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A Comparison of Iranian Carpet Designs, Iranian *Pulad-e Johardar*, and Japanese Swords by manouchehr Moshtagh khorasani

Many collectors and connoisseurs, in Iran and other countries, appreciate the beautiful patterns and designs of Iranian carpets. The fame of Iranian carpets is legendary, and they are classified based on where they were made. Names of carpets such as Qom, Nain, Tabriz, and Isfahan reveal the centers where the beautiful Iranian carpets with their magnificent patterns were knitted. All Iranians appreciate the beauty of Iranian carpets even if they do not know all the intricacies of the art of Iranian carpet-making.

However, few Iranians are even aware of the rich heritage of their ancestors who made *Pulad-e Johard-dar* (watered steel or crucible steel). During the course of time, Iranians forgot that the patterns of watered steel were even more appreciated than the carpets. The Safavids even considered this type of steel a holy material. Watered steel was even more expensive than gold. This is easy to understand when one takes into consideration that blades were made of steel ingots during hours of extensive hammering at cherry-red temperatures. Forging a bar from a steel ingot or cake was a tiresome task, even more so was shaping the bar into a blade. The blades were then polished with stones, to remove the forge scale and finish refining the shape. Now the steel was reheated in the forge, quenched in oil, and tempered. The next step involved etching the blades with an etching solution. Even the exact component parts of the etching solution differed from one smith to the other, and was kept as a jealously-guarded craft secret. The etching solution revealed the patterns of watered steel on the surface of the blades. At this stage the beauty of the blades could be admired and judged by people. Different factors contributed to the patterns on the surface of watered blades, namely the composition of the steel ingots, the amount of time spent on hammering, the hammering techniques, and the ingredients of the etching solution. Steel ingots or cakes were made in different countries, such as in India, Asia Minor, Sri Lanka, and even in Iran itself. Making ingots was a laborious undertaking, involving many hours of continuous heating in a furnace.



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Only a limited number of ingots could be made in each furnace. After heating, the ironworkers allowed the ingots to cool down in the furnace and examined the surface of the steel ingot. A slightest crack or porosity rendered the ingot useless, as these would result in holes in the surface of the blade -- which meant a failure in the blade itself. Therefore, such ingots were simply discarded or remelted into new ingots. Smiths from different regions used different recipes for making ingots. This of course resulted in different types of steel ingots. The wootz ingots were traded extensively to different countries.

There are accounts of Iranian smiths from Isfahan who preferred the Indian wootz ingots as they resulted in the most beautiful patterns. It is important to note that even in the *Shahname* there are reports of *Tigh-e Hendi* (Indian blades), which refer to the fact that considering the time Ferdowsi penned the epic *Shahname*, swords were made of Indian wootz ingots back in the Samanid and Ghaznavid periods.

One could also assume that as the *Shahname* is based on ancient Iranian tales, this tradition of importing wootz ingots/ cakes could have had an even longer tradition in Iran. It is interesting to note that although the best ingots came from India, the craft of forging wootz ingots into blades reigned supreme in Iran, as Iranian blades were sought after by the Ottomans, Indians, Arabs, and, later, Europeans. The pattern of Iranian wootz blades *Pulad-e Johardar* was the most beautiful and the most sought after in the region. This resulted in an active trading of Iranian blades to the neighboring countries and they became the object of interest even for the Europeans. Many tried to emulate the level of craftsmanship of Iranian smiths, but few succeeded.

There are even reports of Iranian smiths who worked for the Moghul court in India, to teach the intricacies of the craft to their Indian counterparts. The amount of time spent on hammering the ingots and bars also resulted in differences in steel patterns. Normally the longer the hammering took, the tighter the patterns became. Two patterns which were highly appreciated were *Siyah (Kara) Khorasan* and *Siyah (kara) Taban*. The hallmark of both was a woodgrain or mottle pattern structure alternating between white and black areas.



Figure 1: Mottle or woodgrain pattern on the blade surface of a shamshir (above)

Steel ingots which were used to produce a mottled or woodgrain pattern could be further manipulated during the forging process, resulting in other patterns. One of these techniques involved methods of engraving the steel bars



with transverse lines. During this process, smiths chiseled the bars with transverse lines and, after heating the bars and hammering them, the magnificent pattern of “Mohammad’s ladder” revealed itself on the surface of the blade. The number of rungs differs from one blade to the other, from 20 rungs to 40 rungs on each side of the blade. The creation of this pattern was, of course, an allusion to the *Me’raj* of the Prophet Mohammad to heaven. These blades had deep religious meaning for their owners and were highly sought-after. Even today Iranian blades are of major interest for European, North American, and Asian collectors, something which has unfortunately escaped the eyes of Iranians both

in Iran and abroad.

Figure 2 : Pattern of Mohammad’s ladder *Nardeban Mohammad* on the blade surface of a *shamshir* (above)



Figure 3 : Rose pattern on the blade surface of a *shamshir* (above)



Figure 4 : Water pattern on the blade surface of a *shamshir* (above)



Figure 5 : *Sham* pattern on the blade surface of a *shamshir* (above)

The pictures above show the intrinsic beauty of watered blades (*tigue-ye johardar*) on Iranian swords. As mentioned at the beginning of this article, the art of appreciation of watered blades was lost in the course of time. One should never forget that watered steel blades were held in high esteem and were considered to be pieces of art. Iranian blades have the same level of artistic quality of blade patterns as the Japanese blades do. Japanese swords still enjoy a high reputation in Japan.

They are the soul of the samurai and the symbol of pride. The tradition of forging Japanese blades is still alive and has been flourishing year after year. Not only the traditional patterns of steel are pursued, but also new forms for creating *hada* , *jihada* and *hamon* . There is even a professional organization named NBTHK (Nippon Bijutsu Token Hozon Kyokai), which holds annual competitions for selecting the best smiths. Taking a look at the tasks of this organization reveals how much art swords are appreciated in Japan:

- 1) The identification, classification, and documentation of Japanese art swords;
- 2) The production of *tamahagane* (a special type of steel used for making art swords) in a special foundry;
- 3) The organization and management of a competition for swordsmiths, sword polishers, and all other artists working in the field of Japanese swords;
- 4) The offer of seminars in the field of sword appreciation;

- 5) The publication of a monthly magazine;
- 6) The publication of a monthly magazine with descriptions and presentations of special swords, swordsmiths, forging methods;
- 7) The publication of books on Japanese swords;
- 8) Restoration and caring for Japanese swords; and
- 9) Annual exhibitions;

The best smiths are raised to the level of intangible cultural assets in person. A huge number of Japanese artists, collectors, scholars, intellectuals, politicians, businessmen, lawyers, and doctors are interested in the art of making Nihonto (authentic Japanese swords). Huge numbers of academic books have been published in Japan and internationally. A solid framework of classification of all Japanese swords provides the enthusiasts with the means to understand their cultural heritage thoroughly and contribute to it. In contrast, the picture looks bleak as far as Iranian blades are considered.

The interest for Iranian *Pulad-e Johardar* is minimal in its native country, where large numbers of Iranians should be proud of their cultural heritage and the art of swordmaking. It is time for all Iranians to revive this art and contribute to this field; these pieces are not only beautiful, and true pieces of art, but at the same time, Iranian warriors wielded these swords to defend the national integrity of Iran throughout the centuries. It is time for my dear compatriots to start to appreciate not only the heroic battle scenes fought by Rostam and other Iranian *Pahlavanan* in the *Shahname* as they have always done, but also start to appreciate the true artistic nature of these weapons. This way we could someday establish an organization for the appreciation of art swords in Iran.

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