

Forging Japanese Swords

Single-edged blades have been produced in Japan for centuries using forging techniques that create exceptionally strong steel with complex surface grains and temper patterns. Japanese sword making was designated an Important Intangible Cultural Heritage in 1955.

Over the centuries, various types of blades with different lengths and curvatures emerged in response to the needs and styles of the time. All of the blade styles, however, have shared a similar forging technique. The raw material is a low-impurity iron sand that is mixed with charcoal, smelted, and forge-welded into a type of steel called *tamagahane*. These steel blocks are repeatedly folded and hammered out to remove impurities and distribute the carbon content evenly, resulting in a high-quality, multilayered steel. The tip of the blade is cut at an angle and hammered to form the point, after which the entire surface is smoothed.

Next, the sword is tempered to increase its strength and ability to hold a sharp edge. The smith first applies a mix of clay, charcoal, and powdered whetstone to all but the cutting edge. The blade is heated, then abruptly quenched in water, which creates a unique temper pattern along the blade's length. Then, any distortions in the blade are corrected using a hammer, and the blade is polished to razor sharpness. The final step is the inscription of the smith's signature (*mei*) on the tang, the part of the blade that fits inside the hilt.

Cast swords—formed by pouring molten metal into a mold—had existed since at least the Kofun period (ca. 250–552). It was not until the Heian period (794–1185), however, that domestic swordsmiths began to forge swords. At the end of the twelfth century, the very long, arced blades called *tachi* emerged, marking the true beginning of *nihontō*, or Japanese swords.

During the turmoil of the fifteenth and sixteenth centuries, a slightly shorter sword called a *katana* became the dominant style. While some finely forged swords were produced for rulers, many lower-quality, mass-produced *katana* were made for ordinary samurai. In the early seventeenth century, however, peace was achieved under the Tokugawa shogunate. Over the next two centuries of shogunate rule, swords became

important symbols of status and power. This drove increased sophistication in the craft as wealthy patrons demanded works of both functional and artistic value. Swordsmiths and artisans of related crafts gathered in castle towns to meet this demand.

Both the blades and the associated mountings and fittings were often works of art, made by specialized artisans. Ornate additions, like custom-made wood scabbards covered with lacquer and gold *maki-e*, hilts covered in silk-wrapped sharkskin, and finely wrought hand guards inlaid with precious metals, showed the wealth and status of the wearer. Thanks to the patronage of the Maeda lords, Kaga domain (present-day Ishikawa and Toyama Prefectures) was able to attract and foster many skilled swordsmiths and related artisans from the seventeenth to nineteenth centuries.