

Hard Labor: Chiseling the Mountain

The gold in the Sodayū Mining Tunnels was excavated from hard, quartz-rich rock. Miners excavated the ore using hammers and chisels, which was very slow work. A pair of miners digging for 8 hours made only around 10 centimeters of progress, and their chisels had to be replaced two days.

The tools were resharpened by blacksmiths stationed outside the mine. These specialists also made and repaired other tools, such as the pliers that miners used to hold their chisels steady. Making new tools and maintaining old ones was never-ending work, and large quantities of iron was regularly imported from the mainland to supply the blacksmiths' workshops.

Surveying and Planning

Officials from the Sado magistrate's office did the work of surveying and planning the tunnel excavation. Prospectors called *yamashi* located veins of gold, and highly trained engineers designed the mine tunnels. A well-planned mine had tunnels for ore extraction, ventilation, and drainage.

Many of the tools and calculation methods used at the Sado Island Gold Mine would be familiar to mine surveyors today. Surveyors working on Sado used the latest European methods, which had been introduced by Dutch merchants. In the 1690s, the renowned surveyor Shizuno Yoemon is said to have used techniques learned from the Dutch when he planned the Minamizawa Drainage Tunnel. The kilometer-long tunnel was dug in three sections simultaneously, and Shizuno's plans were so precise that the sections, when joined, lined up almost perfectly.

Yawaragi: Softening the Mountain

When prospectors discovered a promising vein of gold, a ritual called a *yawaragi* was held before mining began. The miners offered prayers to the god of the mountain to soften the rock and to keep the workers safe. A *yawaragi* ritual is still performed at Ōyamazumi Jinja Shrine each July on the first day of the annual Mine Festival.

Notice the centipedes that adorn the straw-colored costume worn by the central figure on the platform. Centipedes were thought of as messengers from the mountain god, and miners saw them as good omens, possibly because their legs resemble veins of gold and silver. Centipedes are also symbols of wealth due to an association between their many legs (*ashi*) and a slang

word for money (*ashi*).

Exhibit Room 1

Most of the gold from Sado Island Gold Mine was turned into coinage. The dioramas in this room show how the metal was mined, dressed, smelted, refined, and minted into oval-shaped coins called *koban*. The finished coins were transported to what is now Tokyo, a journey by sea and land that took 11 days. From there, they were circulated throughout the country.

Exhibit Room 2

The museum's second exhibit room contains a model of the mine's gold and silver ore veins and reproductions of several types of coins. Depending on the time at which it was made, a typical *koban* coin contained anywhere from 10 to 15 grams of gold and required 2 to 3 metric tons of gold ore. According to records from the mid-1700s, the value of a single *koban* was roughly equal to the combined daily wages of 23 skilled woodworkers. Today, just one of these coins would be worth as much as 1,000 US dollars.

Coins were minted on Sado Island from 1622 to 1819. At the rear of the exhibit room is an original *koban* marked with the first of the two kanji characters for "Sado."

Modern Mining: Dōyū Tunnel

The Dōyū Mining Tunnel was first excavated in 1899. Unlike the much older Sōdayū Mining Tunnel, which was dug by hand, this tunnel was excavated by blasting. One clue to the mine's age is the presence of cylindrical holes here and there along the walls. These were drilled for sticks of dynamite.

In 1896, the government sold Sado Island Gold Mine to Mitsubishi Gōshi Kaisha (now the Mitsubishi Corporation), and the Dōyū Tunnel was completed three years later. Unlike the older tunnels, which slope and wind through the mountain, barely wide enough for a single person, the newer Dōyū Tunnel is wide and level to accommodate modern, rail-mounted minecarts for transporting large amounts of ore.

Sake Cellar

The temperature in the tunnels is a chilly 10 degrees Celsius throughout the year, a perfect environment for storing sake. Even today, producers of sake and *shōchū* spirits on Sado Island use the tunnel as a place to age their products for several years. When the mine was still active, miners supposedly stored watermelons in the mine as a cool, sweet snack to eat between shifts.