

# 日本刀 Nihon-to Japanese Sword



Sharpening a sword

Sometimes referred to as “*Bushi no Tamashii* (samurai’s spirit)”, a Japanese sword had been an essential item for a soldier *samurai* until the Edo period. Although it is a weapon, its beauty has come to be highly appreciated today, and it has been deemed as an object of art not only in Japan but worldwide. Japanese swords are made from steel called “*wakou* (Japanese steel)” or “*tamahagane*”, produced by Japanese traditional technique that uses clay furnace and bellows called “*tatara*”. This method uses iron sand instead of iron ore used for other methods found elsewhere in the world, and this makes it possible to reduce to iron metal at relatively

low temperature. Consequently, this method can produce very high quality and high purity steel which exceeds the level of modern steel making methods. This is the reason why Japanese swords attract wide attention as a highest ranked iron sword in the world. The three features required for a noted Japanese sword are that it does not break, it does not bend, and it cuts well. From ancient times Japanese sword makers had made various efforts to realize all three features at the same time. Not only the technique to produce good steel, but also hammering methods to make the material steel into swords have been handed down. Material steel for swords is heated first, hammered into thin and flat piece, and then cooled rapidly in water. Excessive carbon contained in the material is removed by repeating this process. Then the surface is treated with rice straw preventing from excessive oxidation of the steel by the help of silicon contained in the straw. After this process, hammering is repeated for a number of times by folding the hammered steel. In this way, impurities such as sulfur, excessive carbon and non-metal inclusion are removed, and homogenous and strong multi-thousand layered blade is created.



Hammering material steel

## NEW FACE!

Costa Rica



Rafael-Angel Rodríguez-Arguedas / Tachmajal Corrales-Sánchez / Oscar García-Montero / Wainer Camacho-Arias

We want to achieve the highest prizes by making our efforts, and also we want to know people, make friends, and have a great time.

It's awesome. The biggest city we have ever seen and also is really organized.

日本はとてもきれいだよね。  
"Very beautiful" They gave us the comment in Japanese.



Syria

I am so happy and I feel that I'm a lucky person to participate in Japan.

I think that Japan is a very nice country but I can't stand its hot weather.

Ali Rachad Mourtada / Ali Feisal Issa / Mohammad Ali Shubat / Rouaa Kamal Al Nan