

Real Life *Kantei* of swords #16: About the position of the *mekugi ana* in the *nakago*

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Introduction

Some time ago, there was a heated discussion about the position of the *mekugi ana* in the *nakago* among members of the NBTHK in the magazine *Token Bijutsu*. **Duidam(1984 a)** , **(Duidam (1984 b)** , **Duidam (1984 c)** and **Barros (1985)**).

In our opinion the discussion was about if there was a position on the *nakago* that was preferred by sword smiths when drilling (or carving) the *mekugi ana*. As far as we know, Alfred Dobrée raised this discussion in his booklet (**Dobree (1971)**). We thought that this subject was completely ignored by the Japanese authorities as argued by **Barros (1985)**, but recently we found two articles in which this subject is treated seriously. The purpose of this article is to call attention of the readers these articles and provide additional insights into the placement of *mekugi ana*.

The *mekugi ana* position discussion

The existence of the *mekugi* is peculiar to Japanese swords. As explained in a previous article **Tanner (2018)**, the manner in which the grip of hilt (*tsuka*) is fixed to the tang (*nakago*) of the sword varies when we go from East (Japan) to West (Europe). In a European sword, there are steel pins that attach the hilt to the tang and are hammered into other side of the hilt. There are usually more than two pins so the blade is permanently fixed to the hilt. (One exception are small swords that have the end of the tang transformed into screws and that are fixed by a bob on the top of the hilt). The hilts of the swords of the Islamic world and India are similarly fixed. Swords of the Far East (except Japanese ones) have their tang glued to the hilt. In the Japanese sword, the *tsuka* is held to the *nakago* by a bamboo peg called *mekugi*. Some people doubt the *mekugi* is in fact the piece responsible to hold the *tsuka* to the blade, arguing that it is held mainly by friction. We know the *mekugi* is the piece that does this job, because without the *mekugi* the *tsuka* is easily removed by hitting our wrist while keeping the sword in the up-right position. Since the *mekugi* is an entirely different method to hold the hilt to the tang, only used in Japan, many people have tried to understand why it works so well. In the discussion, the authors expressed two different concerns.

The first concern, raised by Dobree (**1971**), was if the *mekugi* would stand the tension to which it was subjected to when the sword hit the target and stopped. To resolve this concern Dobree thought that the *mekugi* was drilled very approximately in an area that would make the *mono uchi* of the blade the so called percussion center with respect to the position of the *mekugi ana*. By doing this, the stresses on the *mekugi* are minimized. The existence of a sword percussion center is demonstrated in his book by a device he developed to test his theory. The fact a percussion center exists is demonstrated with a modern and simple example, called the sweet spot in a baseball bat. If the ball hits the bat on the sweet spot, the hand will not feel the shock. With a sword, if the blade strikes the target far from the *mono uchi* area, the *mekugi* is strained in the same way as if a baseball strikes the bat far from the sweet spot and the hand of the batman feels the shock.

The articles by Duidam are more comprehensive. He discuss the position of the percussion center, the centrifugal force that tends to separate the blade from the *tsuka* when the sword is swung and the best type of *mekugi*, how it should introduced in the *mekugi ana* and how much force it can withstand. In spite of this very nice study, the late Benedicto Ferry de Barros (**Barros (1985)**) argued that many people including himself were far from convinced. In the opinion of the author of this article, the substance of his arguments is the opinion that the *mekugi* was placed more or less randomly on the *nakago* by the swordsmith.

In fact, Barros goes to the extreme length of doubting the existence of the percussion center (which is a well-defined physical concept) and of the existence of the *mono uchi* area in the blades.

The purpose of this article is not to discuss the above opinions on how the *mekugi* works. It is obvious that it works very well. The question is whether the sword smith put the *mekugi ana* at his preferred position in the *nakago* or not. It is also true that we can find swords without a *mekugi ana* or swords that are very long and have more than one *mekugi*.

We have recently noticed two articles by Yokoyama Manabu, translated in the first issue of the Afu Quaterly volume (**Yokoyama (1995)**) that argues quite convincingly that swordsmiths did think hard about where to drill their *mekugi ana* in the *nakago*. The purpose of this article is to call the attention of the readers to these articles.

Position of the mekugi ana in Tadayoshi the first (shodai) and Tadayoshi the third (sandai).

The signatures of Tadayoshi I and Tadayoshi III (when they signed Hizen Kuni Tadayoshi) differ in a few areas, as pointed out by Yokoyama. They are often confused; however, a simple characteristic is easily used to distinguish them. This is the position of the *mekugi ana*. The figure 1 below (from the article by **Yokoyama (1995)**) illustrates **three** swords by the *shodai* and four swords by the *sandai*. The swords by the *shodai* are the ones on the left.

The distance from the center of the *mekugi ana* and an imaginary line joining the *mune machi* and the *ha machi* in the swords made by the *shodai* is approximately 5 cm. In the swords made by the *sandai* the same distance is approximately 6 cm. The reason for this difference at first sight, seem to suggest that the *mekugi* and was randomly carved by the smiths. Apparently, this position was carefully calculated. In fact, the difference is correlated to the time of production of the swords as explained below

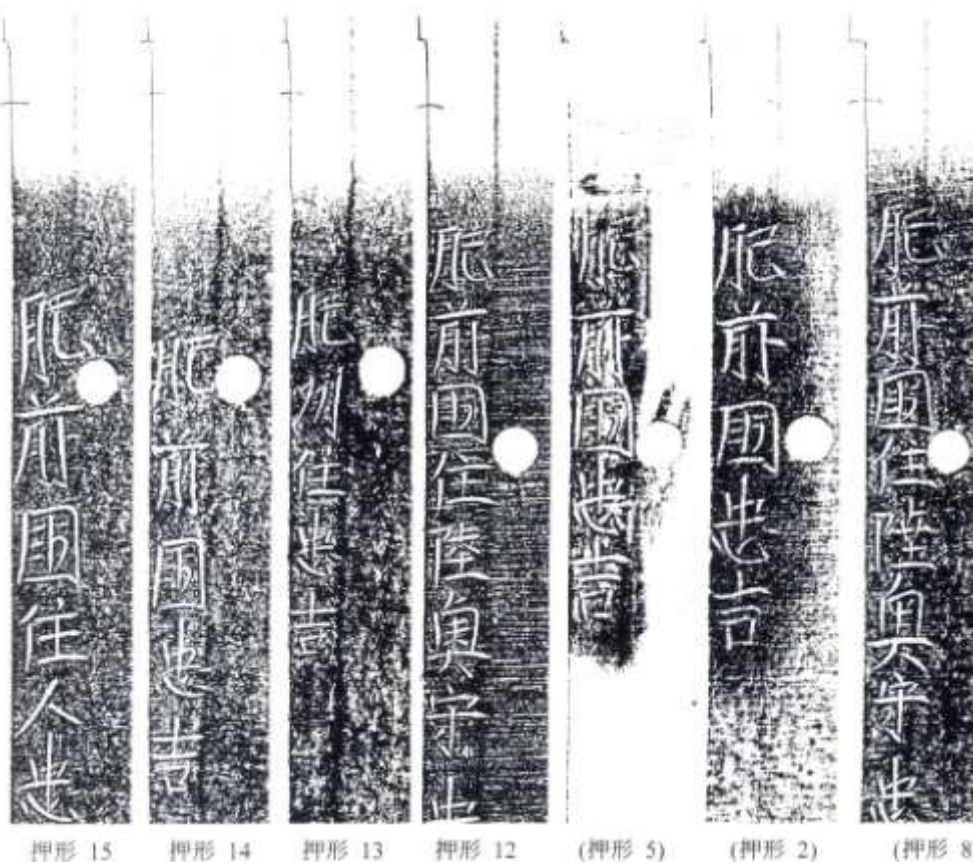


Figure 1-
Examples of
signatures by the
shodai (the three
oshigata on the
left) and the
sandai (the four
oshigata on the
right).

When the *shodai* worked during the Keicho (1603-14) and Genna (1615-23) eras his work was

modeled according to Koto masters. The *sandai* on the other hand worked during the Kanbun (1661-1673), Enpo (1673 - 1681) and Tenwa (1681- 1684). That is at the beginning of the Edo era. According to Yokoyama there was a change in the size of the sword fittings (*kanagu*) between these eras. In the *kanagu* of the latter part of the Muromachi and Momoyama periods, short *fuchi* with low *koshi* are conspicuous and thin *tsuba* are more prevalent. On the other hand, in the beginning of the Edo era, the *koshi* of the *fuchi* became long and the thickness of the *tsuba* increased. Therefore, the position of the *mekugi ana* was moved away from the imaginary line connecting the *ha-machi* to the *mune-machi*. Yokoyama presents several examples of swords with two *mekugi ana* but no sign of being *machi okuri* or *suriage* and he argues that the lower upper *mekugi* is the original one. In fact, in one of his examples the upper *mekugi* is plugged. Of course, there are exceptions to this rule since the styles of *koshirae* varied. Yokoyama suggests that this trend should not be exclusive to *Hizen* swords and deserves further study.

In an article published in 1991, Fred Fimio (**Fimio (1991)**) draws attention to an observation he made at gun shows in the USA in the eighties. There was an abundance *Shinto* swords, of not great quality, unpolished, *mumei*, and having two *mekugi ana* but with no trace of being *machi okuri* or *suriage*. One of the authors of these articles also noticed this fact. Fimio wrote about this curiosity to Tanobe Michihiro *Sensei* who replied that these swords had two *mekugi ana* because they were re-mounted with a new *koshirae*. We assume that the new *koshirae* had thicker fittings (*kanagu*) and therefore a new *mekugi ana* was drilled.

It should be pointed out that during the Edo period sword hardware (*kanagu*) was standardized. The *kashira* was required to be of a square shape and most of the hardware had to be made of *shakudo nanako*

alloy metal including the *tsuba*. (<https://tsuba.jyuluck-do.com/History.html>) As a result of this, much of the sword ornamentation during the Edo period was standardized in shape and fitment. In examining multiple swords with two or more *meguki ana*, it was discovered that the majority of *tanto* had two holes spaced approximately 1cm apart. For *wakizashi* and *katana*, the spacing was generally 2 cm apart. This consistency in spacing could easily be attributed to the fact that *tanto* may have multiple mounts, such as an *aikuchi koshirae* and a *chisagatana koshirae*. The addition of a *tsuba* and *seppa* to an *aikuchi* style mount would require the 1cm of additional spacing. For *wakizashi* and *katana*, the additional 2cm of spacing could also be attributed to the change and standardization of sword fittings in the Edo period. During that time the *fuchi* were elongated and *tsuba* became thicker. There were also some older blades that were mounted in *aikuchi* style of *koshirae*, that was not acceptable in Edo times for *wakizashi* or *katana*. Therefore the extra 2cm would easily accommodate the change in *koshirae* style mounting requirements.

In the remainder of this article, we exploit the idea that when a sword has two *mekugi ana* and is not *suriage*, it was remounted. In selecting examples to demonstrate this, however, we only reviewed a limited number of swords with multiple *meguki ana* and present only a limited number of examples. The reader can find many more examples in other sword literature.

Having fun with the above ideas

We have provided several examples to support our speculation on the placement of the *meguki ana*. There are many more examples, which can be found in sword literature, so the reader will have ample opportunity to test these ideas.

Examples 1- A sword by Horikawa Kunihiro

Fred Weissberg (Weissberg (2018) published a complete study of this sword in an article. The article is comprehensive so our contribution is minimal. A photograph of the sword, together with its present *Koshirae* is shown in Figure 2. As seen from the photograph, this sword has two *mekugi ana* with the bottom one plugged. Which one was the original *mekugi ana*? Our answer is that the top *mekugi ana* was the original in agreement with the examples given above. The reader may feel that the bottom *mekugi ana* is now plugged suggesting that it was the original. Note, however, that this *mekugi ana* pierces the signature. We investigated the signatures of Horikawa Kunihiro and it was not his habit to pierce his signature this way. Therefore, it is possible that this sword was mounted three times. The first re-mounting was probably to a *chisa-gatana* that has a *tsuba*. (see next examples). The second re-mounting is the one to its present *koshirae* as seen in Figure 1. It is an *aikuchi* (no *tsuba*) and hence the original *mekugi ana*, which is closer to the *habaki*, was used.



Figure 2- Photograph of the *Nakago* of a sword by Horikawa Kunihiro with its present *Koshirae*

Example 2- A sword by Shintogo Kunihiro

Fred Weissberg (Weissberg 2012 b) described this sword. The sword and its present *koshirae* is show in Figure 3. It is a *Koto* blade so the application of the reasoning described with the above sword is questionable. It has an *ubu nakago* pierced by three *mekugi ana* with the lowest one plugged. The question is what was the original *mekugi*? Following the reasoning presented previously, the sword was mounted at least three times. The original *mekugi ana* is the top one. The second *mekugi ana* is the one presently being used to accommodate the *chisa-gatana koshirae*.

If this observation is correct, it shows the NBTHK opinion that part of this *koshirae* dates from *Kanbun* is correct. If the above theory is correct the sword was mounted, a third time using a *tsuba* by Umetada Myoju but "the period of manufacture appears to be *Kanbun* (1661-1673)" using the second *mekugi ana* to accommodate the length of the *fuchi* which at this time became longer.



Figure 3- Photograph of the *Nakago* of a sword by Shintogo Kunihiro with its present *Koshirae*

Example 3- A sword by Ujifusa.

Aoi Art sold this sword. The *tanto* has a *Hozon* attribution to Uji Fusa (Seki). According to Kazushige Tsuruta description, Wakasa no Kami Ujifusa made the sword in the late Muromachi period. The sword has two *mekugi ana* . It is possible that the original *mekugi* is the top one because the bottom *mekugi ana* partially perforates the signature. Unfortunately, the sword is in *shirasaya* and so it is not possible to conclude anything about the *koshirae*. However according to the reasoning presented in this article it is possible to conclude that the sword was remounted as a *chisa-gatana* with a *tsuba*. The next two examples seem to confirm this.



Figure 4- Photograph of the *Nakago* of a sword by Ujifusa (Seki)

Example 4- A sword by Kanefusa

This sword is a *wakizashi* made by Kanefusa. It has a Hozon attribution to "Kanefusa (shinto)". According to Kazushige Tsuruta from Aoi Art, it was made in the Kanbun period. It has two *mekugi ana* in the *nakago*. The original one appears to be the top one and the second one was made to mount the sword as a *chisa-gatana* as can be seen in the figure 5.



Figure 5- Photograph of the *Nakago* of a sword by Kanefusa with its present *Koshirae*

Example 5- A wakisashi (sunnobi tanto) by Wakasa no Kami Ujifusa

This sword is a reference sword in the collection of Sanmei Tokugawa. The description is on their website, so we will not repeat it here. The sword has two *mekugi ana* in the *nakago* and it is clear that the original *mekugi ana* was the top one. First because the bottom *mekugi ana* perforates the signature and second because the present *koshirae* (a magnificent *chisa-gatana*) needs more space between the *habaki* and the *mekugi ana*.



Figure 5- Photograph of the *Nakago* of a sword by Wakasa no kami Ujifusa with its present *Koshirae*

CONCLUSION

In this article, we explored the following ideas, which are our opinions on the placement of the *mekugi ana*.

- 1) The sword smiths did not drill or carve the *mekugi ana* at random. They considered, at least sometimes, the *koshirae* used at the time of sword production when drilling or carving the *mekugi ana*.
- 2) If a sword is not *suriage* or *machi okuri* and has two (or more) *mekugi ana* this means that one of the *mekugi ana* was drilled or carved to accommodate another *koshirae*.

Based on the above we presented a few examples where it is possible to deduce where the original *mekugi ana* was and to understand why the modification of additional *mekugi ana* was necessary.

Of course, there are many exceptions to what we concluded in this article and the hypothesis should be used cautiously.

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