

## YAO QIAN SHU (MONEY TREE)

There is evidence that as early as the fourth millennium **BCE**, the Chinese believed in an afterlife. They equipped tombs with utensils and provisions to help the deceased continue to prosper in the spirit world. Tomb furnishings could be as simple as a large storage jar for grain, symbolically providing nourishment for eternity, or as elaborate as carved jade ornaments designed to ward off evil spirits. The custom of providing for a comfortable existence in the hereafter reached extremes during the early Bronze Age, when dynastic rulers were accompanied in death by human and animal sacrifices as well as vast amounts of precious bronze vessels and weapons. By the time of the Han dynasty (206 **BCE**–220 **CE**), a far more humane age, sculpted figures of clay or wood replaced human sacrifice as companions for the deceased, and inexpensive clay pots took the place of grain and wine containers made of luxury materials.

*Yao qian shu* (money trees), such as the example in the Portland Art Museum's collection, come exclusively from Han-period tombs in Sichuan province and nearby areas. A fertile region isolated by mountain ranges, Sichuan has often fostered a distinctly regional culture throughout its history.

A money tree is a fantastical tree-shaped sculpture with a segmented bronze tube for the trunk and lacy, openwork bronze leaves, held upright by a heavy ceramic or stone base. The leaves almost always incorporate the design of the *wuzhu*, a round coin with a square hole that was the most common currency of the day. Because of their extreme fragility, money trees are very rare. Fewer than one hundred have been discovered, most of them in fragmentary condition. As of this writing, only twenty-some money trees are known to be in museum collections in North America. While the trees often have shared motifs, each one is unique.



The finial of the Museum's tree is unique among published trees. At the very top sits a crested bird with a feathery peacock-like tail. The bird is our clue that the tree itself is the magical *fusang* tree of Chinese legend. In the Eastern Sea grows a gigantic *fusang* tree, upon which the golden sun-bird perches every morning, bringing light and warmth to the new day. Beneath the sun-bird appear three creatures atop large *bi* disks: to the left and right, these are monkeys, seated at ease in the treetops, eating bananas. The central figure is a man standing with his feet planted firmly apart. His head is in profile, and he raises his hands above his shoulders, palm upwards. He wears a garment that wraps around his body and has long, flowing sleeves, with a divided skirt. A *bi* disk—an ancient auspicious symbol—dangles from his hem. What or who he represents is a matter of conjecture.



Along the trunk of the tree, cast as an integral part of the shaft sections, are five small Buddha-like figures, each surrounded by an aura of coins that seem to radiate light. Each figure has a prominent *ushnisha* (cranial bump) and is seated in a cross-legged position, with his right hand raised in a gesture of reassurance and the left hand holding his robe. These are traditional attributes of the image of the Buddha as it developed in northwestern India. Several other money trees with Buddha-like figures are known, as well as a similar type that depicts bears—popular as protective spirits in Han art—instead of Buddhas. It seems most likely that craftsmen incorporated Buddha figures in Chinese mortuary art as generically auspicious imagery, with little understanding of their original religious context.



The leaves of the tree are of two types. Each of the lower four tiers has four double leaves, extending in four directions at right angles. The smaller, inner leaf takes the shape of a dragon coiled on its back and nestled in coin-strewn foliage. Its tail, pointing downward, is the pin that hooks into a strap on the trunk, while its mouth has an opening to anchor the outer leaf. The outer leaf continues the coin-and-foilage motif and culminates in the figure of a phoenix with its wings outspread. The delightful visual effect of the joinery is to suggest that the dragon spews forth the phoenix leaf. In the uppermost tier, two phoenix leaves are attached directly to the trunk, perpendicular to the large finial.



The base of the Museum's Money Tree depicts two imaginary creatures who serve as protective guardians. They are both quadrupeds with wings, claws, and ferocious expressions, one standing on the other's back. The design of the lower part of the base is indistinct, but it may represent a mountain landscape encircled by a string of *wuzhu* coins strung on a ribbon.

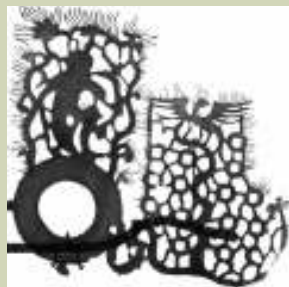
Magical trees, horned and clawed beasts, birds, monkeys, dragons, and Buddhas: it is difficult to see a systematic iconographic program in this tree and the creatures that inhabit it. It seems clear, though, that its Sichuanese patron wanted a potent assembly of auspicious figures to lend their blessings to his or her journey through the afterlife.

## KEY SCIENTIFIC DISCOVERIES ABOUT THE MONEY TREE

The Money Tree first came to the Museum in late 2004, just in time for inclusion in the special exhibition *Mysterious Spirits, Strange Beasts, Earthly Delights: Early Chinese Art from the Arlene and Harold Schnitzer Collection*. It arrived unassembled, and Museum staff devised a mount for its display. But in the years that followed, the thin bronze pins holding each leaf in place would occasionally break, and leaves would drop off. In 2009, we decided to remove the Money Tree from view in order to conduct a thorough conservation evaluation under the supervision of Elizabeth Chambers, Museum Conservator. With remarkable good fortune, that decision coincided with the arrival at Portland State University of Dr. Tami Lasseter Clare, a specialist in materials chemistry and its application to the conservation of artistic and historic artifacts. Dr. Clare graciously agreed to take on a scientific analysis of the Money Tree.

Over the course of the next two years, Dr. Clare and her students studied the Money Tree, making use of stereomicroscopic photography, X-radiography, and X-ray fluorescence tests. Their invaluable research led to a new understanding of the tree as an object of ancient Chinese material culture and mortuary practice. Dr. Clare also served as a consultant for the conservation and cleaning of the Money Tree, a project carried out by conservator Marie Laibinis with funding from the Arlene and Harold Schnitzer CARE Foundation and the Asian Art Council.

Some of Dr. Clare's key findings are presented here. All of the photographs on this panel are courtesy of Dr. Clare.



Final detail: X-radiography showing internal structure of a metal monkey.

### WHAT WAS HIDING UNDER THE LAYERS OF ENCRUSTATION?

When the Money Tree arrived in the Museum, several leaves and the finial were heavily coated with layers of yellowish-white encrustations, the result of the bronze in the tree corroding through centuries of interaction with its environment. What lay underneath the encrustations? Had the original leaves disintegrated? X-radiography showed that despite some areas of loss and damage, the original leaves were intact. For the first time, it was possible to see the remarkable quality of the caster's art: Each motif had originally been enhanced by a thin relief line, outlining its contours. The greatest surprise was the discovery of two monkeys in the finial, flanking the central figure.



Dragon leaf 69B: detail of a plant root embedded in surface encrustations.

### WHAT CAN WE DETERMINE ABOUT THE MONEY TREE'S HISTORY?

Stereomicroscopic images showed tiny plant roots embedded in the surface of the encrustations—evidence that the Money Tree was in contact with the soil for a long period. (The roots were subsequently removed when the Money Tree was cleaned.) The minerals present on the heavily encrusted pieces are various types of carbonates, which tend to form in underground environments lacking oxygen. Together these findings suggest that the money tree was buried, as one would expect of an object placed in a Han-period tomb.



Detail of phoenix leaf 69A.

### HOW WAS THE MONEY TREE MADE?

Archaeological reports about money trees excavated in China note that they were made by casting molten bronze in a two-part mold. Scientific examination of the Museum's tree confirmed that most of it was indeed manufactured that way. Stereomicroscopic images also provided insight into the caster's art, as they allowed us to see a raised rectangular mark on nearly every piece. These were possibly register marks—guides to ensure that the two mold pieces were assembled the same way in every casting. Because the original tree included 18 identical phoenix leaves and 16 identical dragon leaves, uniformity of casting served both practical and aesthetic ends, providing an even distribution of weight along the tree trunk and a harmonious design.

### ARE ALL THE PARTS OF THE MUSEUM'S MONEY TREE ORIGINAL?

Of more than 70 money trees that have been discovered in southwestern China, only one is said to have been found intact. Most of the money trees in museum collections in China and the West are skillful reconstructions, using some original pieces and modern reproductions, or pastiches using parts from multiple trees. Was there a way to determine how much of the Museum's tree was authentically Han dynasty in date, or whether the pieces came from the same tree?



Dragon leaf 23B: a modern reproduction.

As anticipated, some fragments of our tree are modern—that is, they were made after the tree was excavated in the twentieth century to fill in missing parts. X-radiography revealed that one dragon leaf, one phoenix leaf, and parts of two other dragon leaves were different from all the other leaves in several respects. First, they are completely flat, without the relief lines outlining the figural motifs. Second, they lack the signs of metal shrinkage that occurs when cast bronze cools in the mold. Stereomicroscopic images showed that the leaves were cut by machine tools from sheets of metal. Third, the leaves' blue and green patina is artificial, the result of chemicals and pigments that had been daubed onto the surface. Finally, the modern leaves proved to be made of brass, an alloy of copper and zinc, rather than the traditional bronze, an alloy of copper and tin (with trace amounts of other metals).

The happy conclusion of this investigation was that the great majority of the Money Tree's pieces—32 leaves and parts of two others—are of cast bronze and share all the pertinent characteristics of how they were made. They appear to be have been manufactured at the same time, in the same way, with the same designs. It is likely that they are original, Han dynasty in date, and derived from the same tree.

Research by Dr. Tami Lasseter Clare, Portland State University