

# Metal objects from the 1576 Manila galleon *San Felipe*

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Many persons are familiar with our work on the Manila galleon *San Felipe*. This 30-m-long ship crossed the Pacific Ocean from Acapulco, Mexico, to Manila in 1575 and from Manila toward Mexico in 1576, but was lost on the shore of Baja California. The galleon trade carried New World silver westward across the Pacific with the trade winds, exchanged the silver for Asian goods in Manila, then returned eastward by way of the northern Pacific where the westerly winds carried the galleons to the Californias and then south to Acapulco.

The *San Felipe*'s dying crew lost control of her off the Baja California coast. The winds carried her onto the offshore sands where she grounded. The survivors died, and the ghost ship lay off the beach for at least a year before a storm destroyed her and carried her wreckage over the low beach and onto the sands. Now we find her remains on the sand flats amid millions of shells, in the flats among the low dunes, and among the high dunes. The sands blow aside and reveal the ship's treasures; then they cover them over again.

The most abundant surviving artifacts are 1,700 porcelain sherds, like a south Chinese provincial dish that is the earliest fully identified and fully dated ware from this source in the world. Low-quality tableware originally was created for overseas Chinese, who would value the phoenix design as a symbol of the empress and therefore of a happy family. Better quality dishes are very Asiatic in design, a clue that this was a sampler cargo from a time when neither the Chinese nor the Spanish merchants knew what goods would be profitable in the New World; many products were sent to test this new market. Even polychrome porcelains suited for wealthy Japanese customers were sent to the new Spanish customers. Such colorful wares did not last long in the trade, despite their obvious appeal. Probably the Spaniards could make a higher profit from mid-range blue-on-white porcelains.

Combination plates with polychrome rims and blue-on-white centers were experimentally sent into the trade. One of our two complete porcelains is a very Chinese flying-phoenix bowl. Landscape bowls depict a Daoist paradise, a design so popular in the West that versions of it are still produced today in many countries. It now is called "Blue Willow." One badly fired plate was not discarded by its makers. "Those Spanish barbarians will buy it." And they did.

A fineware bowl, again is very Asiatic in its motifs, provides four distinct clues as to its date. It is the earliest fully developed and fully dated piece of paneled ware in the world. Such paneled bowls and plates from China dominated the European markets for nearly a century after this ship's voyage. As far as we have been able to determine, this bowl is unique. No other example exists in known collections. The bowl tells the story of a mischievous monkey distracting the gods while his companion steals the peaches of immortality. This monkey bowl is one of 114 types of porcelains found in this cargo.

But this cargo has more than porcelain stories to tell. Large Asiatic stoneware jars, of which we have found more than 350 sherds, were the common carriers of goods and food in the Pacific. Spaniards quickly learned to buy these Chinese and Indochinese jars rather than send to Spain for barrel makers for the Pacific trades. Huge blocks of Philippine beeswax provided the

candles for Mexican churches, because the New World did not have wax-making bees. They weigh up to 30 kg.

But it is the metal objects that are telling more stories year-by-year. Documents that tell the ship's story mention that she was sheathed in lead below the waterline to protect her from shipworms. One hundred and sixty fragments of lead sheets confirm the written accounts. Also belonging to the ship is a small sounding lead. It was tied to a line and used by the crew of the ship's boat to find out if the water was deep enough for the ship to follow the boat into a harbor. When I asked friends who worked on sixteenth-century shipwrecks elsewhere in the world to give me references to similar sounding leads, the answer was that there were no such references. This one apparently is the only one known from the sixteenth century.

Our metal-detector operator at first called one find "some bit of modern strapping." But it was not. This is a set of gimbals from a compass. These rings rotate within the compass box to keep the compass level as the ship rolls and pitches. They are so well preserved that they still pivot freely. This is the sixth set known from the sixteenth century. We wish to go beyond discoveries and reports, so we have had a craftsman reconstruct our compass and our sounding lead. Now, museums along the Pacific Coast are receiving these replicas. One of these compasses will be displayed next to the gimbals when our exhibit opens in Caracol in a few years, if present plans are brought to completion.

Personal possessions are very scarce in the finds so far. There are five silver Spanish-colonial coins, which are heavily encrusted with sand and corrosion products when they are found. Only two are out of conservation, but we can tell that four are two-real coins and one is an eight-real coin, an *ocho reales* or *peso*. Spanish medieval silver coins called *reales* weighed about one-eighth of an ounce. When silver mines were opened in Mexico and in upper Peru at Potosí, the quantities of silver led to the production of two-real, three-real, four-real and eventually eight-real coins. The *ocho reales* became the basis for the entire world's money system for 250 years. One two-real coin was minted in Mexico City under the direction of the mintmaster, or assayer, whose initial was "O." We do not know his name. This coin comes from the second coin design used in the reign of Spain's king Philip II. This design was first produced in Spain in 1570, then in Mexico City beginning in 1572. Study of the coins helps confirm the ship's date, which first was established by porcelain analysis to be between 1574 and 1577. If the mark on the *ocho reales* or one of the other two-reals coins is a "P," as we think one is, then the dating is closed down by one year, as this design was not introduced in Potosi until 1574, and a coin could not have traveled from Potosi through Lima, Callao, Acapulco, Manila, and back to the New World before 1575.

Another personal object is a fragment of a bowl that has been identified as an Iberian ware. It must have traveled from Spain to San Juan de Ullua, Mexico, or to Nombre de Dios, Panama, then across the continent, across the Pacific Ocean to Manila, and back again.

The defence of the ship depended in part on small arms. A brass lock plate from a matchlock handgun was discovered last year. It is not European, and it is not Japanese. Because it is a utilitarian weapon, few similar examples have survived in collections, so its exact origin is unknown. The weapon may have been Chinese, or it could have come from Southeast Asia. Manila had been attacked and looted by a pirate fleet and army led by a Chinese admiral and a Japanese samurai general in 1574, so ships coming from Mexico in 1575 would have been stripped of their cannon and good hand weapons to strengthen the city's defenses. Only low-quality hand weapons would have been put aboard the ships going east, which were expected to meet only a few natives on their voyage. Perhaps this is a weapon that was captured from the

pirate army when it was defeated by the Spaniards and Filipinos. One small lead musket ball that we found recently would have fitted into such a weapon.

Metal cargo items also are few in number. A Chinese bronze mirror must have been an exotic item for the Spaniards, because they had silvered glass mirrors that were more efficient than polished bronze mirrors. Such cargo reinforces the evidence that this is a sampler cargo. The Spaniards were buying whatever the Chinese traders were bringing from mainland China to Manila until they could work out what was most profitable for sale in Acapulco. The later sixteenth-century galleons had cargos that were much more suited to Spanish tastes.

We have found two fragments of Chinese cloisonné plates, the only ones ever found in a shipwreck. Cloisonné is a copper-alloy base with wires soldered to it. Then powdered enamel is placed into the spaces between the wires, and the ware is fired. A second layer of enamel is applied and fired, then a third layer. Then the surface is ground and polished. Finally, the exposed edges of the wires are gilded. Like the polychrome porcelains, these fragile plates must have been attractive to the Spaniards. Probably their high cost led to the Spanish merchants spending their money on silks, spices, and blue-on-white porcelains instead of these colored wares.

The Buddhist lion is a guardian figure in Chinese culture. A bronze male lion with his right front paw on a ball sits on an incense burner lid. The incense-burner bowl would have been fairly plain, with lion-paw feet. Perhaps we will find it on another expedition. The lion is hollow, and its mouth is open so incense smoke can billow out from it. The many unrealistic features of this lion, such as the broad, bushy tail, are typical of Chinese art, which often depicted objects or animals which had never been seen by the artists.

The remote beaches which hold the remains of the *San Felipe* shipwreck will continue to provide interesting and informative artifacts for many decades to come as the dunes shift with the winds to expose materials from the ship. One day a few years ago, we had unlimited visibility which enabled us to see mountain tops more than a 11 km away to the north and to the south. The sun was low on the horizon as we walked back to the place where our boat was expected to pick us up. I looked back at one point and realized that in our vista of more than 200 km, the only trace of human beings was our five sets of footsteps in the sand. We look forward to returning to the search as long as we are able to walk the beaches and the dunes.