

## 11.6 Japanese Swords

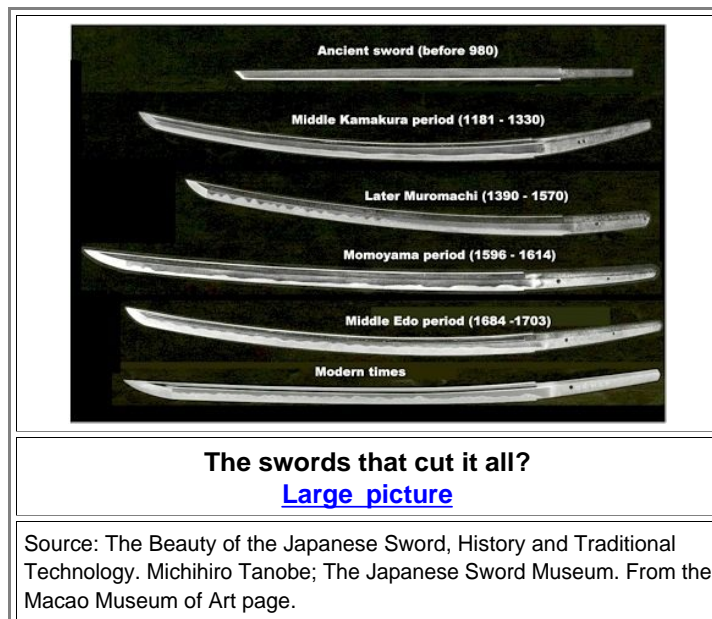
### 11.6.1 The Myth and the History of the Japanese Sword

#### The Myth

I started this enterprise because I wanted to know more about a few things concerning iron, steel and swords. I'm a materials scientist after all, and I should know a bit more than just the essentials about iron and steel, even so my speciality are semiconductors. Somehow the project went out of control. By now I have written around 370 modules, far more than anticipated. Now I'm about to write the last modules about sword making. I'm now getting to the ultra-famous **Japanese Sword!** The climax is near!  
You know what?

**I'm bored  
And I'm fascinated**

- *I'm bored* because the making of a Japanese sword just doesn't contain much new stuff. Pretty much everything of basic *metallurgical* interest connected to the making of Japanese swords has been covered before. Note that I'm *not* saying that a Japanese sword isn't a supreme weapon or a major *piece of art*. I also have no problem asserting that it counts among the best swords a smith can make with bloomery-made iron and steel. I do state, however, that the same can be said for a well-made Iranian wootz shamshir with a kirk nardaban pattern, a Roman pattern welded sword, a Frankish all-steel sword and many other swords. In other words: when considering Japanese swords, [art appreciation](#) is often more important than metallurgy.
  - *I'm fascinated* for a number of reasons. Most prominent, perhaps, because the "Japanese" look at "their" swords primarily as pieces of art and not weapons, indeed. The art created by a smith, no less! Important features of the piece of art called, for example, a katana, are how the smith manipulated finer details of metallurgy to achieve certain delicate features visible on the blade if you know how to look. The attention to details, in other words, is just way above anything encountered elsewhere, as far as we know.  
My fascination is real - I actually acquired a "Daisho" from the Edo Kanbun era (1661 - 1673); more about [that here](#)
- So what is so special about Japanese swords or katanas? I'll give you a whole list below but the first point is simple: they are still around in prime conditions! The same goes for (wootz-bladed) shamshirs, tulwars, and so on. In contrast we do not have a single old pattern welded sword that still looks like new. All you see in most cases is a piece of heavily corroded steel and that makes it difficult to admire that thing as a masterly piece of the smiths art. One needs to bear in mind that a typical pattern welded sword is about 800 - 400 years older than the typical [nihontos](#) or shamshirs from 1200 or later.



Looks do count, as the fashion industry knows. Good looking models routinely do make more money than knowledgeable and useful engineers. The [Tizona of El Cid](#) is probably just as good in a fight as Japanese swords from about 1050 AD or later but she is just not as showy. The Tizona neither is highly polished nor does she sport a "hamon". We don't know if she has the hardened martensitic edge necessary for a hamon but it is quite likely for swords of her age and prominence.

A Japanese sword just looks great. Some sports cars are described that "even standing still they seem to break the speed limit" and a Japanese sword gives you a similar impression as to what it can do. In its highly polished glittering splendor it already *looks* much sharper than your regular dull-bladed straight sword. Japanese swords just look good, even the old ones. That is the first point for understanding how a whole mythology could develop around the Japanese sword. It does look like a deadly awe-inspiring weapon and, being perfectly preserved and polished, it looks just great. What else is there? Quite a bit. I only give you a few of the salient points; the Net is full of details. Note that much of what follows also applies to wootz swords; I [mentioned this](#) already. Here is my list of all the particulars that work together for producing the myth of the Japanese sword:

1. It's perfectly preserved and still looks great after 800 years or so. See above.
2. The Japanese themselves created a huge cult about their swords and what the possession of a sword meant for its bearer. Look up the "code of the Samurai" etc. The Germanic tribes in the (early) first millennium might have had a big sword cult too, but neither did they write anything down nor do we have well-preserved swords. No competition there.
3. Some Japanese swords come with a certificate of what they could do. It's chiseled in the tang. And we talk about the results of [experiments](#) here, like how many heads could be severed in one blow. If you own such a Japanese blade you actually know that it severed a few heads; maybe many. That makes for this special feeling you just don't get with other swords.
4. The Japanese swords come with a large number of great sounding Japanese names for an unbelievably large number of very important details. Learning all this stuff puts you into an exclusive group with grandmasters and all, and that feels good.  
"A long HOSO-SUGUHA that becomes gently ASAKI-NOTARE KO-MIDARE BA in deep NIOI-FUKAI and KO-NIE. There is ASHI and YO, and KINSUJI strikes through figures becoming slightly SUNAGASHI", says a recent advertisement for a sword you can buy. Can't beat that. [Here](#) is an illustrated guide for the most important terms around Japanese sword, and [here](#) is a full treatment that might infect you with the Japanese Sword appreciation bug.
5. The manufacturing process did not change much in more than 1000 years. Bloomery steel was and is used. Since there is a general myth that ancient techniques are somehow better than modern ones, this adds to the myth about the Japanese sword.
6. The Japanese sword is known to be unbelievably sharp. Far sharper than anything else, because it was polished and finished by experts drawing on hundreds if not thousands of years of experience and of course with special and ancient secret ingredients. This is mostly plain old BS but just too good to be disbelieved.
7. A good Japanese sword effortlessly cuts through about anything without suffering damage, especially through all the non-Japanese and thus inferior swords. This is completely plain old BS. Since owners of valuable Japanese swords never try to [cut a stone](#) with it, for example, the myth lives on.



Enough. There are plenty of books and innumerable Internet sites dealing with the Japanese sword. And there are people in Japan right now who smelt iron and steel the old-fashioned way, and smiths who forge sword blades just as their ancient forebears. That is a wonderful thing, to be sure. It is not an unique thing, however. **Patrick Barta** from the Czech republic does all of that for pattern welded swords, and several Americans (and others), foremost **Al Pendray**, successfully [try their hands](#) on making and forging wootz steel.

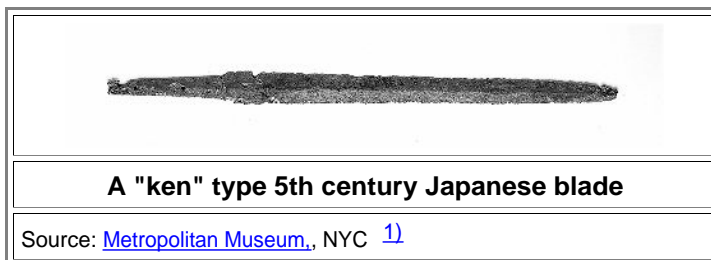
### A few Remarks About the History of the Japanese Sword

The Japanese have (of course) an elaborate system for classifying their swords according to history. Here is the general outline:

1. **Jokoto** Ancient swords, until around 900 A.D
2. **Koto** Old swords from around 900–1596
3. **Shinto** New swords, 1596–1780
4. **Shinshinto** New new swords, 1781–1876
5. **Gendaito** Modern swords, 1876–1945
6. **Shinsakuto** Newly made swords, 1953–present

Due to a bit of unpleasantness related to loosing a war there is a hole in the history from 1945 - 1953. It probably could be termed "stealing of Japanese swords by Americans". Some claim that after the war there were more Japanese swords in the United States than in Japan.

Looking at the **Jokoto swords** one finds, first of all, not all that much and second, straight double-edged "spatha" type blades. Here is one known as "ken" (or "tsurugi") type:



The next picture, often encountered in the Net but with no clear description, shows mostly Japanese swords but also one or two Chinese swords from the 6th century. Note that they are single-edged; technically they are [backswords](#)



There is no clear descriptions because the Metropolitan is a bit vague about these treasures <sup>2</sup>. There also seems to be little known about the metallurgy of these swords (couldn't find anything in a short search) but they are likely less sophisticated than their 6th century [pattern welded](#) counterparts in Europe. These swords embody the Jokoto (or chokuto) swords mentioned above. Their blades might consist of (faggoted?) quench-hardened steel since this technique (known to the Celts and Romans) was first used in the 6th century in Japan.

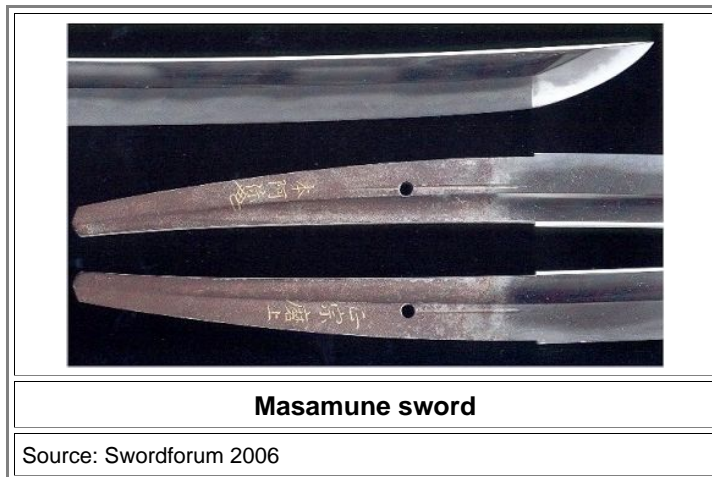
Generally speaking, the early Japanese sword, or the technology for making it, supposedly came from China and / or Korea. I'm not debating that but considering that [China's steel products](#) were made from cast iron and not from bloomery iron / steel, it is not clear to me why Japanese swords were made from bloomery steel only up to this very day.

Next we have the **koto sword** (900–1596). If you look at the [picture above](#) or the [full scale rendering](#), you see a number of koto swords. They look more or less like the rest, and they have about everything that metallurgically defines a Japanese sword.

No. Don't send me now hate mail or worse. I know of course that there are huge differences between koto, shinto, shinshinto, and so on - if you *only* look at Japanese swords. But if you look at [all swords](#), all of the above qualifies just as "Japanese swords". And that's why I will only give a few highlights with regard to these blades.

**Koto.** Old swords from around 900–1596

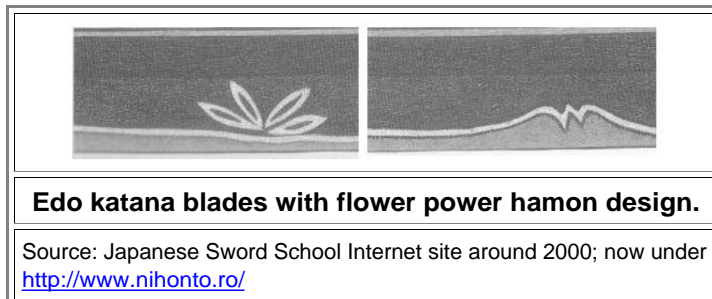
The typical sword of that period is the **tachi**. It is somewhat longer but otherwise quite similar to the later **katana**. Many katanas, in fact, were made by shortening an old tachi. A tachi was always worn suspended from cords on a belt with the blade facing downwards. Early models had uneven curves (i.e. not given by parts of just one circle or one "radius of curvature") with the deepest part of the curve at the hilt. It was in essence a cavalry sword. The making of koto swords marks the climax of Japanese sword forging. **Masamune** (c.1264–1343), widely recognized as Japan's greatest swordsmith, made kotos around 1288 - 1328. Here is the so called "Ikeda Masamune". It was a tachi but later shortened to be a Katana.



**Shinto.** New swords, 1596–1780

These are considered inferior to most koto. Manufacturing complexity was lower in this period. **Katanas** appear and they are now worn stuck through a sash or belt and paired with a smaller blade, the **wakizashi**, to form a "**Daisho**" (literally: "long - short"). The blade faces upwards in both cases.

The quenching technique had been fine-tuned to produce intriguing if occasionally ridiculous results, in particular in the Edo era (1684 -1763). As a Japanese source states in somewhat ungrammatical but rather clear English: "[This means that Samurai corrupted](#)".



**Shinshinto.** Literally "new new swords" 1781–1876.

Going back to the koto style; "shinshinto" can also be interpreted as "new revival swords". Shinshintos are considered superior to most shinto, but still inferior to koto.

● **Gendaito.** Modern swords, 1876–1945.

**Shinsakuto.** Newly made swords, 1953–present

Forget them. The one remarkable thing about shinto and later is that all these swords were still made from bloomery iron and steel. The Japanese sword manufacturing business never switched to blast furnaces and steel fined from cast iron. If that makes the swords better is open to doubt. That this makes the swords a hell of lot more expensive is a fact.

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1) The text of the Metropolitan to the ken (slightly shortened):

This ken was discovered in one of Japan's most famous early burial mounds, known as the Eda Funayama Kofun (burial mound), located in Kumamoto Prefecture, on Kyushi Island, in southern Japan. The mound, which was excavated first in 1873. Swords of this period are extremely rare and show the earliest stage in the development of Japanese sword blades. The ken, a sword with a straight double-edged blade based on Chinese prototypes, was used in Japan from at least the third century until the sixth century. At the end of that period, the double-edged sword was gradually superceded by the single-edged type, from which all later Japanese swords developed.

1) There is only one text for one of the swords. As far as I can make out, it is the one in the middle:

**Sword with Scabbard Mounts. Date:** ca. 600. **Culture:** Chinese. **Medium:** Iron, gilt bronze, silver, wood.

This sword is said to have been found in an imperial tomb at Mang Shan, north of Luoyang, Henan Province. The P-shaped scabbard mounts, probably derived from long swords worn by nomadic Sarmatian and Sasanian horsemen, served as a prototype for the Japanese tachi (slung sword). The ring pommel takes the form of two confronted dragons. The rest only carries descriptions like:

**Sword with Scabbard Mounts. Date:** 6th century. **Culture:** Japanese. **Medium:** Iron, gilt bronze, gilt copper, silver.