elaborate face mask and holds the tail of the serpent upon which he is seated. This is a known motif, but rarely seen with a human, as most are found with a cayman or feline as the primary figure. According to the research, only limited types of images were used for lime dippers, usually shamans or warriors. A similar example is illustrated in *Calima and Malagana*, by Marianne Cardale Schrimpff, page 116, plate 111.37.

Provenance: Colombia, Calima, Yotoco Phase, Cauca River Valley, c. AD 100 - 1000

Dimensions: Length:5 1/4 " x Weight: 34 grams.

Retail: $8,250 M8031

52

Calima Gold Lime Spoon with a Royal Bird Holding a Double-Headed Serpent

When held upside down, this elaborately crafted bird transforms into a mask. From the Jan Mitchell collection, acquired prior to the 1970s, by descent to his sons.

Provenance: Colombia, Calima, c. AD 600 - 1000

Dimensions: Height: 4 1/8" Weight: 22.7 grams.

Retail: $7,500 p1052

53

Inca Gold Fastening Pin Topped with Bird Perched on Corn Cob

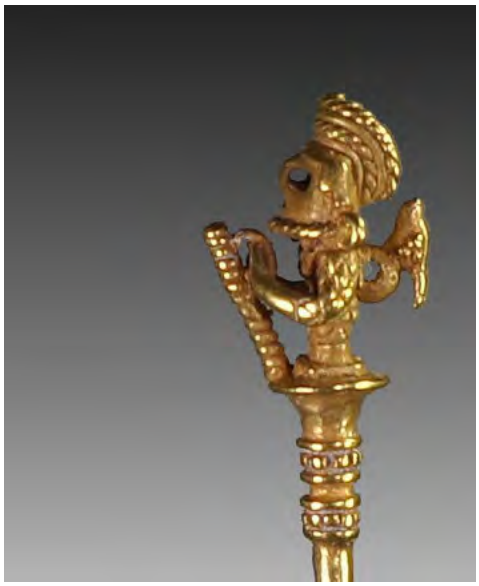
Gold works of art from the Inca period is rare, as most Inca gold was confiscated and melted down by the Conquistadores during colonization. This apparently simple cast pin is quite complicated in its manufacture. The pin and the corn cob were cast, whereas the bird is made of a separate stamped sheet - designed head-to-head, bent, and soldered to itself. The bird was then fitted over the top to create the appearance of a single cast object. A similar piece appears in *Kunst Und Kultur von Peru* (Art and Culture of Peru) by Max Schmidt, page 396. From a private Florida collection, acquired prior to 1980.

Provenance: Peru, Chimu, North Coast, c. AD 900 - 1350

Dimensions: Length: 5" Weight: 4.7 grams.

Retail: $1,950 MM625

54



Calima Cast Gold Lime Dipper of a Warrior with Animal Perched on Back

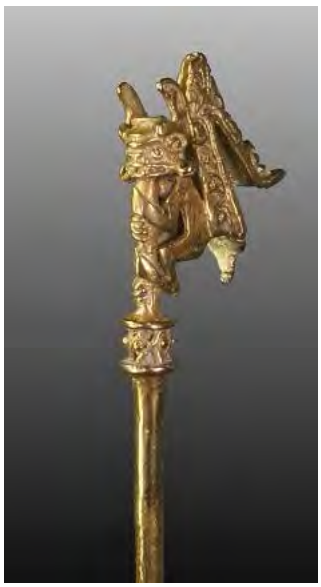
This finely cast gold lime dipper features a warrior with an animal perched on his back and a tapering shaft terminating in two bands of granulation. The warrior wears an elaborate mask, a curving headdress, and holds a staff with both hands. Gold lime dippers often featured warrior figures and were reserved for important personages. For further reading, see *Calima and Malagana*, by Marianne Cardale Schrimpff. A similar lime spoon is illustrated on p. 115, plate 111.34. This is an excellent example of lost wax casting. Acquired in 2000 from private New York collector.

Provenance: Colombia, International style, AD 700 - 1000

Dimensions: Length: 8 1/4" Weight 15.9 grams.

Retail: $12,000 MM618

55



Early Calima Gold Lime Dipper

A fine lost wax cast lime dipper with a mythological monkey deity on the tip. The monkey wears a helmet, ear spools, and an elaborate headdress which falls down the back of his body. Lime dippers were used to mix lime with crushed leaves from the *Erythroxylum coca* plant (from which cocaine is derived) to create a drug compound that functioned as a psychoactive stimulant used in ritual ceremonies. According to the research, only limited types of imagery was used for lime dippers, usually shamans or warriors. See *Calima and Malagana*, by Marianne Cardale Schrimpff for further reading. A similar but not exact motif is also illustrated in *Orfebreria Prehispanica de Colombia* on page 84, plate # 5232.

Provenance: Colombia, Calima, Yotoco Phase, Cauca River Valley, c. AD 100 - 1000

Dimensions: Length: 8 1/2" Weight: 25 grams.

Retail: $9,500 97146

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